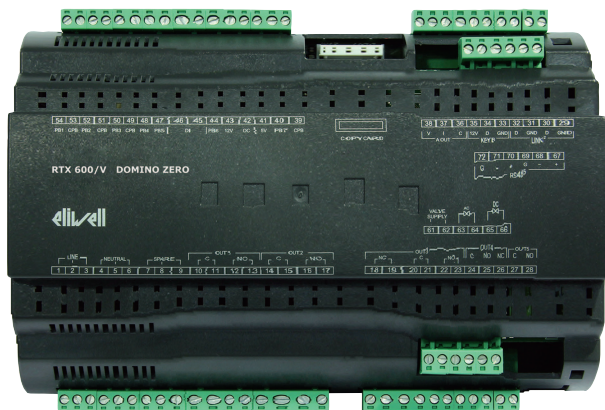


# RTX 600 /V DOMINO ZERO

Devices used to control remote counters and cold rooms with pulse electronic expansion valve management

## User Manual

10/2021



## Legal Information

The Schneider Electric brand and any trademarks of Schneider Electric SE and its subsidiaries referred to in this guide are the property of Schneider Electric SE or its subsidiaries. All other brands may be trademarks of their respective owners.

This guide and its content are protected under applicable copyright laws and furnished for informational use only. No part of this guide may be reproduced or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), for any purpose, without the prior written permission of Schneider Electric.

Schneider Electric does not grant any right or license for commercial use of the guide or its content, except for a nonexclusive and personal license to consult it on an "as is" basis. Schneider Electric products and equipment should be installed, operated, serviced, and maintained only by qualified personnel.

As standards, specifications, and designs change from time to time, information contained in this guide may be subject to change without notice.

To the extent permitted by applicable law, no responsibility or liability is assumed by Schneider Electric and its subsidiaries for any errors or omissions in the informational content of this material or consequences arising out of or resulting from the use of the information contained herein.

As part of a group of responsible, inclusive companies, we are updating our communications that contain non-inclusive terminology. Until we complete this process, however, our content may still contain standardized industry terms that may be deemed inappropriate by our customers.

© 2021Eliwell. All rights reserved.



|                                              |           |
|----------------------------------------------|-----------|
| <b>Safety information</b>                    | <b>7</b>  |
| <b>About the book</b>                        | <b>9</b>  |
| <b>Overview of the range</b>                 | <b>12</b> |
| Introduction                                 | 13        |
| Box contents                                 | 13        |
| Models                                       | 14        |
| Main features                                | 14        |
| Main components                              | 16        |
| Accessories                                  | 17        |
| List of valves                               | 18        |
| <b>Preliminary configurations</b>            | <b>19</b> |
| Introduction                                 | 20        |
| Available applications                       | 21        |
| Application AP1                              | 22        |
| Application AP2                              | 23        |
| Application AP3                              | 24        |
| Application AP4                              | 25        |
| Application AP5                              | 26        |
| Application AP6                              | 27        |
| Application AP7                              | 28        |
| Application AP8                              | 29        |
| <b>Mechanical installation</b>               | <b>30</b> |
| Before starting                              | 31        |
| Power supply disconnection                   | 31        |
| Considerations concerning programming        | 31        |
| Operating environment                        | 32        |
| Comments concerning installation             | 32        |
| Installation                                 | 33        |
| <b>Electrical connections</b>                | <b>35</b> |
| Best wiring practices                        | 36        |
| Wiring guidelines                            | 37        |
| Serial connections                           | 42        |
| Connectors                                   | 43        |
| Wiring diagrams                              | 45        |
| <b>Technical characteristics</b>             | <b>49</b> |
| Introduction                                 | 50        |
| Environmental and electrical characteristics | 50        |
| Input characteristics                        | 51        |
| Output characteristics                       | 52        |
| Serial ports                                 | 52        |
| Power supply                                 | 53        |
| Auxiliary EEV power supply                   | 53        |
| <b>User interface and operation</b>          | <b>54</b> |
| KDEPlus Terminal                             | 55        |
| KDWPlus Terminal                             | 56        |

|                                                  |            |
|--------------------------------------------------|------------|
| KDT Terminal (Vertical and Horizontal)           | 58         |
| KDX Terminal                                     | 60         |
| Device connection with terminal and/or viewer    | 62         |
| Using the device                                 | 64         |
| "Machine Status" Menu                            | 67         |
| "Programming" menu                               | 68         |
| Setting and calibrating the probes               | 69         |
| Setting the displayed values                     | 70         |
| Connection with Televis protocol                 | 72         |
| <b>Tools</b>                                     | <b>73</b>  |
| MFK (Multi Function Key)                         | 74         |
| UNICARD                                          | 74         |
| Copy parameters (UNICARD/MFK)                    | 75         |
| Boot Loader Firmware                             | 76         |
| Terminal shared on Link2                         | 76         |
| <b>Electronic Expansion Valve (EEV)</b>          | <b>77</b>  |
| Introduction                                     | 78         |
| List of valves                                   | 79         |
| Valve type                                       | 80         |
| Refrigerant type                                 | 81         |
| Local pressure transducer (4...20 mA)            | 82         |
| Local ratiometric transducer                     | 82         |
| Pressure/ratiometric transducer shared via Link2 | 83         |
| Ratiometric transducer shared via hardware       | 84         |
| Remote backup saturation probe                   | 84         |
| Superheat probe                                  | 84         |
| Protection fuse                                  | 85         |
| Valve regulation parameters                      | 87         |
| EEV driver description                           | 88         |
| Manual EEV management                            | 89         |
| EEV driver regulation                            | 90         |
| RTX DOMINO ZERO Tuning                           | 92         |
| <b>Local Network</b>                             | <b>96</b>  |
| Introduction                                     | 97         |
| Supervision gateway                              | 97         |
| Temperature probe sharing                        | 98         |
| Synchronized Defrost                             | 99         |
| Simultaneous Defrost                             | 100        |
| Sequential Defrost                               | 102        |
| Display shared on Link2                          | 104        |
| Setpoint value sharing                           | 104        |
| Sharing commands                                 | 105        |
| Sharing buzzer and alarm silenced command        | 105        |
| <b>Defrost</b>                                   | <b>106</b> |
| Defrost/Dripping                                 | 107        |
| Display and alarm operation                      | 108        |
| Automatic Defrost                                | 109        |



|                                                           |            |
|-----------------------------------------------------------|------------|
| Manual defrost .....                                      | 110        |
| RTC Defrost .....                                         | 112        |
| Electric heater defrost .....                             | 114        |
| Inversion defrost .....                                   | 116        |
| Hot gas defrost for plug-in systems .....                 | 118        |
| Hot gas defrost for systems with remote group .....       | 119        |
| Modulating electric heater defrost: Smart Defrost .....   | 120        |
| Dual evaporator defrost .....                             | 121        |
| <b>Regulators .....</b>                                   | <b>122</b> |
| Regulation .....                                          | 123        |
| Single Thermostat regulation (rE=0) .....                 | 124        |
| Dual Thermostat in series regulation (rE=1) .....         | 125        |
| Dual Thermostat in parallel regulation (rE=2) .....       | 126        |
| Two independent generic purpose regulators (rE=4) .....   | 127        |
| Continuous Modulation (rE=5 or 6) .....                   | 128        |
| Compressor .....                                          | 129        |
| Evaporator Fans .....                                     | 133        |
| Modulated Fans .....                                      | 139        |
| Condenser Fans .....                                      | 142        |
| Preheating .....                                          | 143        |
| Energy Saving .....                                       | 144        |
| Deep Cooling Cycle (DCC) .....                            | 145        |
| Anti-sweater heaters (Frame heater) .....                 | 147        |
| Auxiliary Output (AUX) .....                              | 150        |
| Auxiliary Output (Light) .....                            | 151        |
| Door control / External alarm .....                       | 152        |
| Stand-by .....                                            | 154        |
| Soft Start .....                                          | 155        |
| Pump down (Pump out) .....                                | 156        |
| Compressor oil heater .....                               | 157        |
| Counter Cleaning Function .....                           | 158        |
| <b>Practical examples .....</b>                           | <b>159</b> |
| Floating suction for positive superheat $\geq 4$ K) ..... | 160        |
| Floating suction with low superheat ( $\sim 0$ K) .....   | 161        |
| <b>Diagnostics .....</b>                                  | <b>163</b> |
| Alarms and indications .....                              | 164        |
| Probe alarms .....                                        | 167        |
| Minimum and maximum temperature alarm .....               | 168        |
| Defrost ended due to timeout alarm .....                  | 170        |
| External alarm .....                                      | 171        |
| Door open alarm .....                                     | 172        |
| <b>Parameters .....</b>                                   | <b>173</b> |
| User parameters RTX 600 /V .....                          | 174        |
| Installer parameters RTX 600 /V .....                     | 184        |
| <b>Modbus MSK 756 functions and resources .....</b>       | <b>205</b> |
| Setting parameters via Modbus .....                       | 206        |
| Modbus table content .....                                | 207        |

|                                  |     |
|----------------------------------|-----|
| Table of Modbus Parameters ..... | 209 |
| Folder Visibility Table .....    | 307 |
| Table of Modbus Resources .....  | 311 |



## Important information

Read these instructions carefully and visually inspect the equipment to familiarize yourself with the device before attempting to install it and/or put it into operation, or before servicing it. The following warning messages may appear anywhere in this documentation or on the equipment to warn of potential dangers or to call attention to information that can clarify or simplify a procedure.



The addition of this symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety warning symbol. It is used to warn the user of the potential dangers of personal injury. Observe all the safety warnings that follow this symbol to avoid the risk of serious injury or death.

### **DANGER**

**DANGER** indicates a dangerous situation which, if not avoided, **will result in** death or serious injury.

### **WARNING**

**WARNING** indicates a dangerous situation which, if not avoided, **could result in** death or serious injury.

### **CAUTION**

**CAUTION** indicates a potentially dangerous situation which, if not avoided, **could result in** minor or moderate injury.

### **NOTICE**

**NOTICE** used in reference to procedures not associated with physical injuries.

## Please Note

Electrical equipment must only be installed, used and repaired by qualified technicians. Schneider Electric and Eliwell do not accept any liability for any consequences arising from the use of this material. An authorized person is someone in possession of the skills and knowledge applicable to the structure, to the operation of the electrical equipment and to its installation, and who has received safety training in order to recognize and avoid the risks involved.

## Personnel qualification

Only personnel with suitable training and an in-depth knowledge and understanding of the contents of this manual and any other documentation relevant to the product are authorized to work on and with this product. Qualified personnel must be capable of identifying any dangers which may arise from the parameterization or changing of parameter values, and from the use of mechanical, electric and electronic equipment in general. Plus, they must be familiar with the personal safety laws, provisions and regulations which must be observed during system planning and implementation.

## Permitted use

This device is designed to control remote counters and cold rooms with pulse electronic expansion valve (EEV) in single or multiple evaporator configuration.

The device must be installed and used in accordance with the provided instructions and in particular, in normal conditions, dangerous energized parts must not be accessible.

The device should be suitably protected from water and dust. Access to the various product parts from the front should involve the use of a keyed or tooled locking mechanism.

The device is suited for integration into equipment for commercial use and/or similar for refrigeration purposes and has been verified on the basis of the harmonized European standards of reference.

Only use the product with the specified cables and accessories. Only use genuine accessories and spare parts.

## Prohibited use

Any use other than that indicated in the above paragraph "Permitted use" is strictly prohibited.

The relay contacts supplied are electromechanical and are subject to wear. The functional safety protection devices, specified by international or local laws, must be installed outside this device.

## Liability and residual risks

The liability of Schneider Electric and Eliwell is limited to the correct and professional use of the product according to the directives referred to herein and in the other supporting documents, and does not cover any damage (including but not limited to) the following causes:

- unspecified installation/use and, in particular, in contravention of the safety requirements of the legislation in force in the country of installation and/or specified in this document;
- use on equipment which does not provide adequate protection against electrocution, water and dust in the actual installation conditions;
- use on devices which allow access to dangerous parts without the aid of tools and/or which do not have a keyed locking mechanism;
- product tampering and/or alteration;
- installation/use on equipment that does not comply with the regulations in force in the country of installation.

## Disposal



The equipment (or product) must be subjected to separate waste collection in compliance with local legislation regarding waste disposal.

---

# About the book

---

## Document Scope

This document describes the devices **RTX 600 /V** used to control remote counters and cold rooms with pulse electronic expansion valve (EEV) management in single or multiple evaporator configuration, including information relating to installation and wiring.

Use this document to:

- Install and use your device
- Familiarize yourself with the functions of the device

**Note:** read this document and all related documents carefully before installing, operating or servicing the device.

## Validity Note

The technical characteristics of the devices described in the present document also appear online.

To access the information online, go to the Eliwell home page: [www.eliwell.com](http://www.eliwell.com).

## Related documents

| Publication title                      | Reference document code |
|----------------------------------------|-------------------------|
| Technical Sheet RTX 600 /V DOMINO ZERO | 9IS24738 (EN-IT)        |

You can download these technical publications and other technical information from our website at [www.eliwell.com](http://www.eliwell.com).

## Product related information

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>DANGER</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, FIRE OR ARC FLASH</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.</li> <li>• Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.</li> <li>• Before restoring the power supply, replace and secure all covers, hardware components and cables.</li> <li>• For all the devices requiring it, make sure there is an effective ground connection.</li> <li>• Use only the specified voltage when operating this device and any associated products.</li> <li>• Use appropriate safety interlocks where personnel and/or equipment hazards exist.</li> <li>• Install and operate this equipment in an enclosure appropriately rated for its intended environment and secured by a keyed or tooled locking mechanism.</li> <li>• Do not use this equipment for safety-critical functions.</li> <li>• Do not disassemble, repair, or modify this equipment.</li> <li>• Do not connect the device directly to the line voltage, unless expressly indicated.</li> </ul> |
| <b>Failure to follow these instructions will result in death or serious injury.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

|                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>DANGER</b>                                                                                                                                                                                                                       |
| <b>LOOSE WIRING CAN RESULT IN ELECTRIC SHOCK AND/OR FIRE</b>                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• Tighten the connections in compliance with the technical specifications for torque values and make sure the wiring is correct.</li> <li>• Do not insert more than one cable per terminal board connector unless you are using the ends of the cables (terminals).</li> </ul> |
| <b>Failure to follow these instructions will result in death or serious injury.</b>                                                                                                                                                                                                                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>HAZARD OF OVERHEATING AND/OR FIRE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• Do not use with loads other than those indicated in the technical data.</li> <li>• Do not exceed the maximum permitted current; in the case of higher loads, use a contactor with suitable power.</li> <li>• Verify that your application has not been designed with device outputs connected directly to devices generating a frequently activated capacitive load <sup>(1)</sup>.</li> <li>• Power lines and output connections must be suitably wired and protected by means of fuses when required by national and local regulations.</li> <li>• Connect the relay outputs, including the shared hub, using wires with a cross-section of at least 2.0 mm<sup>2</sup>(AWG 14), with a nominal temperature value of at least 80°C (176°F).</li> </ul> |
| <b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

<sup>(1)</sup> Even if the application does not apply a frequently activated capacitive load to the relay, capacitive loads reduce the life of any electromechanical relay and the installation of a contactor or external relay, sized and maintained according to the ratings and characteristics of the capacitive load, helps to minimize the consequences of relay degradation.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>LOSS OF CONTROL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>• The system designer must consider the potential failure modes of the control circuit and, for some critical control functions, provide a means for reaching a safe condition during and after a circuit failure. Examples of critical control functions are the emergency stop and end of travel stop, power supply cut-off and restart.</li> <li>• Separate or redundant control circuits must be provided for critical control functions.</li> <li>• The system control circuits can include communication connections. Keep in mind the implications of transmission delays or sudden connection failures.</li> <li>• Comply with all standards regarding accident prevention and local applicable safety directives.</li> <li>• Every implementation of this equipment must be tested individually and completely in order to verify its proper operation before it is commissioned.</li> </ul> |
| <b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## ⚠ WARNING

### UNINTENDED EQUIPMENT OPERATION

- Use shielded wires for all analog I/O and communication signals.
- Ground the wire shields for all analog I/O and communication signals in a single point (1).
- The signal cables (probes, digital inputs, communication, and relative power supplies) must be laid separately from the device power cables.
- Reduce the length of the wires and cables as much as possible and avoid winding them around electrically connected parts.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

(1) Grounding in several points is permitted if the connections are made to an equipotential ground surface that is sized to avoid damage to the cable shields in the event of a short circuit in the power supply.

When handling the equipment, take care to avoid damage caused by electrostatic discharge. In particular, the unshielded connectors are extremely vulnerable to electrostatic discharge.

## ⚠ WARNING

### UNINTENDED EQUIPMENT OPERATION DUE TO ELECTROSTATIC DISCHARGE

- Keep the equipment in the protective packaging until ready for installation.
- The device must only be installed in type-approved cupboards and/or in points that prevent unauthorized access and provide protection from electrostatic discharge.
- When handling sensitive equipment, use a grounded device protecting against electrostatic discharge.
- Before handling the equipment, always discharge the static electricity from the body by touching an earthed surface or type-approved antistatic mat.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

The procedure for loading one of the preset applications restores the original factory values, i.e. the default values shown in the parameters table, except for the parameters that are not present within the preset applications **AP1...AP8** which retain the value set previously. These values, left unaltered, may not be suitable and may therefore need to be changed.

## NOTICE

### INOPERABLE DEVICE

Verify the parameters after loading a preset application.

**Failure to follow these instructions can result in equipment damage.**

## Flammable refrigerant gases

This equipment is designed to operate in non-hazardous areas and where applications which generate - or could potentially generate - hazardous atmospheres have been isolated. Install this equipment only in areas and with applications known to be constantly free from hazardous atmospheres.

## ⚠ DANGER

### HAZARD OF EXPLOSION

- Install and use this equipment in non-hazardous locations only.
- Do not install or use this equipment in applications which could generate hazardous atmospheres, such as those using flammable refrigerants.

**Failure to follow these instructions will result in death or serious injury.**

For information regarding the use of control equipment in applications capable of generating hazardous materials, please contact the regulatory office or the local, regional or national certification authority.

---

# Overview of the range

---

## Contents

This section includes the following topics:

- Introduction ..... 13
- Box contents ..... 13
- Models ..... 14
- Main features ..... 14
- Main components ..... 16
- Accessories ..... 17
- List of valves ..... 18



# Introduction

## General Description

The **RTX 600 /V** family consists of devices used to control remote counters and cold rooms with pulse electronic expansion valve (EEV) management in single or multiple evaporator configuration.

The devices are available in a DIN rail-mounted version.

Every device has 8 preset applications: **AP1...AP8**, that pre-configure the device to work with 8 real usage situations, reducing installation time and only requiring precision changes to parameters.

## Main features

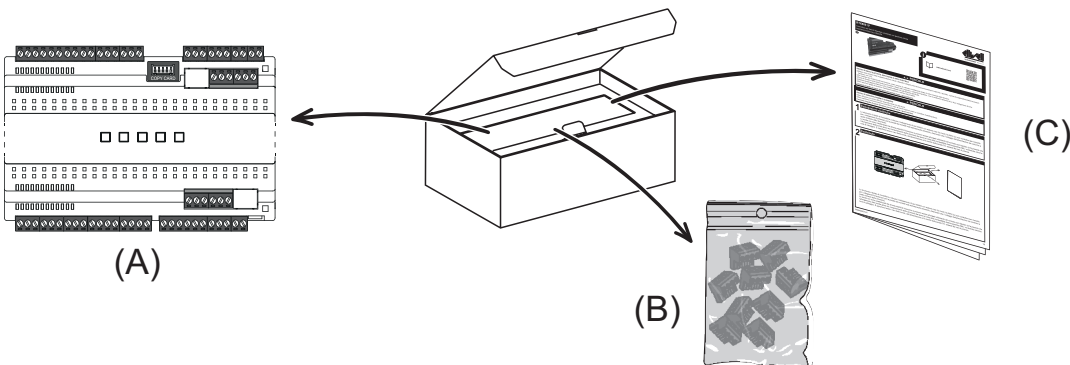
The main features are as follows:

- Evaporator superheat regulation via an integrated driver
- 2 ON/OFF regulators for HEAT/COOL
- Single and dual evaporator defrost (heaters, inversion cycle, hot gas)
- Evaporator fans
- Anti-sweater heaters (Frame heater)
- AUX
- Light
- Door switch
- ON / OFF
- Deep cooling cycle
- Dynamic setpoint
- Day / Night
- Diagnostics
- Preset applications
- Configurable inputs/outputs
- LINK<sup>2</sup> local network
- Modbus communication protocol via RS485
- Compatibility with Device Manager (DM)
- Compatibility with UNICARD and Multi Function Key (MFK)

In this manual, the photographs and diagrams are provided to illustrate the device (and other Eliwell devices) and are purely illustrative. The corresponding dimensions and proportions may not correspond to actual dimensions in terms of life-size or scale. Furthermore, all the wiring or electrical diagrams should be considered as simplified representations which may not exactly correspond to the reality.

## Box contents

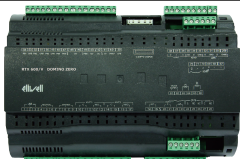
The figure below shows the contents of the box:



The box contains:

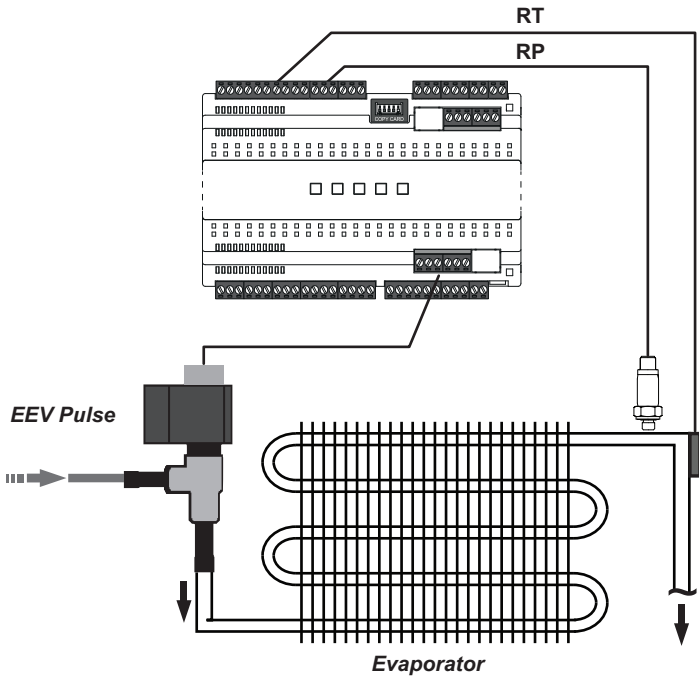
| Label | Description                    |
|-------|--------------------------------|
| A     | Device                         |
| B     | Disconnectable screw terminals |
| C     | Instruction sheet              |

Models

| Image                                                                             | Description                      |
|-----------------------------------------------------------------------------------|----------------------------------|
|  | RTX 600 /V DOMINO ZERO           |
|  | RTX 600 /V DOMINO ZERO + KDEPlus |

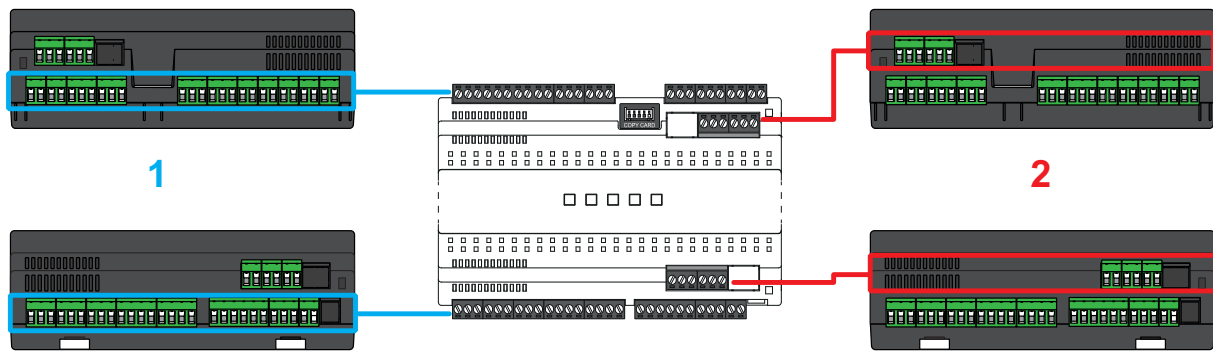
Main features

The devices are available in a DIN rail-mounted version.  
The figure below shows a connection example for the device:



**Legend:** RT = Refrigerant Temperature; RP = Refrigerant Pressure; **EEV Pulse** = Pulse Valve; **Evaporator** = Evaporator.

The device range consists of a base board and a top board:



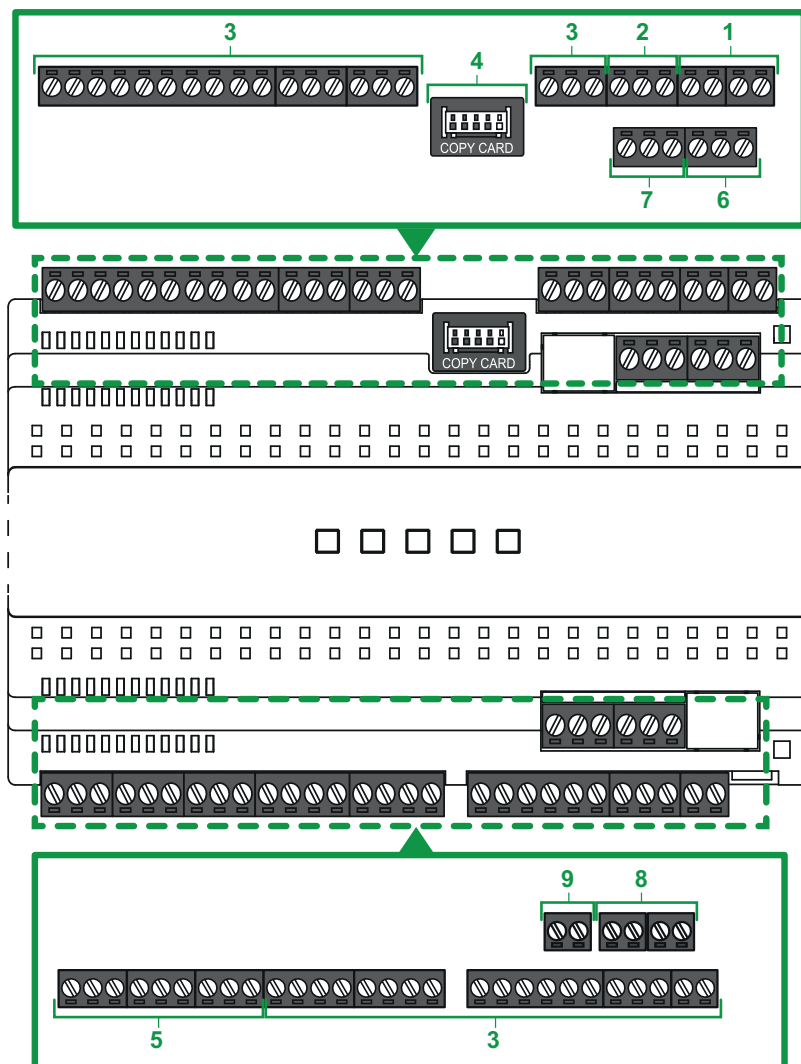
**Legend:** 1 = Main Board; 2 = Upper Card.

The table below shows the main features of the device:

| Characteristics    | Description                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply       | SMPS 100...240 Vac ( $\pm 10\%$ ), 50/60 Hz                                                                                                                                                                                                                                                                                                                                                             |
| Input type         | <ul style="list-style-type: none"> <li>• 5 configurable NTC/PTC/Pt1000/DI inputs (Pb1...Pb5)</li> <li>• 1 configurable 4...20 mA / DI input (Pb6)</li> <li>• 1 configurable ratiometric / DI input (Pb7)</li> <li>• 1 multifunctional voltage free digital input (DI)</li> </ul>                                                                                                                        |
| Output type        | <ul style="list-style-type: none"> <li>• 5 relay digital outputs</li> <li>• 1 multifunctional OC (Open Collector) output</li> <li>• 1 multifunctional DAC output (0...10 Vdc / 4...20 mA)</li> <li>• 1 pulse EEV driver output on SSR relay with maximum current of 300 mA</li> </ul>                                                                                                                   |
| Display            | NO                                                                                                                                                                                                                                                                                                                                                                                                      |
| Nut                | YES                                                                                                                                                                                                                                                                                                                                                                                                     |
| Communication port | <ul style="list-style-type: none"> <li>• 1 TTL for UNICARD / Device Manager connection (via DMI) / Multi Function Key (maximum length 3 m / 9.84 ft.)</li> <li>• 1 opto-isolated RS485 serial port for supervision</li> <li>• 1 serial port for local Link<sup>2</sup> network connection</li> <li>• 1 serial port for terminal (KDEPlus, KDWPlus, KDT or KDX) or viewer (ECPlus) connection</li> </ul> |

## Main components

The main components of the device are:



**NOTE:** in the figure the device has disconnectable screw terminals fitted.

| Label | Description            | Position   | For further information, please refer to: |
|-------|------------------------|------------|-------------------------------------------|
| 1     | Link2                  | Base board | Serial connections and Serial ports       |
| 2     | Terminal               | Base board | Serial ports                              |
| 3     | Inputs/Outputs         | Base board | Base board wiring diagrams                |
| 4     | TTL                    | Base board | Serial ports                              |
| 5     | Power supply           | Base board | Power supply                              |
| 6     | RS485-1 port           | Top board  | Serial connections and Serial ports       |
| 7     | RS485-2 port           | Top board  | Serial connections and Serial ports       |
| 8     | Pulse EEV power supply | Top board  | Pulse EEV power supply                    |
| 9     | Pulse EEV output       | Top board  | Top board wiring diagram                  |

## Accessories

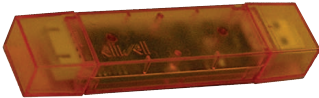


### HAZARD OF ELECTRIC SHOCK, FIRE OR ARC FLASH

Only connect compatible accessories to the instrument.

**Failure to follow these instructions will result in death or serious injury.**

Contact an Eliwell representative for further information regarding the accessories that can be used.

| Accessory                                                                           | Description                                                            |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------|
|    | KDX 500/5000                                                           |
|    | KDEPlus                                                                |
|   | KDWPlus                                                                |
|  | Vertical KDT                                                           |
|  | Horizontal KDT                                                         |
|  | ECPlus                                                                 |
|  | Multi Function Key (MFK)                                               |
|  | UNICARD USB/TTL<br>EXTENSION CABLE USB-A/A<br>NETWORK POWER SUPPLY USB |
|  | NTC, PTC, Pt1000                                                       |

| Accessory                                                                          | Description                                                                         |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   | PRESSURE TRANSDUCER (EWPA)                                                          |
|   | RATIOMETRIC TRANSDUCER (EWPA)                                                       |
|  | Pulse electronic expansion valves (EEV) <b>PXV</b><br>(with 0.5 to 2.7 mm orifices) |

## List of valves

Below is the list of electronic expansion valves (EEV) compatible with the device:

| <b>⚠ WARNING</b>                                                                                      |  |
|-------------------------------------------------------------------------------------------------------|--|
| <b>UNINTENDED EQUIPMENT OPERATION</b>                                                                 |  |
| Before using the valve, verify the parameters and the data provided by the valve manufacturer.        |  |
| <b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b> |  |

The following valves are **COMPATIBLE** with the device:

| Manufacturer                  | Valve | Notes                       |
|-------------------------------|-------|-----------------------------|
| Eliwell by Schneider Electric | PXV   | Orifices from 0.5 to 2.7 mm |

---

# Preliminary configurations

---

## Contents

This section includes the following topics:

|                              |    |
|------------------------------|----|
| Introduction .....           | 20 |
| Available applications ..... | 21 |
| Application AP1 .....        | 22 |
| Application AP2 .....        | 23 |
| Application AP3 .....        | 24 |
| Application AP4 .....        | 25 |
| Application AP5 .....        | 26 |
| Application AP6 .....        | 27 |
| Application AP7 .....        | 28 |
| Application AP8 .....        | 29 |

# Introduction

## Overview

The **RTX 600 /V** family consists of devices used to control remote counters and cold rooms with pulse electronic expansion valve (EEV) management in single or multiple evaporator configuration.

Every device has 8 preset applications: **AP1...AP8**, that pre-configure the device to work with 8 real usage situations, reducing installation time and only requiring precision changes to parameters.

## Applications

Changing the controller operating parameters does not affect the preset application values. The first time the instrument is switched on, the operating parameters are the same (for value and visibility) as those for application **AP1**.

Applications **AP1...AP8** cannot be edited from the instrument but only via Device Manager, a software program available to download from the [www.eliwell.com](http://www.eliwell.com) website.

## Switching on for the first time

Once the electrical connections have been completed, simply power up the device for it to start working. At the first startup:

1. Select and load the preset application - **AP1...AP8** - that best reflects the usage requirements.
2. Verify and, if necessary, adjust the value of the main device parameters to adapt the selected application to your system.
3. Make sure there are no active alarms (see alarms section).

## Loading Preset Applications

The procedure for loading one of the preset applications is:

1. Switch on the terminal connected to the device; press and hold  until label "AP1" appears.  
**Note:** On the **KDT** terminal, within 30 seconds of switching the device on, press and hold any button for a least 1 second to unlock the terminal and then press and hold  and  simultaneously until label "AP1" appears.  
**Note:** On the **KDX** terminal, within 30 seconds of switching the device on, press  and  simultaneously until label "AP1" appears.
2. Scroll through applications **AP1...AP8** using  and .
3. Confirm the selected preset application using .  
**Note:** The process can be canceled by pressing  or letting a timeout occur (15 seconds)
4. If the procedure was completed successfully, the display will show "**yES**"; otherwise it will show "**Err**"
5. The device will restart and revert to showing the main display

The procedure for loading one of the preset applications restores the respective default values, with the exception of the parameters **NON** specific to the application that retain the value set previously. These values, left unaltered, may not be suitable and may therefore need to be changed.

### NOTICE

#### INOPERABLE DEVICE

Verify the parameters after loading a preset application.

**Failure to follow these instructions can result in equipment damage.**



## Available applications

### Description

Below is a short description of the preset applications:

- **AP1:** NT "REFRIGERATED CABINETS" (0°C / 32°F) for the storage of Dairy products, Fruit/Vegetables and Frozen food.
- **AP2:** AT "REFRIGERATED CABINETS" (3°C / 37.4°F) for the storage of Dairy products, Fruit/Vegetables and Frozen food.
- **AP3:** LT "REFRIGERATED CABINETS" (-18°C / 0.4°F) for the storage of Frozen food.
- **AP4:** NT "COLD ROOMS" (0°C / 32°F) for the storage of Dairy products, Fruit/Vegetables and Frozen food.
- **AP5:** AT "COLD ROOMS" (3°C / 37.4°F) for the storage of Dairy products, Fruit/Vegetables and Frozen food.
- **AP6:** LT "COLD ROOMS" (-18°C / 0.4°F) for the storage of Frozen food.
- **AP7:** LT "HORIZONTAL ISLAND" (-18°C / 0.4°F) for the storage of Frozen food.
- **AP8:** LT "COMBINED UPRIGHT REFRIGERATED CABINETS" (-18°C / 0.4°F) for the storage of Frozen food.

### Summary

|                                                      |               | AP1        | AP2        | AP3        | AP4        | AP5        | AP6        | AP7        | AP8        |
|------------------------------------------------------|---------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>INPUTS</b>                                        |               |            |            |            |            |            |            |            |            |
| <b>Pb1</b>                                           | NTC           | REG1/((●)) | REG1/((●)) | REG1/((●)) | REG1/((●)) | REG1/((●)) | REG1/((●)) | REG1/((●)) | REG1/((●)) |
| <b>Pb2</b>                                           | NTC           |            |            |            |            |            |            |            | REG2/((●)) |
| <b>Pb3</b>                                           | NTC           | -          | -          | -          | -          | -          | -          | -          |            |
| <b>Pb4</b>                                           | NTC           | -          | -          | -          | -          | -          | -          | -          | -          |
| <b>Pb5</b>                                           | NTC           | EEV        | EEV        | EEV        | EEV        | EEV        | EEV        | EEV        | EEV        |
| <b>Pb6</b>                                           | 4...20 mA     | EEV        | EEV        | EEV        | EEV        | EEV        | EEV        | EEV        | EEV        |
| <b>Pb7</b>                                           | Ratiometric   | -          | -          | -          | -          | -          | -          | -          | -          |
| <b>DI</b>                                            | Digital Input | -          | -          | -          |            |            |            | -          | -          |
| <b>OUTPUTS</b>                                       |               |            |            |            |            |            |            |            |            |
| <b>Out1</b>                                          | Relay         |            |            |            |            |            |            |            |            |
| <b>Out2</b>                                          | Relay         |            |            |            |            |            |            |            |            |
| <b>Out3</b>                                          | Relay         |            |            |            |            |            |            |            |            |
| <b>Out4</b>                                          | Relay         |            |            |            |            |            |            |            |            |
| <b>Out5</b>                                          | Relay         | AUX        | AUX        | AUX        | -          | -          | -          | -          | -          |
| <b>EEV</b>                                           | Output        | EEV        | EEV        | EEV        | EEV        | EEV        | EEV        | EEV        | EEV        |
| <b>A OUT</b>                                         | Output        | -          | -          | -          | -          | -          | -          | -          | -          |
| <b>OC</b>                                            | Output        | -          | -          | -          | -          | -          | -          | -          | -          |
| <b>INPUTS / OUTPUTS ONLY PRESENT ON KDX TERMINAL</b> |               |            |            |            |            |            |            |            |            |
| <b>Pb8</b>                                           | 4...20 mA     | -          | -          | -          | -          | -          | -          | -          | -          |
| <b>DI1</b>                                           | Digital Input | -          | -          | -          | -          | -          | -          | -          | -          |
| <b>DI2</b>                                           | Digital Input | -          | -          | -          | -          | -          | -          | -          | -          |
| <b>OUT4</b>                                          | Relay         | -          | -          | -          | -          | -          | -          | -          | -          |
| <b>OUT5</b>                                          | Relay         | -          | -          | -          | -          | -          | -          | -          | -          |

#### Legend:

|                                  |                                         |
|----------------------------------|-----------------------------------------|
| <b>REG1</b> = Regulator 1        | <b>REG2</b> = Regulator 2               |
| <b>EEV</b> = EEV input or output | <b>AUX</b> = Auxiliary output regulator |
| ((●)) = Alarm regulator          | = Defrost regulator                     |
| = Compressor regulator           | = Fan regulator                         |
| = Door switch regulator          | = Light regulator                       |

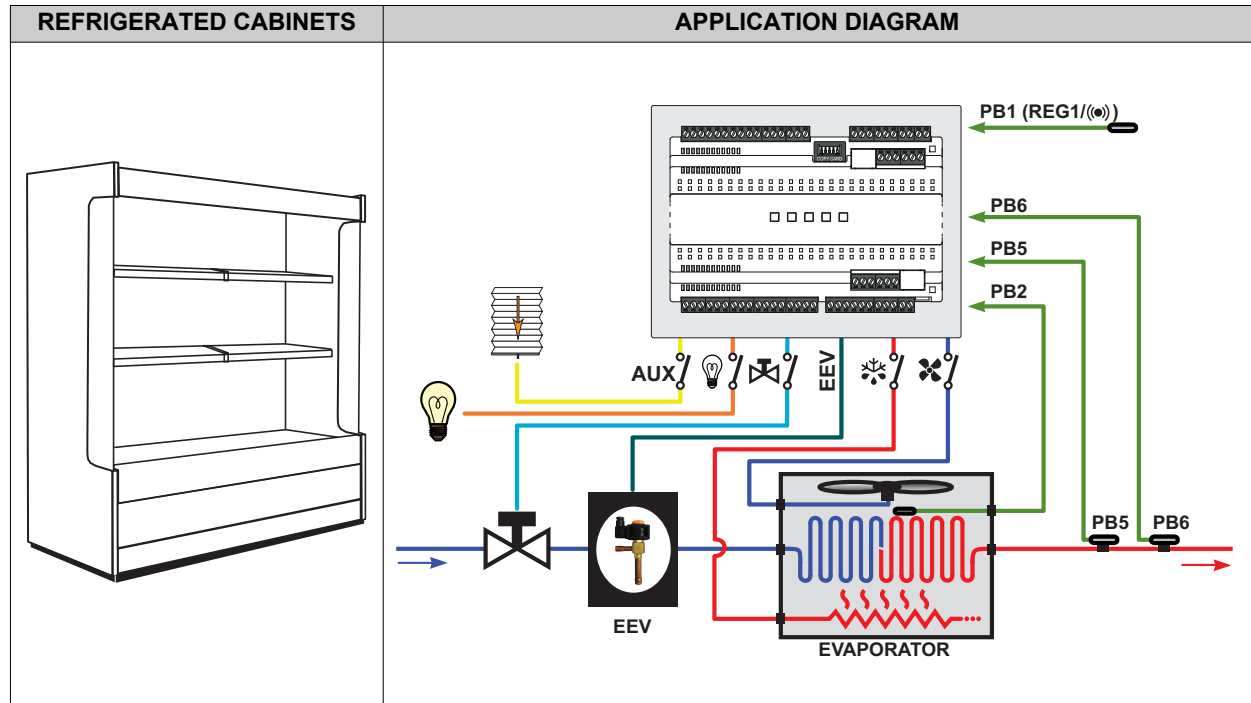
### Regulation

Regulator 1 (**REG1**) will be activated when the temperature exceeds the value  $T > SP1 + dF1$ , and will be deactivated when  $T < SP1$ . For these applications, the regulation differential will work in relative mode.

## Application AP1

### Overview

The application is configured for NT “**REFRIGERATED CABINETS**” (0°C / 32°F) for the storage of Dairy products, Fruit/Vegetables and Frozen food. The set configuration is intended for:



**Legend:** REG1 = Regulator 1; EEV = Electronic expansion valve; Evaporator = Evaporator.

### Application details

#### Input configuration:

- Pb1 input = Regulation 1 / Alarm
- Pb2 input = Defrost / Evaporator fans
- Pb3 input = Not set
- Pb4 input = Not set
- Pb5 input = EEV temperature sensor
- Pb6 input = EEV pressure transducer
- Pb7 input = Not set
- DI input = Not set
- Pb8 input (KDX) = Not set
- DI1 input (KDX) = Not set
- DI2 input (KDX) = Not set

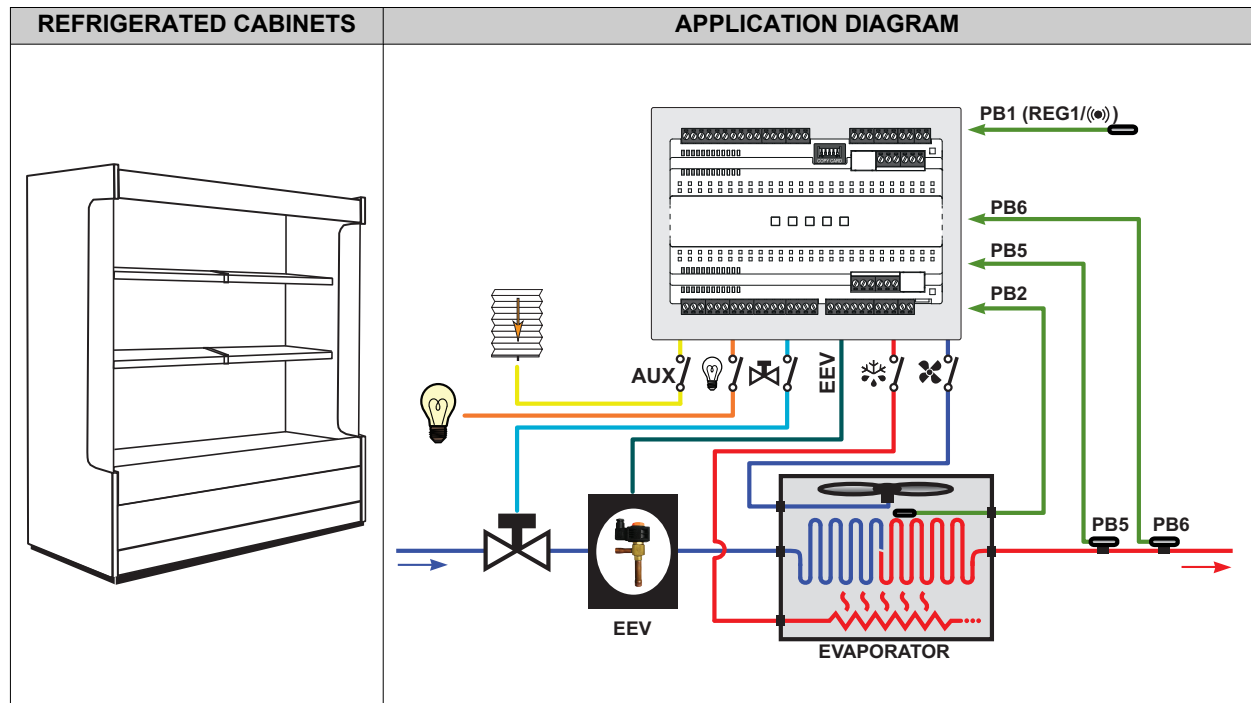
#### Output configuration:

- OUT1 output (relay) = Compressor
- OUT2 output (relay) = Evaporator fans
- OUT3 output (relay) = Defrost
- OUT4 output (relay) = Light
- OUT5 output (relay) = AUX
- EEV output = EEV valve
- A OUT output = Not set
- OC output = Not set
- OUT4 output (KDX - relay) = Not set
- OUT5 output (KDX - relay) = Not set

## Application AP2

### Overview

The application is configured for AT “**REFRIGERATED CABINETS**” (3°C / 37.4°F) for the storage of Dairy products, Fruit/Vegetables and Frozen food. The set configuration is intended for:



**Legend:** REG1 = Regulator 1; EEV = Electronic expansion valve; Evaporator = Evaporator.

### Application details

#### Input configuration:

- Pb1 input = Regulation 1 / Alarm
- Pb2 input = Defrost / Evaporator fans
- Pb3 input = Not set
- Pb4 input = Not set
- Pb5 input = EEV temperature sensor
- Pb6 input = EEV pressure transducer
- Pb7 input = Not set
- DI input = Not set
- Pb8 input (KDX) = Not set
- DI1 input (KDX) = Not set
- DI2 input (KDX) = Not set

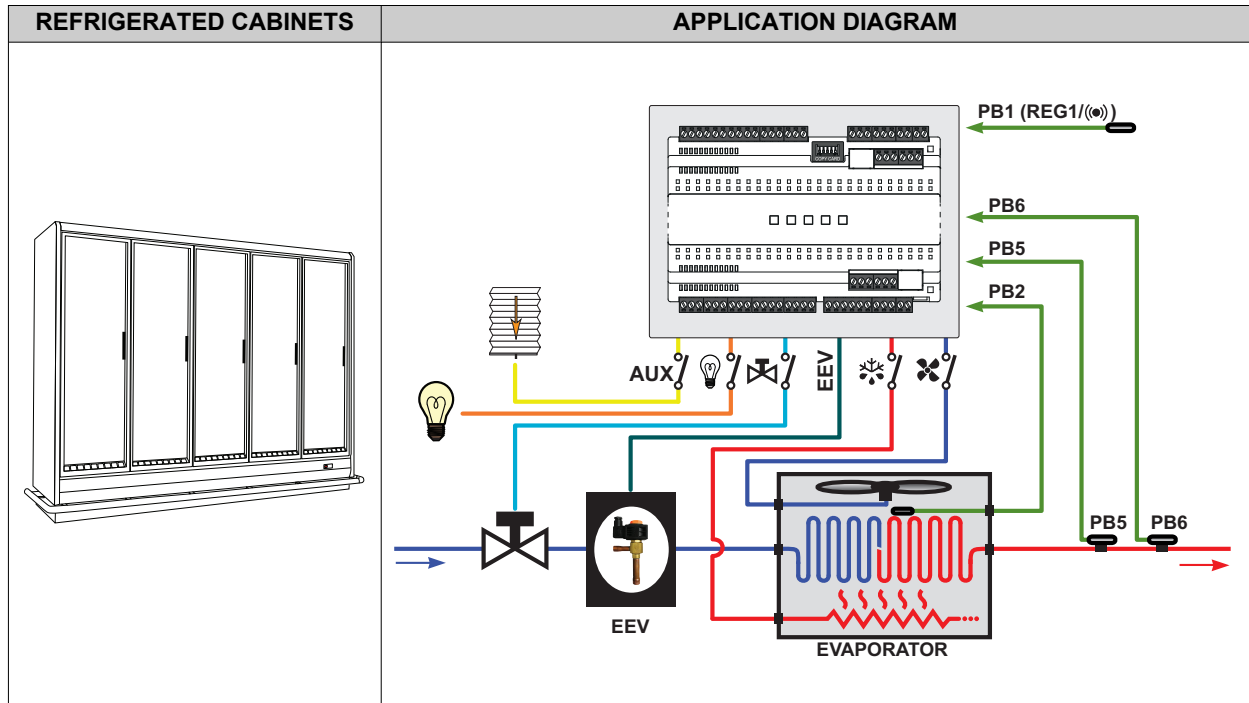
#### Output configuration:

- OUT1 output (relay) = Compressor
- OUT2 output (relay) = Evaporator fans
- OUT3 output (relay) = Defrost
- OUT4 output (relay) = Light
- OUT5 output (relay) = AUX
- EEV output = EEV valve
- A OUT output = Not set
- OC output = Not set
- OUT4 output (KDX - relay) = Not set
- OUT5 output (KDX - relay) = Not set

## Application AP3

### Overview

The application is configured for LT “REFRIGERATED CABINETS” (-18°C / 0.4°F) for the storage of Frozen food. The set configuration is intended for:



**Legend:** REG1 = Regulator 1; EEV = Electronic expansion valve; Evaporator = Evaporator.

### Application details

#### Input configuration:

- Pb1 input = Regulation 1 / Alarm
- Pb2 input = Defrost / Evaporator fans
- Pb3 input = Not set
- Pb4 input = Not set
- Pb5 input = EEV temperature sensor
- Pb6 input = EEV pressure transducer
- Pb7 input = Not set
- DI input = Not set
- Pb8 input (KDX) = Not set
- DI1 input (KDX) = Not set
- DI2 input (KDX) = Not set

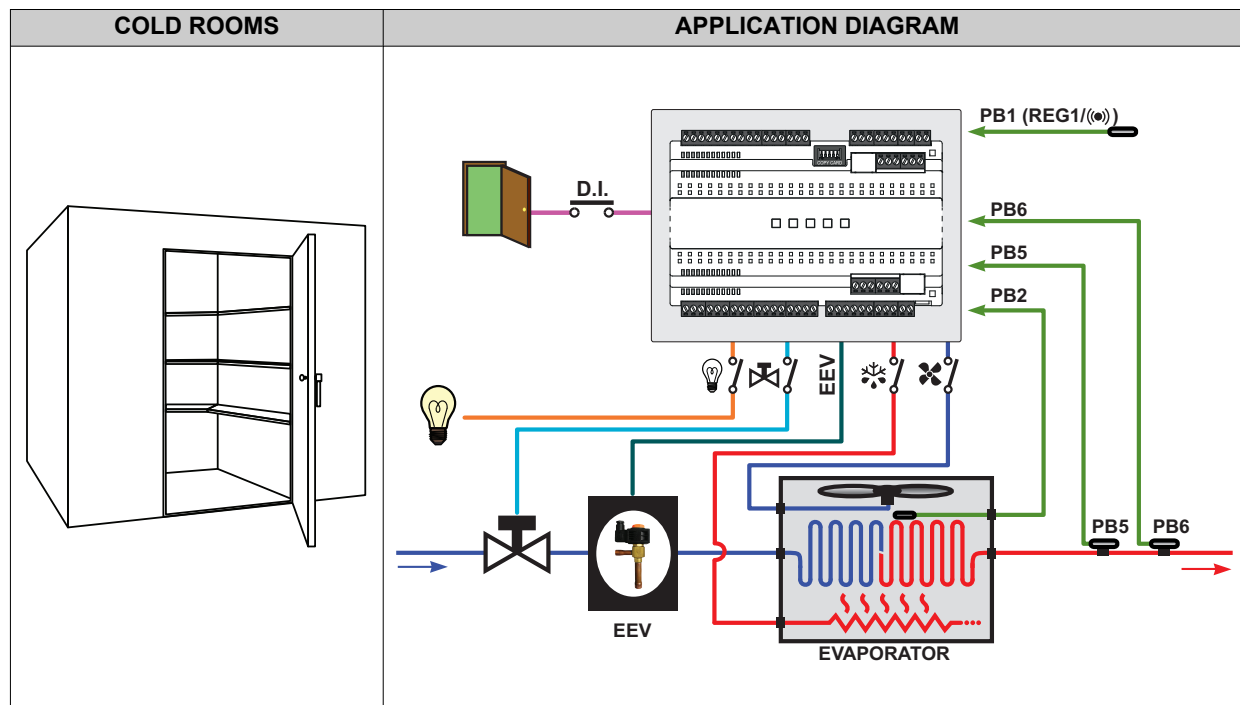
#### Output configuration:

- OUT1 output (relay) = Compressor
- OUT2 output (relay) = Evaporator fans
- OUT3 output (relay) = Defrost
- OUT4 output (relay) = Light
- OUT5 output (relay) = AUX
- EEV output = EEV valve
- A OUT output = Not set
- OC output = Not set
- OUT4 output (KDX - relay) = Not set
- OUT5 output (KDX - relay) = Not set

## Application AP4

### Overview

The application is configured for NT “**COLD ROOMS**” (0°C / 32°F) for the storage of Dairy products, Fruit/Vegetables and Frozen food. The set configuration is intended for:



**Legend:** REG1 = Regulator 1; EEV = Electronic expansion valve; Evaporator = Evaporator.

### Application details

#### Input configuration:

- Pb1 input = Regulation 1 / Alarm
- Pb2 input = Defrost / Evaporator fans
- Pb3 input = Not set
- Pb4 input = Not set
- Pb5 input = EEV temperature sensor
- Pb6 input = EEV pressure transducer
- Pb7 input = Not set
- Pb8 input = Not set (present on terminal KDX)
- DI input = Door switch
- Pb8 input (KDX) = Not set
- DI1 input (KDX) = Not set
- DI2 input (KDX) = Not set

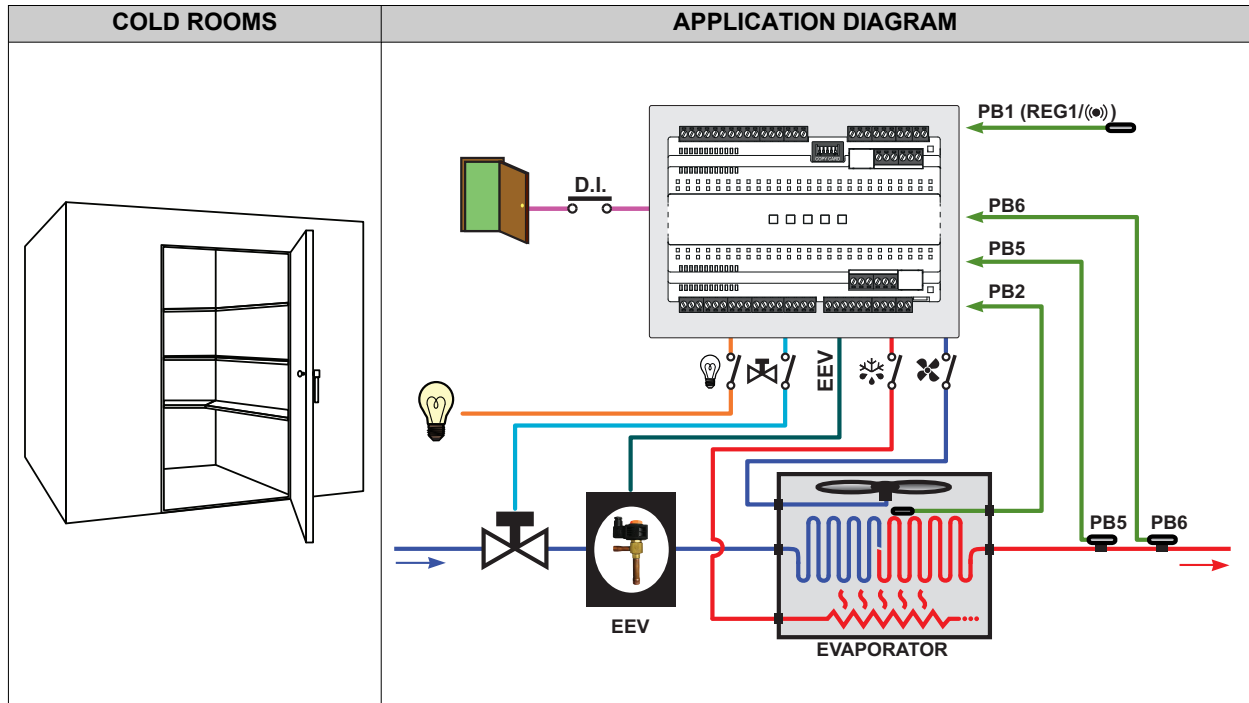
#### Output configuration:

- OUT1 output (relay) = Compressor
- OUT2 output (relay) = Evaporator fans
- OUT3 output (relay) = Defrost
- OUT4 output (relay) = Light
- OUT5 output (relay) = Not set
- EEV output = EEV valve
- A OUT output = Not set
- OC output = Not set
- OUT4 output (KDX - relay) = Not set
- OUT5 output (KDX - relay) = Not set

## Application AP5

### Overview

The application is configured for AT “**COLD ROOMS**” (3°C / 37.4°F) for the storage of Dairy products, Fruit/Vegetables and Frozen food. The set configuration is intended for:



**Legend:** REG1 = Regulator 1; EEV = Electronic expansion valve; Evaporator = Evaporator.

### Application details

#### Input configuration:

- Pb1 input = Regulation 1 / Alarm
- Pb2 input = Defrost / Evaporator fans
- Pb3 input = Not set
- Pb4 input = Not set
- Pb5 input = EEV temperature sensor
- Pb6 input = EEV pressure transducer
- Pb7 input = Not set
- Pb8 input = Not set (present on terminal KDX)
- DI input = Door switch
- Pb8 input (KDX) = Not set
- DI1 input (KDX) = Not set
- DI2 input (KDX) = Not set

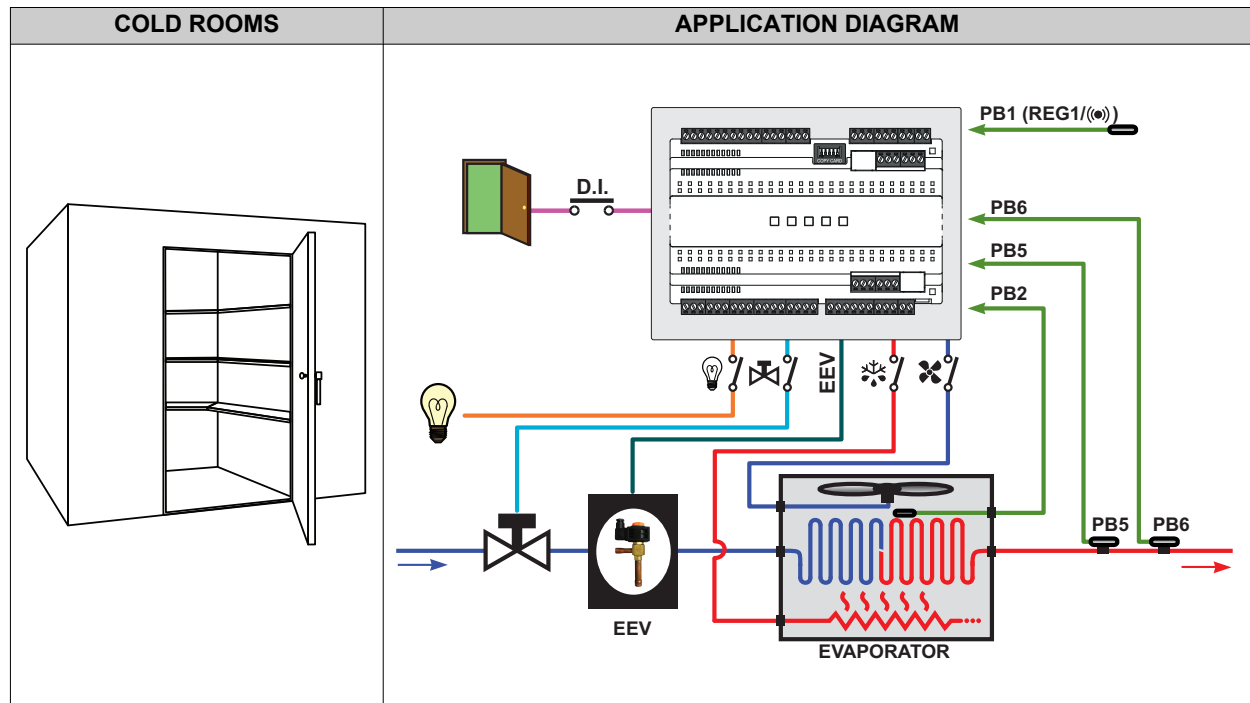
#### Output configuration:

- OUT1 output (relay) = Compressor
- OUT2 output (relay) = Evaporator fans
- OUT3 output (relay) = Defrost
- OUT4 output (relay) = Light
- OUT5 output (relay) = Not set
- EEV output = EEV valve
- A OUT output = Not set
- OC output = Not set
- OUT4 output (KDX - relay) = Not set
- OUT5 output (KDX - relay) = Not set

## Application AP6

### Overview

The application is configured for LT “COLD ROOMS” (-18°C / 0.4°F) for the storage of Frozen food. The set configuration is intended for:



**Legend:** REG1 = Regulator 1; EEV = Electronic expansion valve; Evaporator = Evaporator.

### Application details

#### Input configuration:

- Pb1 input = Regulation 1 / Alarm
- Pb2 input = Defrost / Evaporator fans
- Pb3 input = Not set
- Pb4 input = Not set
- Pb5 input = EEV temperature sensor
- Pb6 input = EEV pressure transducer
- Pb7 input = Not set
- Pb8 input = Not set (present on terminal KDX)
- DI input = Door switch
- Pb8 input (KDX) = Not set
- DI1 input (KDX) = Not set
- DI2 input (KDX) = Not set

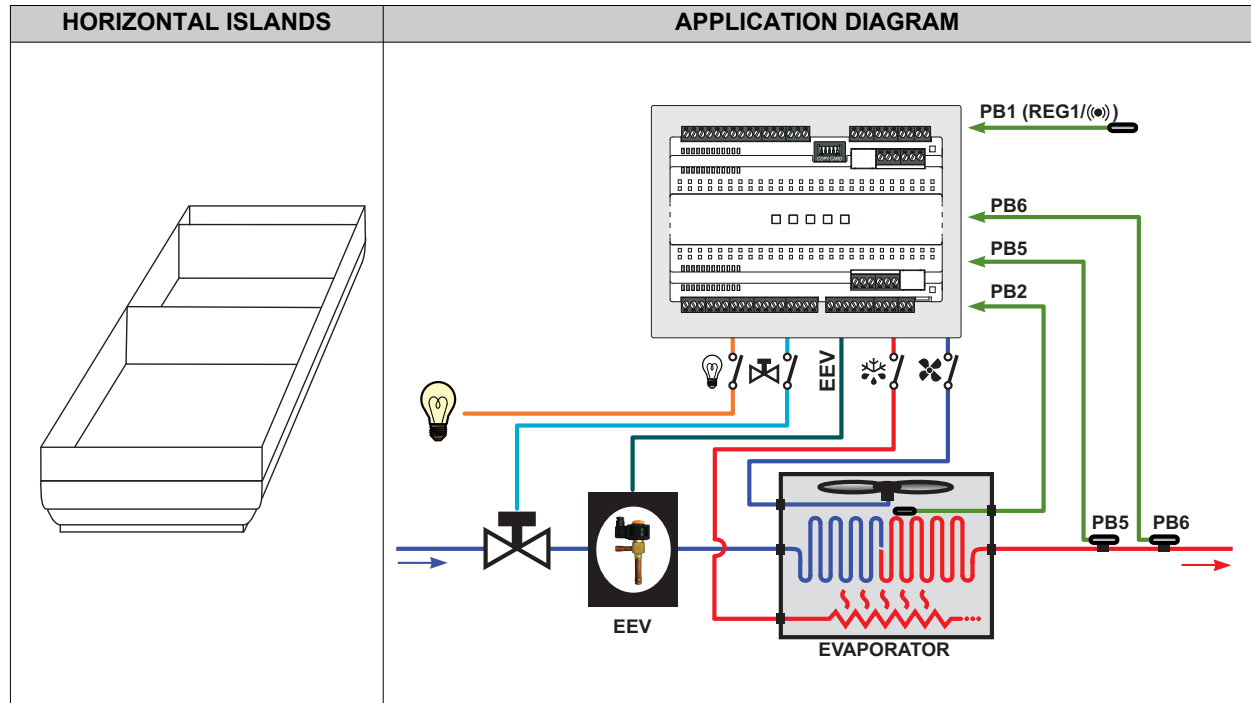
#### Output configuration:

- OUT1 output (relay) = Compressor
- OUT2 output (relay) = Evaporator fans
- OUT3 output (relay) = Defrost
- OUT4 output (relay) = Light
- OUT5 output (relay) = Not set
- EEV output = EEV valve
- A OUT output = Not set
- OC output = Not set
- OUT4 output (KDX - relay) = Not set
- OUT5 output (KDX - relay) = Not set

## Application AP7

### Overview

The application is configured for LT “**HORIZONTAL ISLAND**” (-18°C / 0.4°F) for the storage of Frozen food. The set configuration is intended for:



**Legend:** REG1 = Regulator 1; EEV = Electronic expansion valve; Evaporator = Evaporator.

### Application details

#### Input configuration:

- Pb1 input = Regulation 1 / Alarm
- Pb2 input = Defrost / Evaporator fans
- Pb3 input = Not set
- Pb4 input = Not set
- Pb5 input = EEV temperature sensor
- Pb6 input = EEV pressure transducer
- Pb7 input = Not set
- DI input = Not set
- Pb8 input (KDX) = Not set
- DI1 input (KDX) = Not set
- DI2 input (KDX) = Not set

#### Output configuration:

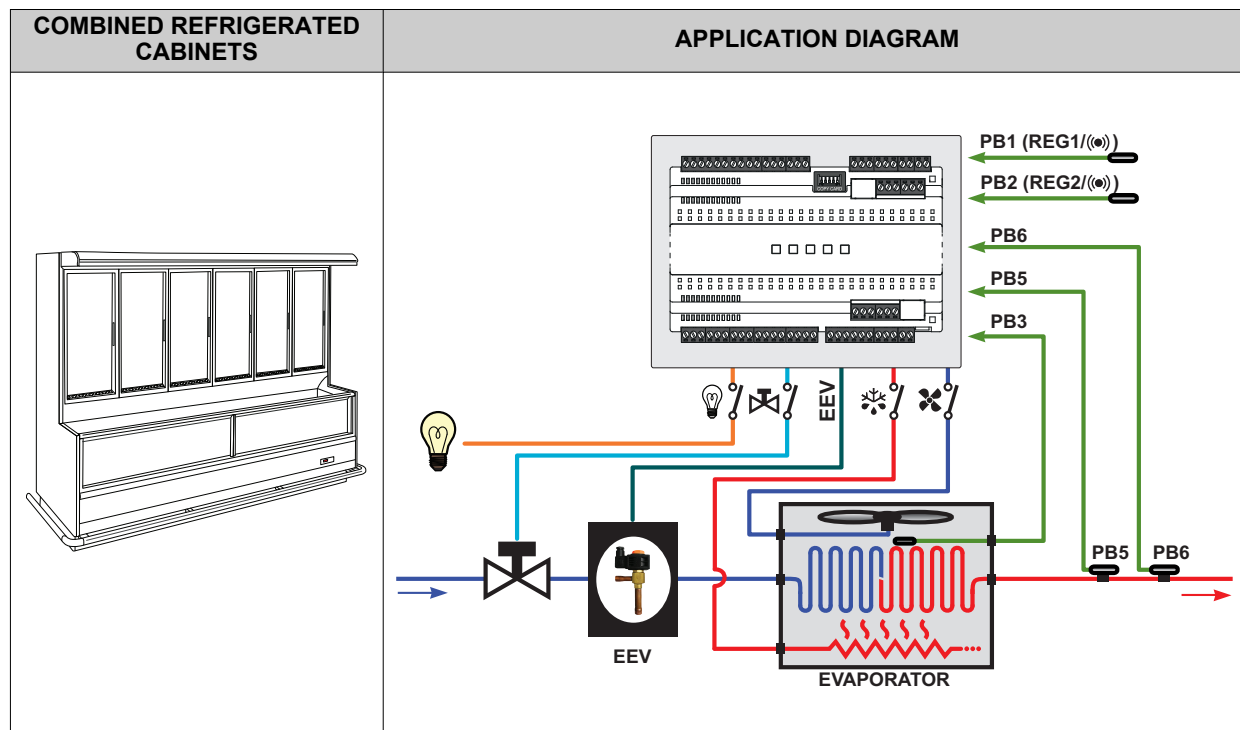
- OUT1 output (relay) = Compressor
- OUT2 output (relay) = Evaporator fans
- OUT3 output (relay) = Defrost
- OUT4 output (relay) = Light
- OUT5 output (relay) = Not set
- EEV output = EEV valve
- A OUT output = Not set
- OC output = Not set
- OUT4 output (KDX - relay) = Not set
- OUT5 output (KDX - relay) = Not set



## Application AP8

### Overview

The application is configured for LT “**COMBINED UPRIGHT REFRIGERATED CABINETS**” (-18°C / 0.4°F) for the storage of Frozen food. The set configuration is intended for:



**Legend:** REG1 = Regulator 1; EEV = Electronic expansion valve; Evaporator = Evaporator.

### Application details

#### Input configuration:

- Pb1 input = Regulation 1 / Alarm
- Pb2 input = Regulation 2 / Alarm
- Pb3 input = Defrost / Evaporator fans
- Pb4 input = Not set
- Pb5 input = EEV temperature sensor
- Pb6 input = EEV pressure transducer
- Pb7 input = Not set
- DI input = Not set
- Pb8 input (KDX) = Not set
- DI1 input (KDX) = Not set
- DI2 input (KDX) = Not set

#### Output configuration:

- OUT1 output (relay) = Compressor
- OUT2 output (relay) = Evaporator fans
- OUT3 output (relay) = Defrost
- OUT4 output (relay) = Light
- OUT5 output (relay) = Not set
- EEV output = EEV valve
- A OUT output = Not set
- OC output = Not set
- OUT4 output (KDX - relay) = Not set
- OUT5 output (KDX - relay) = Not set

---

# Mechanical installation

---

## Contents

This section includes the following topics:

|                                             |    |
|---------------------------------------------|----|
| Before starting .....                       | 31 |
| Power supply disconnection .....            | 31 |
| Considerations concerning programming ..... | 31 |
| Operating environment .....                 | 32 |
| Comments concerning installation .....      | 32 |
| Installation .....                          | 33 |

## Before starting

Read this manual carefully before installing the device and its accessories.

In particular, ensure conformity with all safety indications, electrical requirements and current legislation for the machine or the process used with this equipment.

The use and application of information contained herein requires experience in the design and programming of automated control systems. Only the machine user, integrator or manufacturer will be aware of all the conditions and factors affecting installation, configuration, operation and maintenance of the machine or process and can therefore identify the associated equipment and corresponding safety interlocks and systems that can be used appropriately and efficiently. When selecting automation and control equipment, other equipment and connected software for a particular application, all local, regional and national standards and/or legislation must be taken into account.

### **WARNING**

#### **REGULATORY INCOMPATIBILITY**

Make sure that all equipment used and systems designed comply with all applicable local, regional and national laws.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## Power supply disconnection

Assemble and install all optional extras and modules before installing the control system on an assembly rail, panel door or other assembly surface.

Before dismantling the equipment, remove the control systems from the assembly rail, plate or panel.

### **DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, FIRE OR ARC FLASH**

- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Before restoring the power supply, replace and secure all covers, hardware components and cables.
- For all the devices requiring it, make sure there is an effective ground connection.
- Use only the specified voltage when operating this device and any associated products.
- Use appropriate safety interlocks where personnel and/or equipment hazards exist.
- Install and operate this equipment in an enclosure appropriately rated for its intended environment and secured by a keyed or tooled locking mechanism.
- Do not use this equipment for safety-critical functions.
- Do not disassemble, repair, or modify this equipment.
- Do not connect the device directly to the line voltage, unless expressly indicated.

**Failure to follow these instructions will result in death or serious injury.**

## Considerations concerning programming

The devices described in this manual are designed and tested using Eliwell programming, configuration and maintenance software.

## Operating environment

This equipment is designed to operate in non-hazardous areas and where applications which generate - or could potentially generate - hazardous atmospheres have been isolated. Install this equipment only in areas and with applications known to be constantly free from hazardous atmospheres.

### DANGER

#### HAZARD OF EXPLOSION

- Install and use this equipment in non-hazardous locations only.
- Do not install or use this equipment in applications which could generate hazardous atmospheres, such as those using flammable refrigerants.

**Failure to follow these instructions will result in death or serious injury.**

For information regarding the use of control equipment in applications capable of generating hazardous materials, please contact the regulatory office or the local, regional or national certification authority.

### WARNING

#### UNINTENDED EQUIPMENT OPERATION

Install and use this equipment in compliance with the conditions described in the "Environmental and electrical characteristics" section of this document.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## Comments concerning installation

### Device

### WARNING

#### UNINTENDED EQUIPMENT OPERATION

- Use appropriate safety interlocks where personnel and/or equipment hazards exist.
- Install and operate this equipment in an enclosure appropriately rated for its intended environment and secured by a keyed or tooled locking mechanism.
- Power line and output circuits must be wired and fused in compliance with local and national regulatory requirements for the rated current and voltage of the particular equipment.
- Do not use this equipment for safety-critical functions.
- Do not disassemble, repair, or modify this equipment.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

For mechanical dimensions, refer to the **Mechanical Dimensions** section.

The Device is designed for DIN rail mounting on the "top hat" section.

### Terminals and echo viewer

The end application must prevent access to hazardous live or moving parts through the hole used to mount the terminal (**KDEPlus**, **KDWPlus**, **KDT** or **KDX**) or the echo viewer (**ECPlus**) as the terminal and viewer do not offer protection from this scenario.

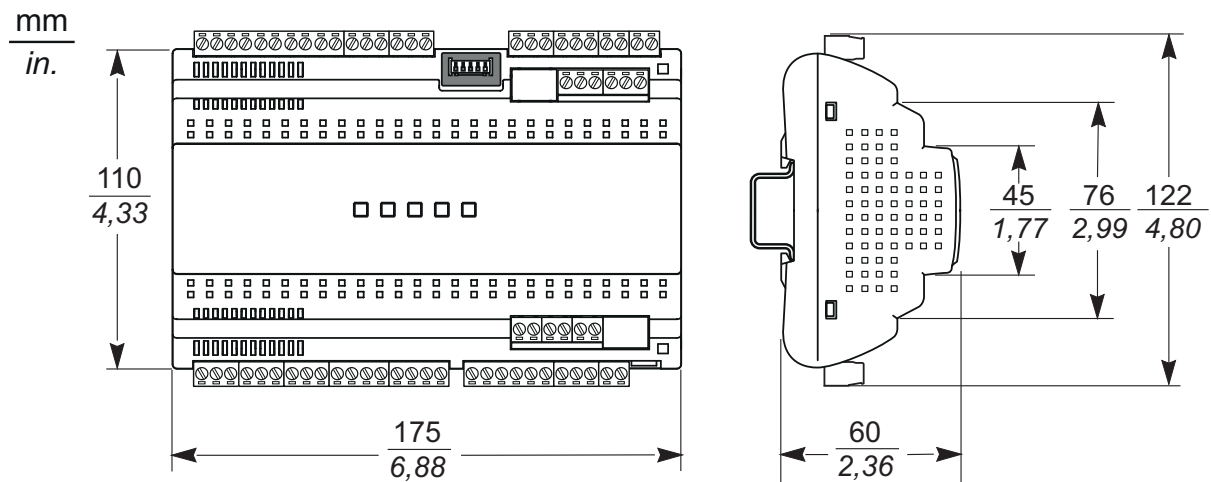
### DANGER

#### HAZARD OF ELECTRIC SHOCK OR ACCESS TO MOVING PARTS

Make sure the terminal or viewer is installed correctly.

**Failure to follow these instructions will result in death or serious injury.**

## Mechanical dimensions



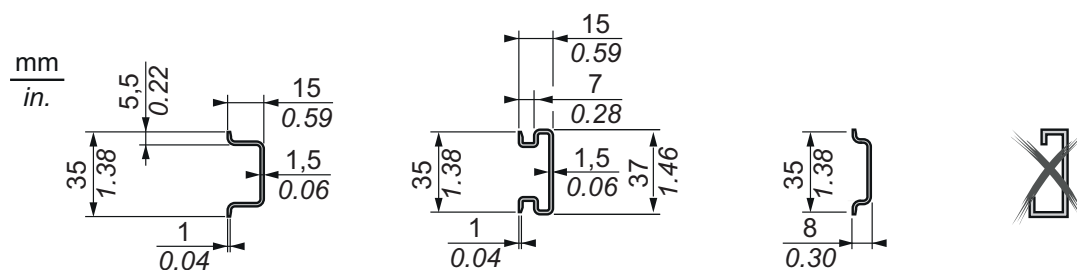
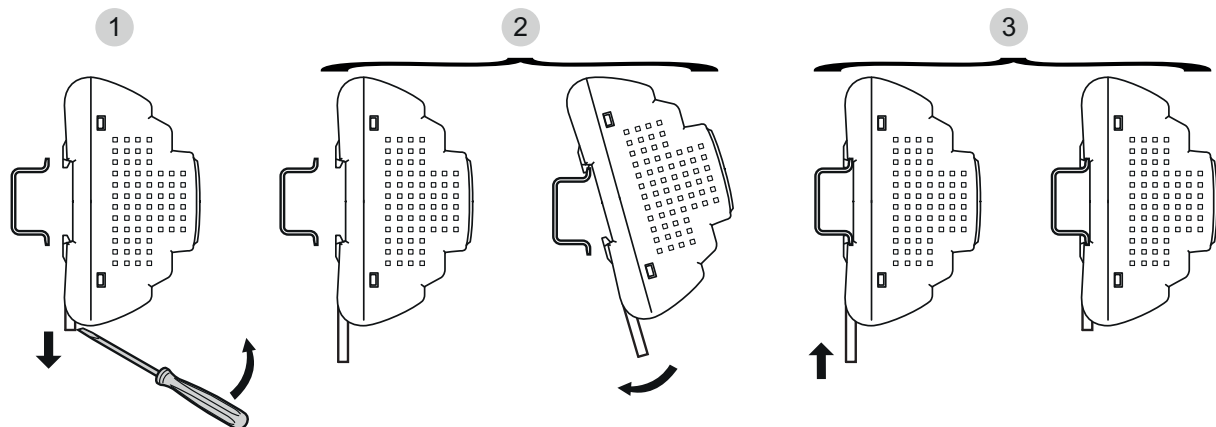
## Installation

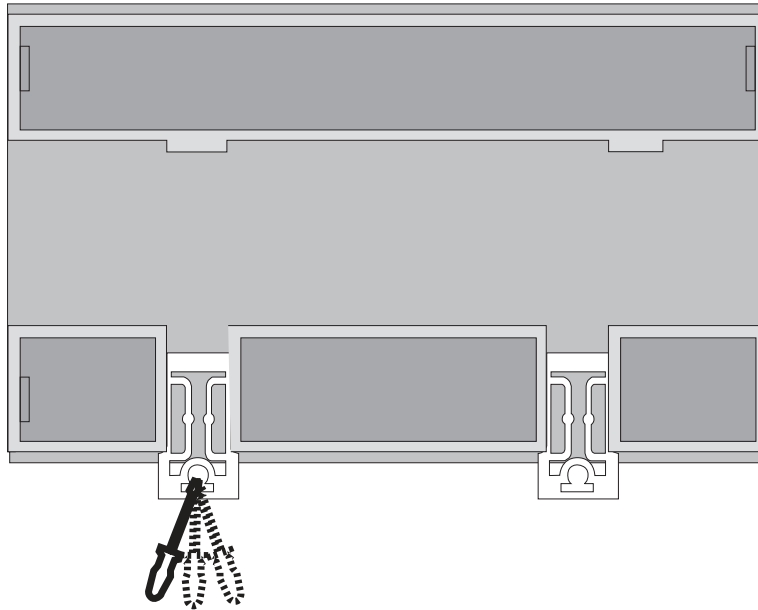
### How to install the device

For installation, proceed as follows:

1. Shift the lower locking clip on the bottom part outwards, as shown in the diagram below (use a screwdriver or similar tool as a lever). Make sure the upper locking clip located on the top part remains fully in place
2. Fit the device onto the DIN rail
3. Press the clips inwards until you hear them click into place

**Note:** Once the device has been assembled on the DIN rail, make sure the spring docking devices are facing downwards.

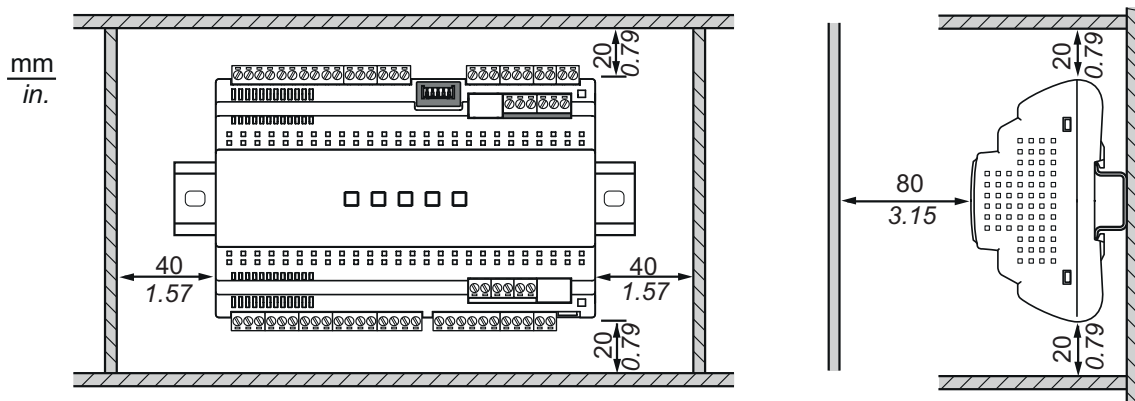




The device was designed as an IP20 product for installation in approved cabinets and/or in areas that prevent unauthorized access.

When installing the device, observe the following distances:

- The device and all sides of the cabinet (including the panel door)
- The device terminal blocks and the cable routing ducts. These distances reduce electromagnetic interference between the device and the cable routing ducts
- The device and other heat-generating devices installed in the same cabinet



## ⚠ WARNING

### UNINTENDED EQUIPMENT OPERATION

- Place the devices dissipating the most heat at the top of the cabinet and ensure suitable ventilation.
- Do not place the device near or above other devices that could cause superheat.
- Install the device in a point that guarantees the minimum distances from all structures and adjacent equipment as indicated in this document.
- Install all equipment in conformity with the technical specifications given in the corresponding documentation.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

---

# Electrical connections

---

## Contents

This section includes the following topics:

|                             |    |
|-----------------------------|----|
| Best wiring practices ..... | 36 |
| Wiring guidelines .....     | 37 |
| Serial connections .....    | 42 |
| Connectors .....            | 43 |
| Wiring diagrams .....       | 45 |

## Best wiring practices

The following information describes wiring guidelines and the practices to observe when using the device.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   <b>DANGER</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, FIRE OR ARC FLASH</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.</li> <li>• Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.</li> <li>• Before restoring the power supply, replace and secure all covers, hardware components and cables.</li> <li>• For all the devices requiring it, make sure there is an effective ground connection.</li> <li>• Use only the specified voltage when operating this device and any associated products.</li> <li>• Use appropriate safety interlocks where personnel and/or equipment hazards exist.</li> <li>• Install and operate this equipment in an enclosure appropriately rated for its intended environment and secured by a keyed or toolled locking mechanism.</li> <li>• Do not use this equipment for safety-critical functions.</li> <li>• Do not disassemble, repair, or modify this equipment.</li> <li>• Do not connect the device directly to the line voltage, unless expressly indicated.</li> </ul> |
| <b>Failure to follow these instructions will result in death or serious injury.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

The end application must prevent access to hazardous live or moving parts through the hole used to mount the terminal (**KDEPlus**, **KDWPlus**, **KDT** or **KDX**) or the viewer (**ECPlus**) as the terminal and viewer do not offer protection from this scenario.

|                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   <b>DANGER</b> |
| <b>HAZARD OF ELECTRIC SHOCK OR ACCESS TO MOVING PARTS</b>                                                                                                                         |
| Make sure the terminal or viewer is installed correctly.                                                                                                                          |
| <b>Failure to follow these instructions will result in death or serious injury.</b>                                                                                               |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>LOSS OF CONTROL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>• The system designer must consider the potential failure modes of the control circuit and, for some critical control functions, provide a means for reaching a safe condition during and after a circuit failure. Examples of critical control functions are the emergency stop and end of travel stop, power supply cut-off and restart.</li> <li>• Separate or redundant control circuits must be provided for critical control functions.</li> <li>• The system control circuits can include communication connections. Keep in mind the implications of transmission delays or sudden connection failures.</li> <li>• Comply with all standards regarding accident prevention and local applicable safety directives.</li> <li>• Every implementation of this equipment must be tested individually and completely in order to verify its proper operation before it is commissioned.</li> </ul> |
| <b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



## Wiring guidelines

When wiring the device, the following standards must be observed:

- The I/O and communication wiring must be kept separate from the electrical wiring. These 2 types of wiring must be kept in separate raceways.
- Make sure that the operating conditions and surrounding environment comply with the specification values.
- Use wires of the correct diameter and suited to the voltage and current requirements.
- Use copper conductors (obligatory).
- Use twisted-pair shielded wires for analog I/Os.
- Use twisted-pair shielded wires for networks and field buses.

Use correctly earthed shielded wires for all analog inputs or outputs and communication connections. If shielded wires cannot be used for these connections, the electromagnetic interference may deteriorate the signal. Deteriorated signals can result in the devices, modules or attached equipment operating incorrectly.

### **WARNING**

#### **UNINTENDED EQUIPMENT OPERATION**

- Use shielded wires for all analog I/O and communication signals.
- Ground the wire shields for all analog I/O and communication signals in a single point <sup>(1)</sup>.
- The signal cables (probes, digital inputs, communication, and relative power supplies) must be laid separately from the device power cables.
- Reduce the length of the wires and cables as much as possible and avoid winding them around electrically connected parts.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

<sup>(1)</sup> Grounding in several points is permitted if the connections are made to an equipotential ground surface that is sized to avoid damage to the cable shields in the event of a short circuit in the power supply.

**Note:** Lay the main wiring (power wires) separately from the secondary wiring (very low voltage wire coming from intermediate power sources). Where this is not possible, double insulation is required in the form of cable recesses or raceways.

## Rules for disconnectable terminal blocks



### LOOSE WIRING CAN RESULT IN ELECTRIC SHOCK AND/OR FIRE

- Tighten the connections in compliance with the technical specifications for torque values and make sure the wiring is correct.
- Do not insert more than one cable per terminal board connector unless you are using the ends of the cables (terminals).

**Failure to follow these instructions will result in death or serious injury.**

Use copper wires (obligatory).

The table below shows the type and size of permitted cables for disconnectable screw terminals and the corresponding torque values:

|                       |           |           |            |            |             |               |              |               |
|-----------------------|-----------|-----------|------------|------------|-------------|---------------|--------------|---------------|
|                       |           |           |            |            |             |               |              |               |
| <b>mm<sup>2</sup></b> | 0.2...2.5 | 0.2...2.5 | 0.25...2.5 | 0.25...2.5 | 2 x 0.2...1 | 2 x 0.2...1.5 | 2 x 0.25...1 | 2 x 0.5...1.5 |
| <b>AWG</b>            | 24...14   | 24...14   | 22...14    | 22...14    | 2 x 24...18 | 2 x 24...16   | 2 x 22...18  | 2 x 20...16   |

|                     |  |              |             |
|---------------------|--|--------------|-------------|
|                     |  | <b>N•m</b>   | 0.5...0.6   |
| Ø 3.5 mm (0.14 in.) |  | <b>lb-in</b> | 4.42...5.31 |



### HAZARD OF OVERHEATING AND/OR FIRE

- Power lines and output connections must be suitably wired and protected by means of fuses when required by national and local regulations.
- Use only the recommended wire cross-sections for the current capacity of the I/O channels and the electrical power.
- Connect the relay outputs, including the shared hub, using wires with a cross-section of at least 2.0 mm<sup>2</sup> (AWG 14), with a nominal temperature value of at least 80°C (176°F).

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

### Protecting the outputs from damage from inductive loads

If the device has relay outputs, these types of outputs can cope with up to 240 Vac.

Damage from inductive loads to these types of outputs can cause the contacts to weld and lead to the loss of control. Each inductive load must include a protective device such as a peak limiter or a snubber. These relays do not support capacitive loads.



**WARNING**

**RELAY OUTPUTS WELDED TO CLOSED POSITION**

- Use a device or an external protection circuit suitable for all the relay outputs connected to alternating current inductive loads.
- Do not connect the relay outputs to capacitive loads.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

Depending on the load a protection circuit may be required for device outputs and certain modules. Inductive load switching may create voltage impulses that damage, short-circuit or reduce the life of the output devices.



**CAUTION**

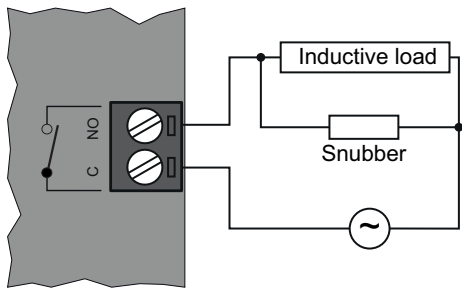
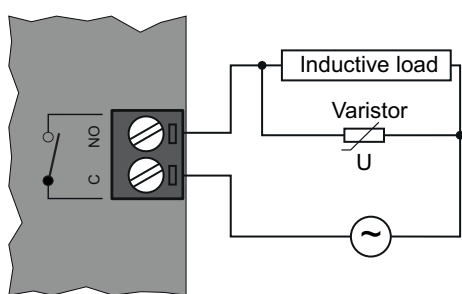
**DAMAGE TO OUTPUT CIRCUITS DUE TO INDUCTIVE LOADS**

Use an external protective device or circuit able to reduce the risks caused by voltage impulses in the switching of inductive loads.

**Failure to follow these instructions can result in injury or equipment damage.**

Choose a protection circuit from the following diagrams based on the electricity supply used. Connect the protection circuit outside the device or relay output module.

Two examples are given below:

| Protection circuit A                                                                                                                                                                                                                                                                                                                                                                                                | Protection circuit B                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>This protection circuit uses a snubber and can be used for alternating current load circuits. The snubber must be compatible with the type of load and the RMS voltage of the snubber must be over that of the load by +10% (e.g. with a load running at 250 Vac, the snubber should have a minimum voltage of 275 Vac).</p>  | <p>This protection circuit uses a varistor and can be used for alternating current load circuits. In applications in which the inductive load is frequently and/or rapidly switched on and off, verify that the maximum continuous energy (J) of the varistor is 20% or more higher than the peak load energy and that the clamping voltage of the varistor is not lower than 1.6 times the load voltage.</p>  |

**Note:** Place the protection devices as close as possible to the load.

## Specific considerations for handling

When handling the equipment, take care to avoid damage caused by electrostatic discharge. In particular, the unshielded connectors are extremely vulnerable to electrostatic discharge.

|  <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UNINTENDED EQUIPMENT OPERATION DUE TO ELECTROSTATIC DISCHARGE</b> <ul style="list-style-type: none"> <li>• Keep the equipment in the protective packaging until ready for installation.</li> <li>• The device must only be installed in type-approved cupboards and/or in points that prevent unauthorized access and provide protection from electrostatic discharge.</li> <li>• When handling sensitive equipment, use a grounded device protecting against electrostatic discharge.</li> <li>• Before handling the equipment, always discharge the static electricity from the body by touching an earthed surface or type-approved antistatic mat.</li> </ul> <b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b> |

Before use, make sure that the device is connected to a suitable external electricity supply (refer to section **Power supply** and **Auxiliary EEV power supply**).

## Handling the analog inputs-probes

The temperature (NTC, PTC, Pt1000) probes have no connection polarity and can be extended using a normal bipolar cable. Extension of the probes has a significant impact on the device in terms of electromagnetic compatibility EMC: pay great attention to the wiring.

The ratiometric transducers (0...5 V) and pressure transducers (4...20 mA), have a connection polarity.

|  <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UNINTENDED EQUIPMENT OPERATION</b> <ul style="list-style-type: none"> <li>• Make sure that the device is powered when power is supplied to other connected devices with an external power supply.</li> <li>• The signal cables (probes, digital inputs, communication, and relative power supplies) must be laid separately from the device power cables.</li> </ul> <b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b> |

| <b>NOTICE</b>                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>INOPERABLE DEVICE</b> <p>Before switching on the power supply, verify all the wiring connections.</p> <b>Failure to follow these instructions can result in equipment damage.</b> |

## Handling the electronic expansion valve

Before connecting the valve, configure the device carefully.

### WARNING

#### UNINTENDED EQUIPMENT OPERATION

- Make sure the correct valve model is selected.
- Before using the valve, verify the parameters and the data provided by the valve manufacturer.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

Always cut off the equipment electricity supply before carrying out any maintenance work on the electrical connections.

For correct connection, observe the following:

- Separate the cables for the probes and the digital inputs from inductive loads and dangerous voltage connections to avoid electromagnetic interference. Avoid positioning probe cables near other electrical equipment (switches, contactors, etc.).
- Reduce the length of the connections as much as possible and avoid coiling them around electrically connected parts.

## Serial connections

The device has the following serial communication ports:

- 1 opto-isolated RS485 serial port for supervision
- 1 serial port for local Link<sup>2</sup> network connection
- 1 serial port for terminal (**KDEPlus**, **KDWPlus**, **KDT**, **KDX**) or **ECPlus** viewer connection

Verify the wiring when connecting the serial line. A connection error may cause incorrect operation or make the equipment unusable.

### RS485 serial

- Use a special shielded "twisted-pair" cable for RS485 (e.g.: BELDEN cable, model 9842). When laying cables, follow the indications in standard EN 50174 for I.T. wiring. Take extra care to separate the data transmission circuits from the power lines.
- The length of the RS485 network, which can be connected directly to the device, is 1200 m (in accordance with ANSI TIA/EIA RS-485-A and ISO 8482:1987 (E)).
- Modbus protocol allows management of up to 247 devices.
- Single terminal block with 3 wires: use all 3 wires ("+" and "-" for the signal; "G" for 0 V signal grounding).
- The network should have BUS DAISY CHAIN topology and termination resistance of 120  $\Omega$  - 1/4 W between terminals "+" and "-" at each of the two ends of the BUS or enable those already provided on the controllers.

Do not communicate over the RS485 serial port if the UNICARD/DMI/Multi Function Key is connected and vice-versa.

### NOTICE

#### INOPERABLE DEVICE

Only connect the RS485 serial port or the TTL (for UNICARD/DMI/Multi Function Key).

**Failure to follow these instructions can result in equipment damage.**

**Note:** When the DMI is connected to the device, valve closure will be forced.

### Link<sup>2</sup> connection serial port

Use a special shielded "twisted-pair" cable for RS485 (e.g.: BELDEN cable, model 9842). When laying cables, follow the indications in standard EN 50174 for Information Technology wiring.

**NOTE:** A maximum of 8 devices can be connected to a Link<sup>2</sup> network.

### Terminal or echo viewer connection serial port

Use the cable supplied with the terminal (**KDEPlus**, **KDWPlus**, **KDT**, **KDX**) or viewer (**ECPlus**) for connection.

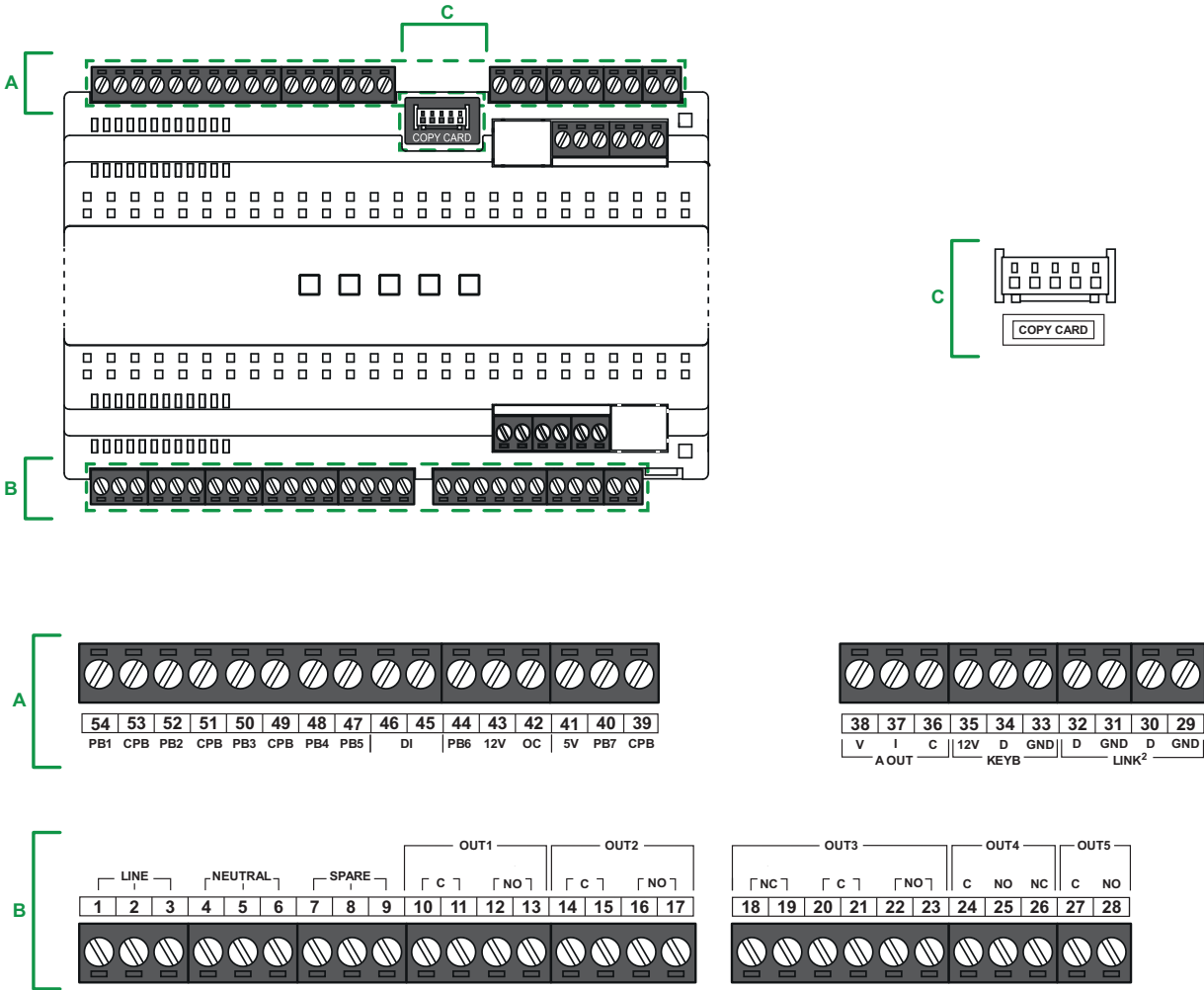
Where required, take extra care when cutting the 2 connectors for the cable supplied and when arranging the wires in sequence for subsequent connection to the device terminals.

Please refer to **Connections between the terminal and the viewer**.

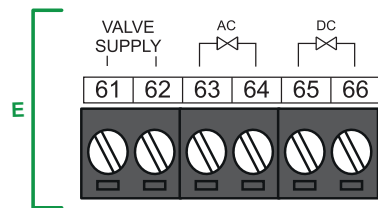
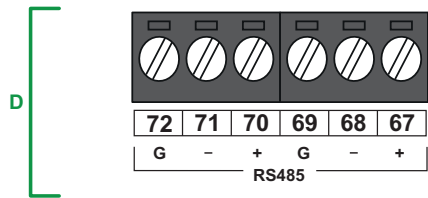
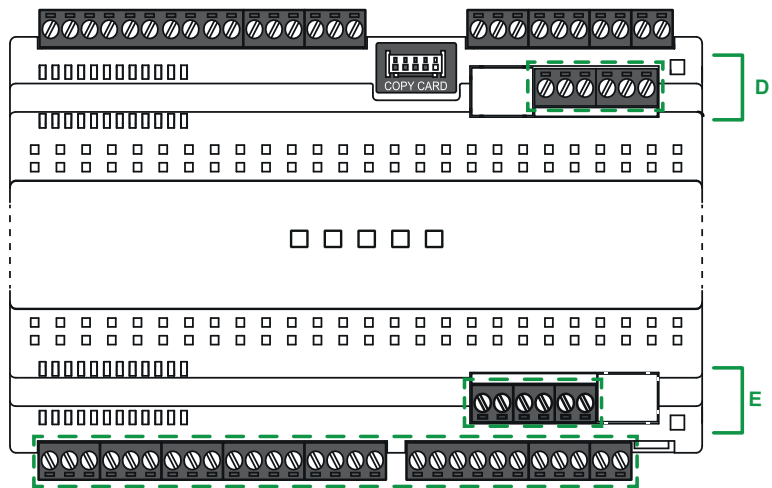
# Connectors

The device has a “Base board” and a “Top board”.  
The I/O (Input/Output) and port labels are marked on the device nut.

## Base board connectors



Top board connectors





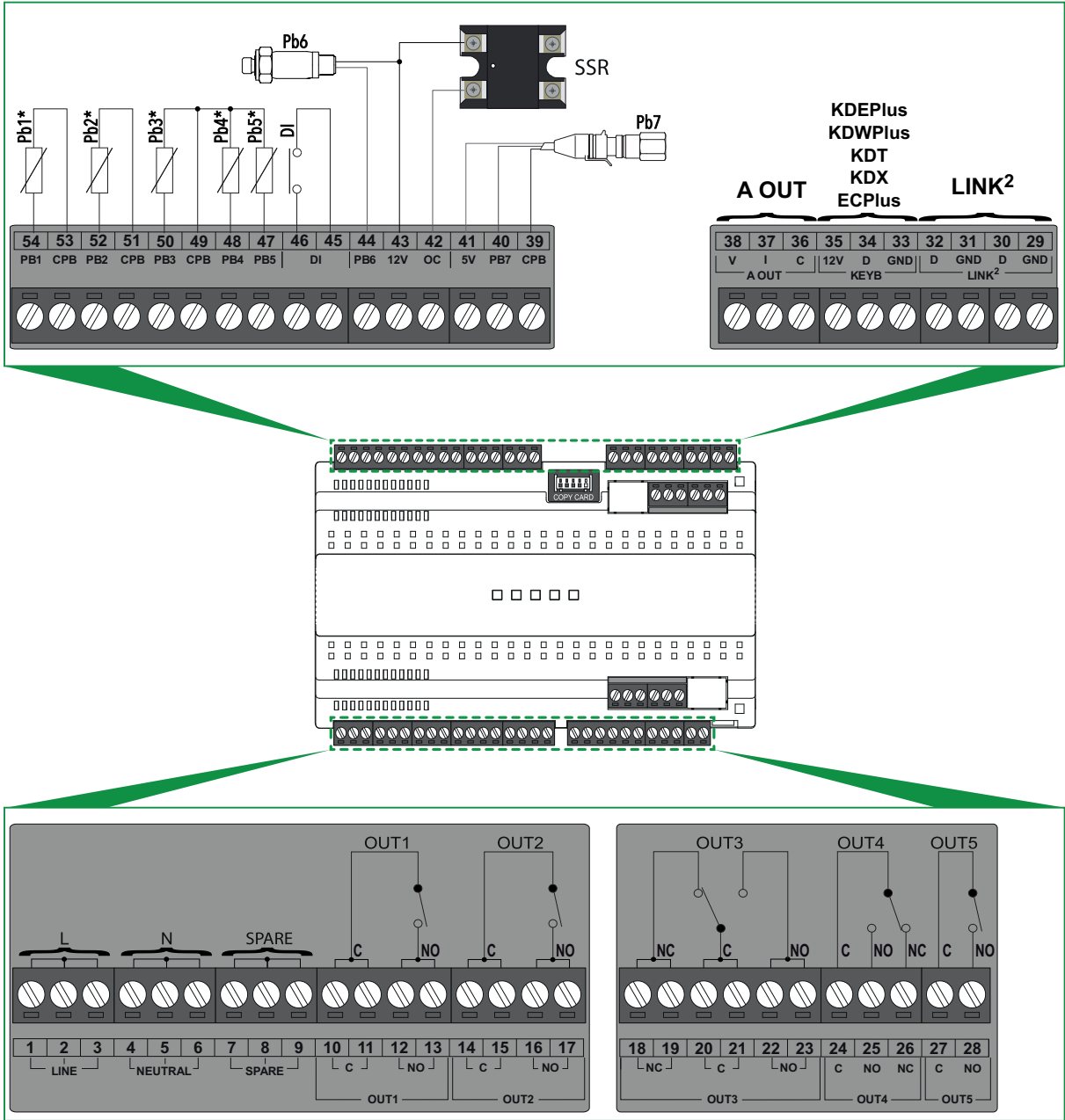
# Wiring diagrams

Incorrect wiring causes irreversible damage to the device.

**NOTICE**

**INOPERABLE DEVICE**  
Before switching on the power supply, verify all the wiring connections.  
**Failure to follow these instructions can result in equipment damage.**

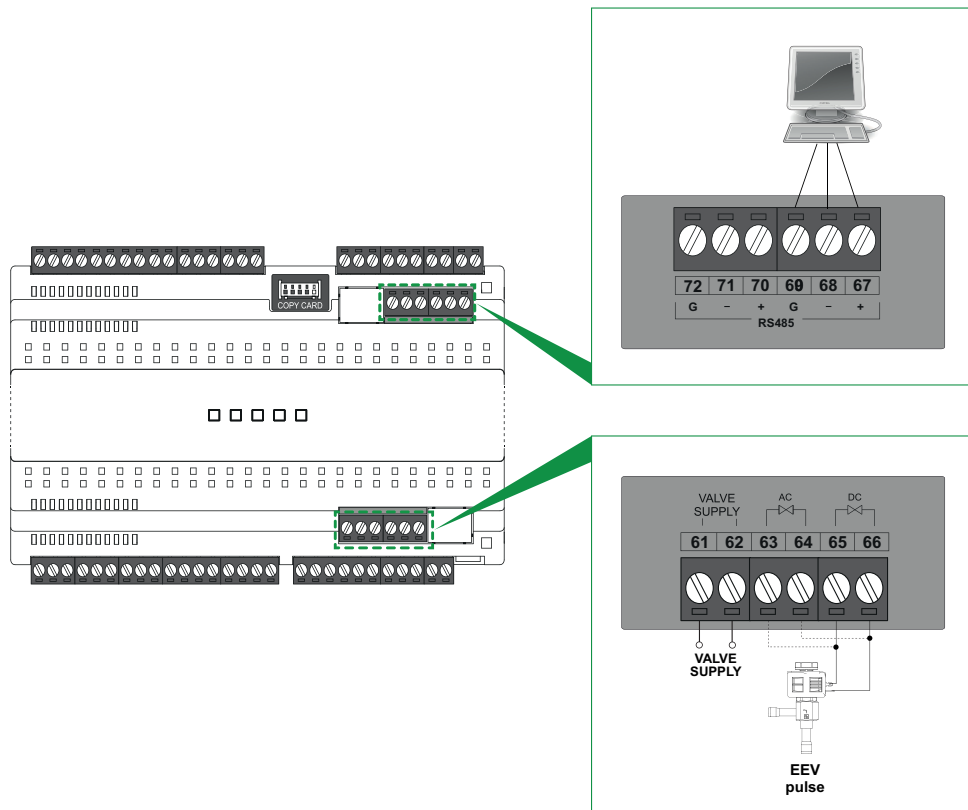
## Base board wiring diagrams



| Label                        | Label                |      | Terminal | Description                                                 |
|------------------------------|----------------------|------|----------|-------------------------------------------------------------|
| Power supply                 | LINE                 |      | 1-2-3    | Power line                                                  |
|                              | NEUTRAL              |      | 4-5-6    | Power supply neutral                                        |
|                              | SPARE                |      | 7-8-9    | Support terminals not connected internally                  |
| Digital outputs              | OUT1                 | C    | 10-11    | OUT1 relay Common Terminal                                  |
|                              |                      | NO   | 12-13    | OUT1 relay Normally Open                                    |
|                              | OUT2                 | C    | 14-15    | OUT2 relay Common Terminal                                  |
|                              |                      | NO   | 16-17    | OUT2 relay Normally Open                                    |
|                              | OUT3                 | NC   | 18-19    | OUT3 relay Normally Closed                                  |
|                              |                      | C    | 20-21    | OUT3 relay Common Terminal                                  |
|                              |                      | NO   | 22-23    | OUT3 relay Normally Open                                    |
|                              | OUT4                 | C    | 24       | OUT4 relay Common Terminal                                  |
|                              |                      | NO   | 25       | OUT4 relay Normally Open                                    |
|                              |                      | NC   | 26       | OUT4 relay Normally Closed                                  |
|                              | OUT5                 | C    | 27       | OUT5 relay Common Terminal                                  |
|                              |                      | NO   | 28       | OUT5 relay Normally Open                                    |
| Link <sup>2</sup>            | LINK <sup>2</sup> -1 | GND  | 31       | 0 V signal ground connection 1 - local network              |
|                              |                      | D    | 30       | Signal connection 1 - local network                         |
|                              | LINK <sup>2</sup> -2 | GND  | 31       | 0 V signal ground connection 2 - local network              |
|                              |                      | D    | 32       | Signal connection 2 - local network                         |
| Terminal Connection          | KEYB                 | GND  | 33       | 0 V signal ground                                           |
|                              |                      | D    | 34       | External terminal data terminal                             |
|                              |                      | 12 V | 35       | +12 Vdc power supply output, external terminal power supply |
| DAC output                   | A OUT                | c    | 36       | Common Terminal                                             |
|                              |                      | I    | 37       | Analog output under current (4...20 mA)                     |
|                              |                      | V    | 38       | Analog output under voltage (0...10 V)                      |
| Copy Card                    | TTL                  |      | ---      | UNICARD / DMI / Multi Function Key TTL connection           |
| PB6 - Ratiometric transducer | CPB                  |      | 39       | 0 V signal ground                                           |
|                              | PB7                  |      | 40       | Ratiometric transducer connection (probe Pb7)               |
|                              | 5 V                  |      | 41       | +5 Vdc power supply output for ratiometric transducer       |
| Open Collector Output        | OC                   |      | 42       | Open Collector output (see parameters in FrH folder)        |
|                              | 12 V                 |      | 43       | +12 Vdc power supply output for Open Collector output       |
| PB6 - Pressure transducer    | 12 V                 |      | 43       | +12 Vdc power supply output for pressure transducer         |
|                              | PB6                  |      | 44       | Pressure transducer connection (probe Pb6)                  |
| Digital input                | DI                   |      | 45-46    | Digital input                                               |
| Analog inputs                | PB5                  |      | 47       | Analog input 5 (probe Pb5)                                  |
|                              | PB4                  |      | 48       | Analog input 4 (probe Pb4)                                  |
|                              | CPB                  |      | 49       | 0 V signal ground analog inputs Pb3-Pb4-Pb5                 |
|                              | PB3                  |      | 50       | Analog input 3 (probe Pb3)                                  |
|                              | CPB                  |      | 51       | 0 V signal ground analog input 2                            |
|                              | PB2                  |      | 52       | Analog input 2 (probe Pb2)                                  |
|                              | CPB                  |      | 53       | 0 V signal ground analog input 1                            |
|                              | PB1                  |      | 54       | Analog input 1 (probe Pb1)                                  |

**Note:** For further information, refer to the **Technical Data** chapter.

## Top board wiring diagrams



| Label                    | Label        | Terminal | Description                                                                                                           |
|--------------------------|--------------|----------|-----------------------------------------------------------------------------------------------------------------------|
| Pulse valve power supply | Valve Supply | 61       | Auxiliary power supply input for pulse electronic expansion valve. Refer to <b>Auxiliary pulse EEV power supply</b> . |
|                          |              | 62       |                                                                                                                       |
| Pulse valve output       | AC           | 63       | AC Valve connection terminals                                                                                         |
|                          |              | 64       |                                                                                                                       |
|                          | DC           | 65       | DC Valve connection terminals                                                                                         |
|                          |              | 66       |                                                                                                                       |
| RS485-1                  | +            | 67       | "+" signal for RS485-1 serial port                                                                                    |
|                          | -            | 68       | "-" signal for RS485-1 serial port                                                                                    |
|                          | G            | 69       | 0 V signal ground                                                                                                     |
| RS485-2                  | +            | 70       | "+" signal for RS485-2 serial port                                                                                    |
|                          | -            | 71       | "-" signal for RS485-2 serial port                                                                                    |
|                          | G            | 72       | 0 V signal ground                                                                                                     |

**Note:** For further information, refer to the **Technical Data** chapter.

## Connecting Pulse EEV valves

Take extra care during the valve wiring stages. Choose the most suitable valve coil carefully in accordance with the voltage used.

### ⚠ WARNING

#### UNINTENDED EQUIPMENT OPERATION

Verify the information concerning valve parameters as declared by the manufacturer before using the valve in a generic valve configuration.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

Schneider Electric and Eliwell are not responsible for data provided by the valve manufacturer, including technical changes or updates. Please refer to the product manual and the valve manual to verify its suitability and correct configuration.

### NOTICE

#### INOPERABLE DEVICE

- Verify all wiring before engaging the electricity supply.
- Verify the rating data of the valve before connecting it.
- Make sure the valve coil is connected to the correct terminals.
- Make sure terminals 61-62 are connected to an AC power source with voltage of an RMS value suited to the type of valve used.

**Failure to follow these instructions can result in equipment damage.**

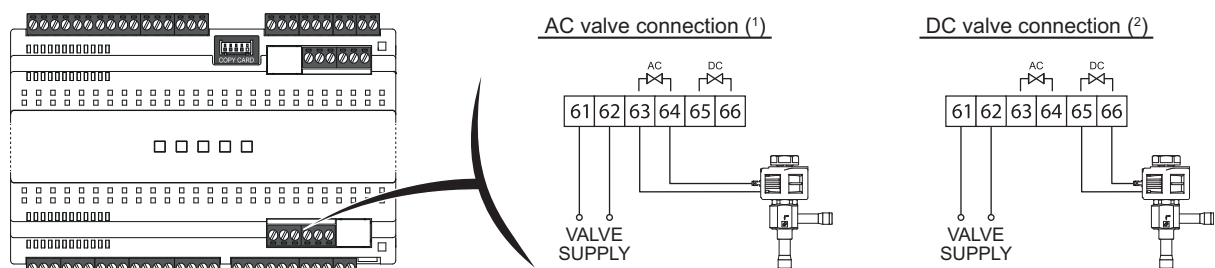
**Note:** The valve coil should be connected:

- to terminals 63-64 for valves in alternating current (AC)
- to terminals 65-66 for valves in direct current (DC).

**Note:** Connect terminals 61-62 to an AC power source with voltage of an RMS value:

- equal to the RMS value required by the valve coil if connected to an AC valve.
- equal to the DC value required by the valve coil if connected to a DC valve. For example, to control a valve with DC coil at 240 Vdc, you need to apply a voltage of 240 Vac RMS.

The wiring diagram for Pulse electronic expansion valves is as follows:



(1) = AC valve connection; (2) = DC valve connection

**NOTE:** The wiring diagrams described above also apply to the valves listed below. Manufacturer specifications are subject to change without notice.

| Manufacturer | Valve               | Reference document            |
|--------------|---------------------|-------------------------------|
| DANFOSS      | AKV10, AKV15, AKV20 | DKRCC.PD.VA1.A7.02_AKV_sw.pdf |
|              | AKVA (NH3)          | DKRCC.PD.VA1.B5.02_AKVA.pdf   |
| ALCO         | EX2                 | EN_EX2__35016.pdf             |

---

# Technical characteristics

---

## Contents

This section includes the following topics:

|                                                    |    |
|----------------------------------------------------|----|
| Introduction .....                                 | 50 |
| Environmental and electrical characteristics ..... | 50 |
| Input characteristics .....                        | 51 |
| Output characteristics .....                       | 52 |
| Serial ports .....                                 | 52 |
| Power supply .....                                 | 53 |
| Auxiliary EEV power supply .....                   | 53 |

## Introduction

All components in the device system meet the European Community (CE) requirements for open devices.

They must be installed in a cabinet or other designated place to suit the environmental conditions and minimize the risk of involuntary contact with high voltages. Use metal casings to improve immunity to electromagnetic fields.

The application of incorrect current or voltage values at the analog inputs and outputs could damage the electronic circuits. Moreover, connection of a device current output to an analog input configured for voltage and vice-versa will also damage the electronic circuits.

### NOTICE

#### INOPERABLE DEVICE

- Do not apply voltages over 11 V to the analog inputs of the device when the analog input is configured as a 0...5 V or 0...10 V input.
- Do not apply currents over 30 mA to the analog inputs of the device when the analog input is configured as an 0...20 mA or 4...20 mA input.
- Do not confuse the applied signal with the analog input configuration.

**Failure to follow these instructions can result in equipment damage.**

## Environmental and electrical characteristics

| Characteristics                                            | Description                                                                     |
|------------------------------------------------------------|---------------------------------------------------------------------------------|
| The product conforms to the following harmonized Standards | EN 60730-1 and EN 60730-2-9                                                     |
| Construction of control                                    | Electronic automatic Incorporated Control                                       |
| Purpose of control                                         | Operating control (not safety related)                                          |
| Type of action                                             | 1.C                                                                             |
| Pollution degree                                           | 2                                                                               |
| Overvoltage category                                       | II                                                                              |
| Rated impulse voltage                                      | 2500 V                                                                          |
| Power supply                                               | SMPS 100...240 Vac ( $\pm 10\%$ ), 50/60 Hz                                     |
| Auxiliary EEV power supply:                                | 100...240 Vac ( $\pm 10\%$ ) 50/60 Hz                                           |
| Power draw (maximum)                                       | 7.5 W                                                                           |
| Ambient operating conditions                               | Temperature: -5...55°C (23...131°F)<br>Humidity: 10...90% RH (non-condensing)   |
| Transportation and storage conditions                      | Temperature: -30...85°C (-22...185°F)<br>Humidity: 10...90% RH (non-condensing) |
| Software class                                             | A                                                                               |
| Fuse                                                       | Certified according to IEC 60127-1;<br>model: 5x20; value: 1 A fast - 250 V     |
| Loads                                                      | See "Output characteristics"                                                    |

If the nominal values within the specified temperature interval are not maintained, the device may operate incorrectly or become damaged and stop working altogether.

### WARNING

#### UNINTENDED EQUIPMENT OPERATION

Do not exceed any of the rated values specified in the ambient and electrical characteristics table.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## Input characteristics

The characteristics relating to the device inputs are as follows:

| Characteristics          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Display ranges:          | -99.9...99.9 or -999...999                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Measuring range:         | <ul style="list-style-type: none"> <li>• <b>NTC</b>: -50...110°C (-58...230°F)</li> <li>• <b>PTC</b>: -55...150°C (-67...302°F)</li> <li>• <b>Pt1000</b>: -60...150°C (-76...302°F)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Display:                 | 3 digits + sign                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Accuracy:                | <ul style="list-style-type: none"> <li>• <math>\pm 1.0^{\circ}\text{C}/^{\circ}\text{F}</math> for temperatures under <math>-30.0^{\circ}\text{C}</math> (<math>-22.0^{\circ}\text{F}</math>)</li> <li>• <math>\pm 0.5^{\circ}\text{C}/^{\circ}\text{F}</math> for temperatures between <math>-30.0^{\circ}\text{C}</math>...<math>25.0^{\circ}\text{C}</math> (<math>-22.0^{\circ}\text{C}</math>...<math>77.0^{\circ}\text{F}</math>)</li> <li>• <math>\pm 1.0^{\circ}\text{C}/^{\circ}\text{F}</math> for temperatures over <math>25^{\circ}\text{C}</math> (<math>77^{\circ}\text{F}</math>)</li> </ul>                                                                                                                                                          |
| Resolution:              | 1 or $0.1^{\circ}\text{C}/^{\circ}\text{F}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Analog / Digital inputs: | <ul style="list-style-type: none"> <li>• <b>Pb1</b>: configurable NTC / PTC / Pt1000 / DI input</li> <li>• <b>Pb2</b>: configurable NTC / PTC / Pt1000 / DI input</li> <li>• <b>Pb3</b>: configurable NTC / PTC / Pt1000 / DI input</li> <li>• <b>Pb4</b>: configurable NTC / PTC / Pt1000 / DI input</li> <li>• <b>Pb5</b>: configurable NTC / PTC / Pt1000 / DI input</li> <li>• <b>Pb6</b>: configurable 4...20 mA / DI input</li> <li>• <b>Pb7</b>: configurable ratiometric / DI input</li> <li>• <b>DI</b>: multifunctional voltage free digital input</li> <li>• <b>Pb8</b> (KDX): 4...20 mA input</li> <li>• <b>DI1</b> (KDX): multifunctional voltage free digital input</li> <li>• <b>DI2</b> (KDX): multifunctional voltage free digital input</li> </ul> |

Analog inputs configured as digital inputs are not isolated.

### NOTICE

#### INCORRECT INPUT WIRING ON NON-ISOLATED INPUTS

Only use voltage-free inputs on analog inputs configured as digital inputs.

**Failure to follow these instructions can result in equipment damage.**

**Note:** the technical characteristics provided in this document concerning measurement (range, accuracy, resolution, etc.) refer to the instrument itself only and not to any accessories supplied, such as the probes.

## Output characteristics

The characteristics relating to the device outputs are as follows:

| Characteristics             | Description                                                    | EU (230 Vac maximum)            | USA (230 Vac maximum)                                |
|-----------------------------|----------------------------------------------------------------|---------------------------------|------------------------------------------------------|
| Digital outputs:            | <b>OUT1</b> (SPST)                                             | NO 12(5) A                      | NO: 12A resistive, 5FLA 30LRA                        |
|                             | <b>OUT2</b> (SPST)                                             | NO 12(5) A                      | NO: 12A resistive, 5FLA 30LRA                        |
|                             | <b>OUT3</b> (SPDT)                                             | NO 12(5) A<br>NC 12 A resistive | NO: 12A resistive, 5FLA 30LRA<br>NC: 12A resistive   |
|                             | <b>OUT4</b> (SPDT)                                             | NO 8(4) A - NC 6(3) A           | NO: 8A resistive, 4.9FLA 29.4LRA<br>NC: 6A resistive |
|                             | <b>OUT5</b> (SPST)                                             | NO 8(4) A                       | NO: 8A resistive, 4.9FLA 29.4LRA                     |
|                             | <b>OUT4 KDX</b> (SPST)                                         | NO 8(5) A                       | NO: 8A resistive, 4.9FLA 29.4LRA                     |
|                             | <b>OUT5 KDX</b> (SPDT)                                         | NO 8(4) A - NC 6(3) A           | NO: 8A resistive, 4.9FLA 29.4LRA<br>NC: 6A resistive |
| OC (Open Collector) Output: | <b>OC:</b> 1 multifunction output: 12 Vdc - 20 mA              |                                 |                                                      |
| DAC output:                 | <b>A OUT:</b> 1 multifunction output: 0...10 Vdc / 4...20 mA   |                                 |                                                      |
| Pulse EEV driver output:    | <b>AC/DC:</b> 1 SSR relay 100...240 Vac/dc; maximum I = 300 mA |                                 |                                                      |

## Serial ports

The mechanical characteristics of the device inputs are as follows:

| Serial            | Description                           | Notes                                                                                                                                                                                                                                  |
|-------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TTL               | 1 TTL serial port                     | Connection between the device and accessories for quick programming UNICARD, Multi Function Key (MFK) and Device Manager (via DMI)                                                                                                     |
| RS485             | 1 split RS485 serial port             | If the device is connected to the RS485 communication line, apply a 120 $\Omega$ termination resistor between line "+" and line "-" of the RS485                                                                                       |
| LINK <sup>2</sup> | 1 split Link <sup>2</sup> serial port | Connection of several controllers (up to 8) forming a local network                                                                                                                                                                    |
| KEYB              | 1 serial port per terminal            | <ul style="list-style-type: none"> <li>Connection between the device and the external terminal <b>KDEPlus</b>, <b>KDWPlus</b>, <b>KDT</b> or <b>KDX</b></li> <li>Connection between the device and the viewer <b>ECPlus</b></li> </ul> |

For further information, please refer to "Serial connections" on page 29.

Take extreme care with the connection of serial lines. Incorrect wiring could prevent the device from working.

Do not communicate over the RS485 serial port if the UNICARD / DMI / MFK is connected and vice-versa.

### NOTICE

#### INOPERABLE DEVICE

Only connect the RS485 serial port or the TTL (for UNICARD/DMI/Multi Function Key).

**Failure to follow these instructions can result in equipment damage.**



## Power supply

The device can be powered with a voltage of 100...240 Vac ( $\pm 10\%$ ) 50/60 Hz.

Depending on the requirements of individual units and/or the country of installation, if the country's mains voltage is within the operating range, the device can be connected directly to the mains power supply.

## Auxiliary EEV power supply

Choose the most suitable valve coil carefully in accordance with the voltage used.

Schneider Electric and Eliwell are not responsible for data provided by the valve manufacturer, including technical changes or updates. Please refer to the product manual and the valve manual to verify its suitability and correct configuration.

### NOTICE

#### INOPERABLE DEVICE

- Verify all wiring before engaging the electricity supply.
- Verify the rating data of the valve before connecting it.
- Make sure the valve coil is connected to the correct terminals.
- Make sure terminals 61-62 are connected to an AC power source with voltage of an RMS value suited to the type of valve used.

**Failure to follow these instructions can result in equipment damage.**

**Note:** The valve coil should be connected:

- to terminals 63-64 for valves in alternating current (AC)
- to terminals 65-66 for valves in direct current (DC).

**Note:** Connect terminals 61-62 to an AC power source with voltage of an RMS value:

- equal to the RMS value required by the valve coil if connected to an AC valve.
- equal to the DC value required by the valve coil if connected to a DC valve. For example, to control a valve with DC coil at 240 Vdc, you need to apply a voltage of 240 Vac RMS.

---

# User interface and operation

---

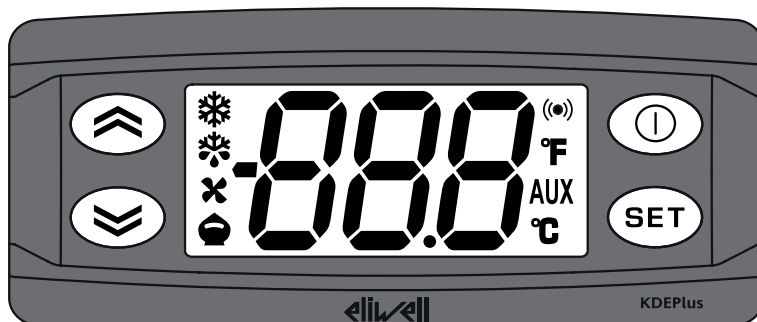
## Contents

This section includes the following topics:

- KDEPlus Terminal .....55
- KDWPlus Terminal .....56
- KDT Terminal (Vertical and Horizontal) .....58
- KDX Terminal .....60
- Device connection with terminal and/or viewer .....62
- Using the device .....64
- "Machine Status" Menu .....67
- `Programming" menu .....68
- Setting and calibrating the probes .....69
- Setting the displayed values .....70
- Connection with Televis protocol .....72

## KDEPlus Terminal

### Interface



### Keys

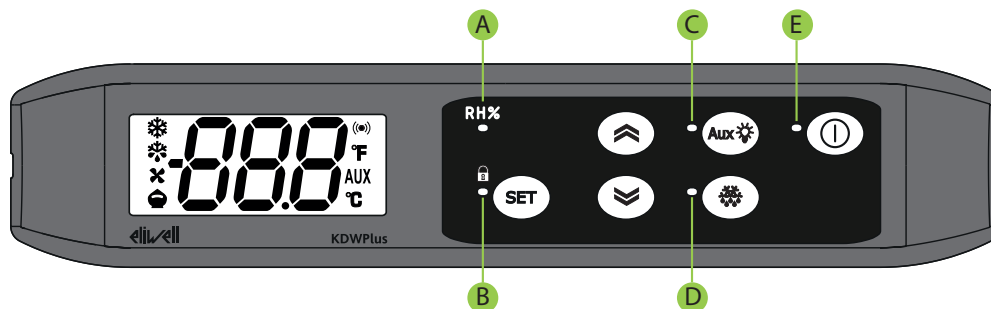
| Key | press and release                                                                                                                                 | press for at least 5 seconds                                                                                                                                                                |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <ul style="list-style-type: none"> <li>Scroll through the menu options</li> <li>Increase the values</li> </ul>                                    | From outside the menus only. Can be configured by the user (parameter <b>H31</b> ). Default: Manual defrost ( <b>H31</b> = 1).                                                              |
|     | <ul style="list-style-type: none"> <li>Scroll through the menu options</li> <li>Decrease the values</li> </ul>                                    | From outside the menus only. Can be configured by the user (parameter <b>H32</b> ). Default: not configured ( <b>H32</b> =0).                                                               |
|     | <ul style="list-style-type: none"> <li>Go back up one level in the menu</li> <li>Confirm the parameter value</li> </ul>                           | From outside the menus only. Can be configured by the user (parameter <b>H33</b> ). Default: Stand-by ( <b>H33</b> =6).                                                                     |
|     | <ul style="list-style-type: none"> <li>Access the "Machine Status" menu</li> <li>Display alarms (if present)</li> <li>Confirm commands</li> </ul> | <ul style="list-style-type: none"> <li>Access the "Programming" menu</li> <li>When switching on, access selection mode for the application <b>AP1</b>...<b>AP8</b> to be loaded.</li> </ul> |
| +   | Activate remote display function (terminal shared on LINK <sup>2</sup> )                                                                          |                                                                                                                                                                                             |

### Icons

| Icon | Function        | Description                                                                                                                                                            |
|------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | Compressor      | On steadily: compressor active<br>Flashing: delay, protection or activation inhibited<br>Off: compressor off                                                           |
|      | Defrost         | On steadily: defrost active<br>Flashing: defrost activated manually or via digital input<br>Off: defrost inactive                                                      |
|      | Evaporator fans | On steadily: fans active<br>Off: fans off                                                                                                                              |
|      | Energy saving   | On steadily: Energy saving active<br>Flashing: reduced set active<br>Off: Energy Saving not active                                                                     |
|      | Alarm           | On steadily: alarm present<br>Flashing: alarm silenced<br>Off: No alarm active                                                                                         |
|      | °F              | On steadily: setting in °F ( <b>dro</b> (1) = F)<br>Flashing: terminal shared on Link <sup>2</sup><br>Off: light off                                                   |
|      | AUX             | On steadily: AUX output active and/or light on<br>Flashing: Deep cooling active<br>Off: AUX output off                                                                 |
|      | °C              | On steadily: setting in °C ( <b>dro</b> (0) = C)<br>Flashing: terminal shared on Link <sup>2</sup><br>Off: a value not relating to temperature or a label is displayed |

## KDWPlus Terminal

### Interface



### Keys

| Key | press and release                                                                                                                                 | press for at least 5 seconds                                                                                                                                                        |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <ul style="list-style-type: none"> <li>Scroll through the menu options</li> <li>Increase the values</li> </ul>                                    | From outside the menus only. Can be configured by the user (parameter <b>H31</b> ). Default: Manual defrost ( <b>H31</b> = 1). Change to <b>H31</b> =0.                             |
|     | <ul style="list-style-type: none"> <li>Scroll through the menu options</li> <li>Decrease the values</li> </ul>                                    | From outside the menus only. Can be configured by the user (parameter <b>H32</b> ). Default: Not configured ( <b>H32</b> = 0).                                                      |
|     | <ul style="list-style-type: none"> <li>Go back up one level in the menu</li> <li>Confirm the parameter value</li> </ul>                           | From outside the menus only. Can be configured by the user (parameter <b>H33</b> ). Default: Stand-by ( <b>H33</b> =6).                                                             |
|     | <ul style="list-style-type: none"> <li>Access the "Machine Status" menu</li> <li>Display alarms (if present)</li> <li>Confirm commands</li> </ul> | <ul style="list-style-type: none"> <li>Access the "Programming" menu</li> <li>When switching on, access selection mode for the application <b>AP1...AP8</b> to be loaded</li> </ul> |
|     | Activate/deactivate the Manual Defrost function                                                                                                   | From outside the menus only. Can be configured by the user (parameter <b>H35</b> ). Default: Activate stand-by ( <b>H35</b> =6). Change to <b>H35</b> =1.                           |
|     | Activate the AUX output / Switch on the light                                                                                                     | From outside the menus only. Can be configured by the user (parameter <b>H34</b> ). Default: Light ( <b>H34</b> =3).                                                                |
|     | Activate remote display function (terminal shared on LINK <sup>2</sup> )                                                                          |                                                                                                                                                                                     |

### LED

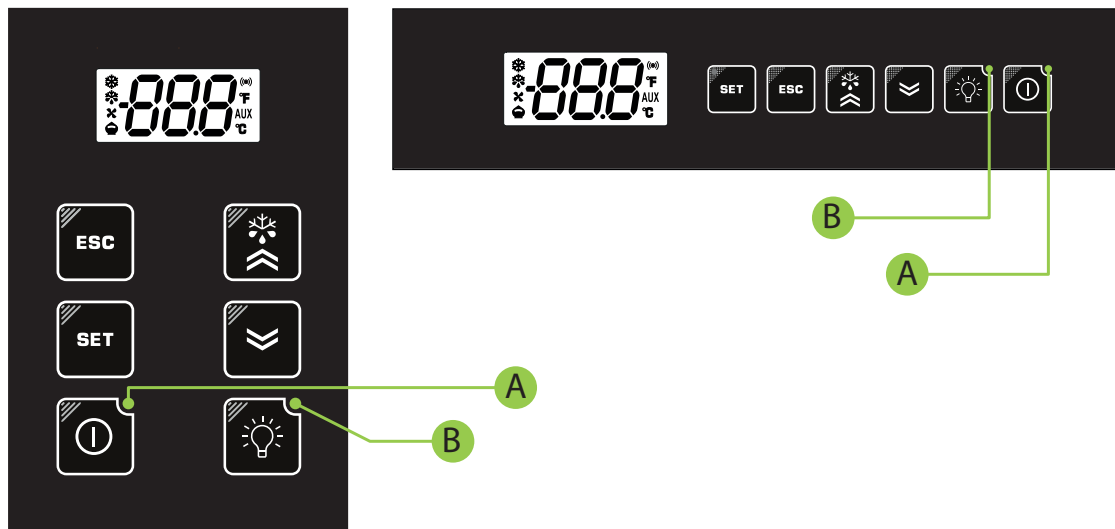
| Nr | Function | Description                                                              |
|----|----------|--------------------------------------------------------------------------|
| A  |          | Forced Fan activation (if H1x or i1y = 15 with x = 1...8 and y = 1 or 2) |
| B  |          | Terminal locked                                                          |
| C  |          | Light relay activation via key                                           |
| D  |          | Defrost active                                                           |
| E  |          | Device off                                                               |

## Icons

| Icon                                                                              | Function        | Description                                                                                                                                                            |
|-----------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Compressor      | On steadily: compressor active<br>Flashing: delay, protection or activation inhibited<br>Off: compressor off                                                           |
|  | Defrost         | On steadily: defrost active<br>Flashing: defrost activated manually or via digital input<br>Off: defrost inactive                                                      |
|  | Evaporator fans | On steadily: fans active<br>Off: fans off                                                                                                                              |
|  | Energy saving   | On steadily: Energy saving active<br>Flashing: reduced set active<br>Off: Energy Saving not active                                                                     |
|  | Alarm           | On steadily: alarm present<br>Flashing: alarm silenced<br>Off: No alarm active                                                                                         |
|  | °F              | On steadily: setting in °F ( <b>dro</b> (1) = F)<br>Flashing: terminal shared on Link <sup>2</sup><br>Off: light off                                                   |
|  | AUX             | On steadily: AUX output active and/or light on<br>Flashing: Deep cooling active<br>Off: AUX output off                                                                 |
|  | °C              | On steadily: setting in °C ( <b>dro</b> (0) = C)<br>Flashing: terminal shared on Link <sup>2</sup><br>Off: a value not relating to temperature or a label is displayed |

## KDT Terminal (Vertical and Horizontal)

### Interface



### Keys

| Key | press and release                                                                                                                                 | press for at least 5 seconds                                                                                                                                        |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <ul style="list-style-type: none"> <li>Go back up one level in the menu</li> <li>Confirm the parameter value</li> </ul>                           | From outside the menus only. Can be configured by the user (parameter <b>H33</b> ). Default: Stand-by ( <b>H33</b> =6).                                             |
|     | <ul style="list-style-type: none"> <li>Access the "Machine Status" menu</li> <li>Display alarms (if present)</li> <li>Confirm commands</li> </ul> | <ul style="list-style-type: none"> <li>Access the "Programming" menu</li> <li>When switching on, access selection mode for <b>AP1...AP8</b> to be loaded</li> </ul> |
|     | ---                                                                                                                                               | From outside the menus only. Can be configured by the user (parameter <b>H35</b> ). Default: Stand-by ( <b>H35</b> =6).                                             |
|     | <ul style="list-style-type: none"> <li>Scroll through the menu options</li> <li>Increase the values</li> </ul>                                    | From outside the menus only. Can be configured by the user (parameter <b>H31</b> ). Default: Manual defrost ( <b>H31</b> = 1).                                      |
|     | <ul style="list-style-type: none"> <li>Scroll through the menu options</li> <li>Decrease the values</li> </ul>                                    | From outside the menus only. Can be configured by the user (parameter <b>H32</b> ). Default: Not configured ( <b>H32</b> = 0).                                      |
|     | Switch the light on/off                                                                                                                           | From outside the menus only. Can be configured by the user (parameter <b>H34</b> ). Default: Light ( <b>H34</b> =3).                                                |
| +   | Activate remote display function (terminal shared on LINK <sup>2</sup> )                                                                          |                                                                                                                                                                     |

### LED

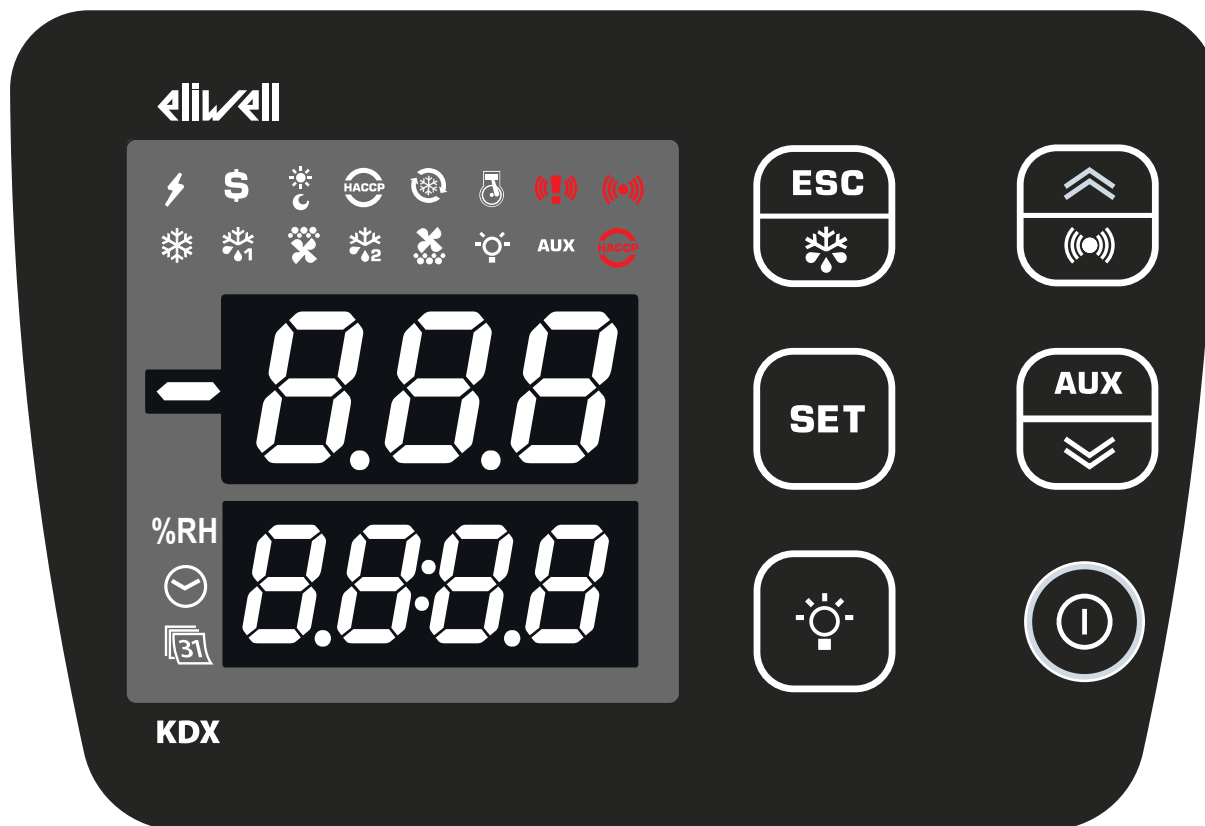
| Nr | Function | Description                     |
|----|----------|---------------------------------|
| A  |          | Device off.                     |
| B  |          | Light relay activation via key. |

## Icons

| Icon                                                                              | Function        | Description                                                                                                                                                            |
|-----------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Compressor      | On steadily: compressor active<br>Flashing: delay, protection or activation inhibited<br>Off: compressor off                                                           |
|  | Defrost         | On steadily: defrost active<br>Flashing: defrost activated manually or via digital input<br>Off: defrost inactive                                                      |
|  | Evaporator fans | On steadily: fans active<br>Off: fans off                                                                                                                              |
|  | Energy saving   | On steadily: Energy saving active<br>Flashing: reduced set active<br>Off: Energy Saving not active                                                                     |
|  | Alarm           | On steadily: alarm present<br>Flashing: alarm silenced<br>Off: No alarm active                                                                                         |
|  | °F              | On steadily: setting in °F ( <b>dro</b> (1) = F)<br>Flashing: terminal shared on Link <sup>2</sup><br>Off: light off                                                   |
|  | AUX             | On steadily: AUX output active and/or light on<br>Flashing: Deep cooling active<br>Off: AUX output off                                                                 |
|  | °C              | On steadily: setting in °C ( <b>dro</b> (0) = C)<br>Flashing: terminal shared on Link <sup>2</sup><br>Off: a value not relating to temperature or a label is displayed |

## KDX Terminal

### Interface



### Keys

| Key | press and release                                                                                                                                 | press for at least 3 seconds                                                                                                                                                                                                         |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <ul style="list-style-type: none"> <li>Go back up one level in the menu</li> <li>Confirm the parameter value</li> </ul>                           | From outside the menus only. Can be configured by the user (parameter <b>H33</b> ). Default: Stand-by ( <b>H33</b> =6). Change to <b>H33</b> =1 (defrost)                                                                            |
|     | <ul style="list-style-type: none"> <li>Access the "Machine Status" menu</li> <li>Display alarms (if present)</li> <li>Confirm commands</li> </ul> | <ul style="list-style-type: none"> <li>Access the "Programming" menu</li> <li>When switching on, access selection mode for the application <b>AP1</b>...<b>AP8</b> to be loaded</li> </ul>                                           |
|     | Switch the light on / off                                                                                                                         | From outside the menus only. Can be configured by the user (parameter <b>H34</b> ). Default: Light ( <b>H34</b> =3).                                                                                                                 |
|     | <ul style="list-style-type: none"> <li>Scroll through the menu options</li> <li>Increase the values</li> </ul>                                    | <ul style="list-style-type: none"> <li>From outside the menus only. Can be configured by the user (parameter <b>H31</b>). Default: Manual defrost (<b>H31</b> = 1). Change to <b>H31</b>=0.</li> <li>Alarm acknowledgment</li> </ul> |
|     | <ul style="list-style-type: none"> <li>Scroll through the menu options</li> <li>Decrease the values</li> </ul>                                    | From outside the menus only. Can be configured by the user (parameter <b>H32</b> ). Default: Not configured ( <b>H32</b> = 0). Change to <b>H32</b> =5 (AUX).                                                                        |
|     | Device Stand-by                                                                                                                                   | <ul style="list-style-type: none"> <li>Switch device on / off.</li> <li>From outside the menus only. Can be configured by the user (parameter <b>H35</b>). Default: Stand-by (<b>H35</b>=6).</li> </ul>                              |
|     | Activate remote display function (terminal shared on LINK <sup>2</sup> )                                                                          |                                                                                                                                                                                                                                      |



## Icons

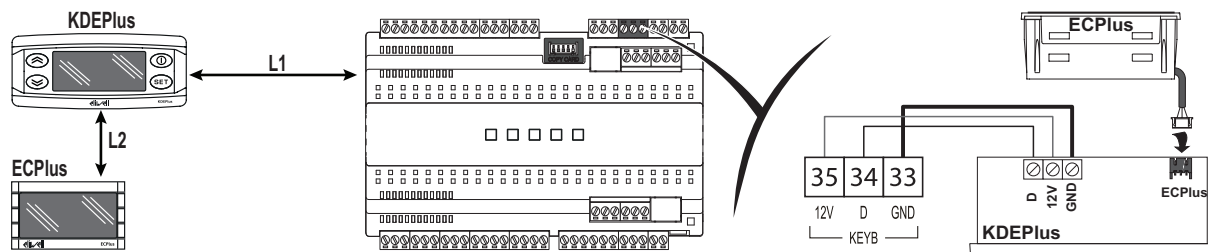
| Icon                                                                                | Function                           | Description                                                                                                       |
|-------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|    | Power supply                       | On steadily: power supply present<br>Off: power supply absent                                                     |
|    | Reduced setpoint                   | On steadily: reduced setpoint enabled<br>Off: reduced setpoint not enabled                                        |
|    | Energy saving                      | On steadily: energy saving enabled<br>Off: energy saving not enabled                                              |
|    | <b>NOT USED</b>                    |                                                                                                                   |
|    | Deep Cooling (DCC)                 | On steadily: deep cooling cycle enabled<br>Off: deep cooling cycle not enabled                                    |
|    | <b>NOT USED</b>                    |                                                                                                                   |
|    | Leak Detector Alarm<br>Panic Alarm | On steadily: panic and/or leak detector alarm active<br>Flashing: leak detector pre-alarm active<br>Off: no alarm |
|    | Alarm                              | On steadily: alarm active<br>Flashing: alarm acknowledged<br>Off: no alarm                                        |
|    | Compressor                         | On steadily: compressor active<br>Flashing: compressor activation delay<br>Off: compressor not active             |
|    | Defrost 1                          | On steadily: defrost 1 active<br>Flashing: dripping 1 active<br>Off: no defrost                                   |
|   | Evaporator fans                    | On steadily: evaporator fans active<br>Flashing: forced ventilation<br>Off: evaporator fans off                   |
|  | Defrost 2                          | On steadily: defrost 2 active<br>Flashing: dripping 2 active<br>Off: no defrost                                   |
|  | <b>NOT USED</b>                    |                                                                                                                   |
|  | Light                              | On steadily: light on<br>Off: light off                                                                           |
| <b>AUX</b>                                                                          | Auxiliary (AUX)                    | On steadily: auxiliary output active<br>Off: auxiliary output off                                                 |
|  | <b>NOT USED</b>                    |                                                                                                                   |
| <b>%RH</b>                                                                          | Humidity                           | On steadily: display a relative humidity percentage (only if <b>ddE=10</b> )<br>Off: otherwise                    |
|  | Time                               | On steadily: display hours and minutes (only if <b>ddE=11</b> )<br>Off: otherwise                                 |
|  | <b>NOT USED</b>                    |                                                                                                                   |

## Device connection with terminal and/or viewer

### Introduction

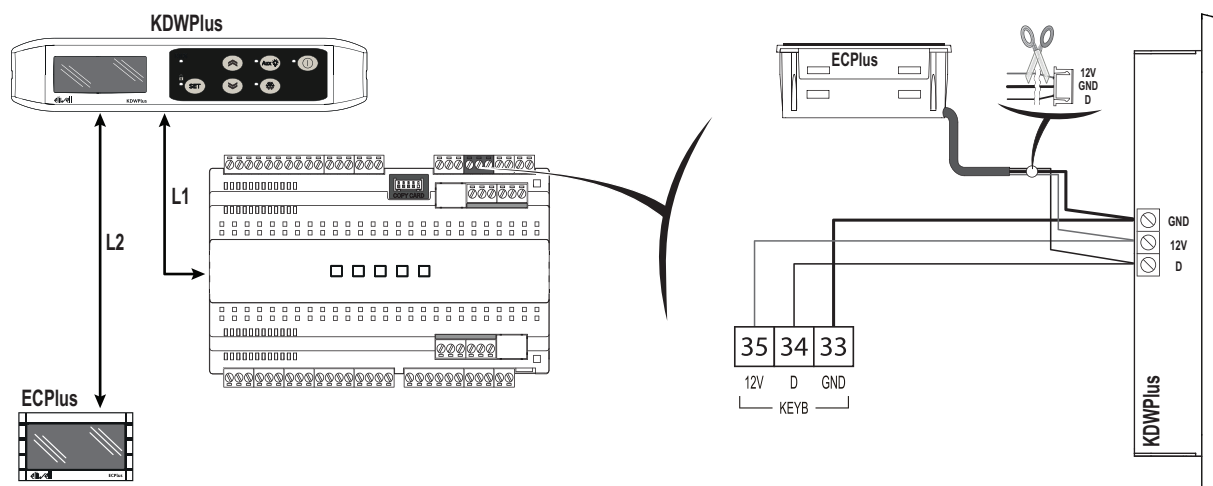
Only one **KDEPlus**, **KDWPlus**, **KDT** (Vertical or Horizontal) or **KDX** terminal and one **ECPlus** display module can be connected to each base for remote display purposes.

### Connection with KDEPlus and ECPlus



**Legend:** L1 = maximum 15 m / 49.21 ft; L2 = maximum 85 m / 278.87 ft

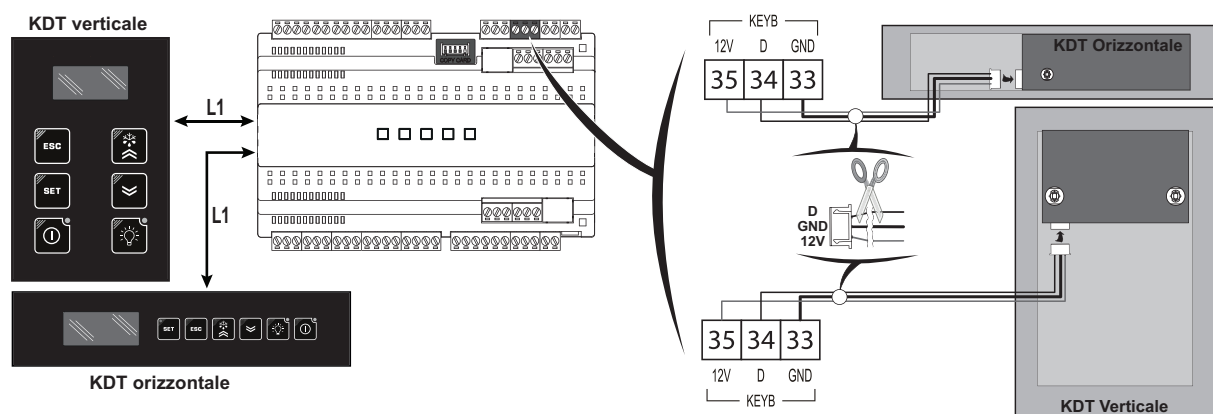
### Connection with KDWPlus and ECPlus



**Legend:** L1 = maximum 15 m / 49.21 ft; L2 = maximum 85 m / 278.87 ft

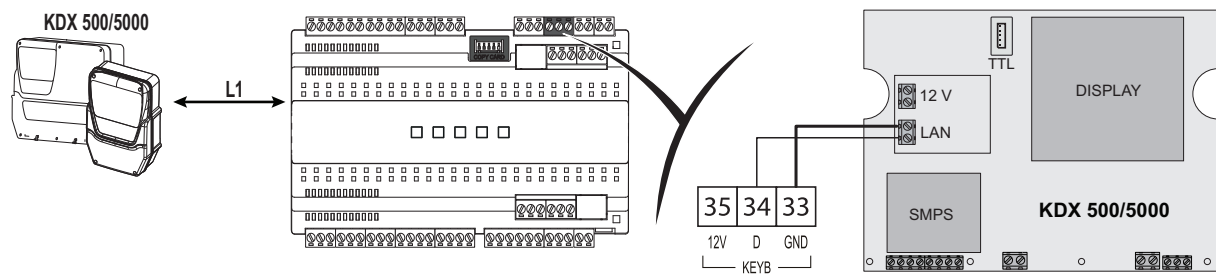
**Note:** An **ECPlus** module can be connected to the **KDWPlus** on the same terminal to which the base is connected.

### Connection with KDT (Vertical or Horizontal)



**Legend:** L1 = maximum 100 m / 328.08 ft.

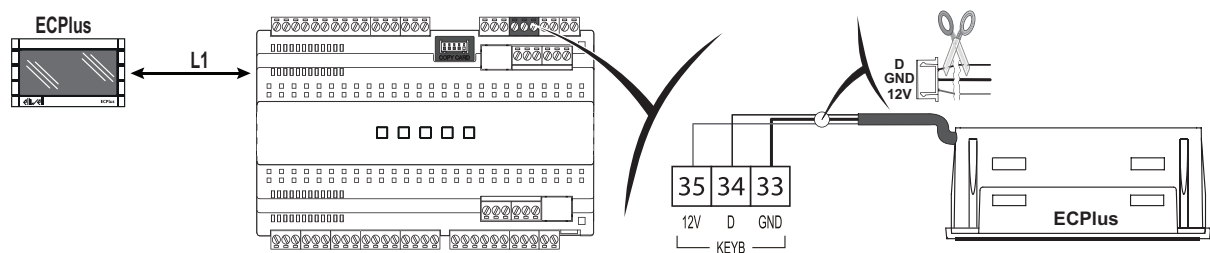
## Connection with KDX



**Legend:** L1 = maximum 100 m / 328.08 ft.

**Note:** to activate the same functions of the default setting, configure the following parameters: **H31** = 0; **H32** = 5 and **H33** = 1.

## Connection with ECPlus



**Legend:** L1 = maximum 100 m / 328.08 ft.

**Note:** An **ECPlus** display can be connected to the device using the same terminal where one of the user terminal is already connected.

## Using the device

### Switching on for the first time

Once the electrical connections have been completed, simply power up the device for it to start working.  
At the first startup:

1. Select and load the preset application - **AP1...AP8** - that best reflects the usage requirements.
2. Verify and, if necessary, adjust the value of the main device parameters to adapt the selected application to your system.
3. Make sure there are no active alarms (see alarms section).

### Loading Preset Applications

The procedure for loading one of the preset applications is:

1. Switch on the terminal connected to the device; press and hold **SET** until label "AP1" appears.  
**Note:** On the **KDT** terminal, within 30 seconds of switching the device on, press and hold any button for a least 1 second to unlock the terminal and then press and hold **▲** and **▼** simultaneously until label "AP1" appears.  
**Note:** On the **KDX** terminal, within 30 seconds of switching the device on, press **▲** and **▼** simultaneously until label "AP1" appears.
2. Scroll through applications **AP1...AP8** using **▲** and **▼**
3. Confirm the selected preset application using **SET**.  
**Note:** The process can be canceled by pressing **ESC** or letting a timeout occur (15 seconds)
4. If the procedure was completed successfully, the display will show "**yES**"; otherwise it will show "**Err**"
5. The device will restart and revert to showing the main display

The procedure for loading one of the preset applications restores the respective default values, with the exception of the parameters **NON** specific to the application that retain the value set previously. These values, left unaltered, may not be suitable and may therefore need to be changed.

## NOTICE

### INOPERABLE DEVICE

Verify the parameters after loading a preset application.

**Failure to follow these instructions can result in equipment damage.**

### Setting the setpoint

1. **KDT terminals only:** press any key for at least 1 second to unlock the terminal
2. Press and release **SET** to access the "Machine status" menu
3. Scroll through the folders with **▲** and **▼** until you find the folder **SEt**
4. Press **SET** to view the current setpoint value.
5. Change the setpoint value using **▲** and **▼** within 15 seconds.
6. To confirm the value press **SET** or **ESC**, or let a timeout occur (15 seconds).

### Locking/unlocking the terminal

The terminal can be locked/unlocked by programming the parameter **LOC** as required.

If the terminal is locked, it is possible to access the "Machine status" menu by pressing the key **SET** and view the Setpoint, but the value cannot be changed. To unlock the terminal, repeat the procedure used for locking it

The terminal only locks automatically on **KDT**:

- on startup
- after 30 seconds of inactivity

## Password

The passwords **PA1** and **PA2** are required to access the device parameters:

- **PA1**: access the User parameters (default: **PA1** = 0 - disabled)
- **PA2**: access the Installer parameters (default: **PA2** = 15 - enabled)

To change the password value:

1. Press and hold for at least 5 seconds 
2. Scroll through the parameters with  and  until you find the label "PA2"
3. Press and release 
4. Set the value "15" using the keys  and 
5. Confirm the value by pressing  (the first folder will be displayed)
6. Scroll through the folders with  and  until you find the label "diS"
7. Press and release 
8. Scroll through the parameters with  and  until you find the label "PS1" or "PS2", depending on whether you want to change access password **PA1** or **PA2**
9. To confirm the value press  or , or let a timeout occur (15 seconds).

**Note:** If **PA1**=0, the User parameters will be not protected and displayed before **PA2** label.

**Note:** If the value entered is incorrect, the label **PA1/PA2** will be shown again. Repeat the procedure.

## Viewing the probe values

1. **KDT terminal only:** press any key for at least 1 second to unlock the terminal
2. Press and release  to access the "Machine status" menu
3. Scroll through the folders with  and  until you find the folder **Pb1...Pb7**
4. Press  to view the value measured by the corresponding probe.

**Note:** the displayed value cannot be changed.

## Setting frequently used functions

Some frequently used functions may be paired with the keys by suitably configuring the corresponding parameters; they can then be activated by pressing and holding the paired key.

**Note:** some keys may not be present, depending on the model.

| Key                                                                               |                                                                                   |                                                                                   |                                                                                     | Parameter |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------|
| KDEPlus                                                                           | KDWPlus                                                                           | KDT                                                                               | KDX                                                                                 |           |
|  |  |  |  | H31       |
|  |  |  |  | H32       |
|  |  |  |  | H33       |
| ---                                                                               |  |  |  | H34       |
| ---                                                                               |  |  |  | H35       |

| Value H31/H32/H33/H34/H35 | Description               |
|---------------------------|---------------------------|
| 0                         | Disabled                  |
| 1                         | Defrost                   |
| 2                         | Reduced Set               |
| 3                         | Light                     |
| 4                         | Energy Saving             |
| 5                         | AUX                       |
| 6                         | Stand-by                  |
| 7                         | Deep Cooling Cycle        |
| 8                         | Defrost start/end         |
| 9                         | Counter cleaning function |

## Setting the main parameters

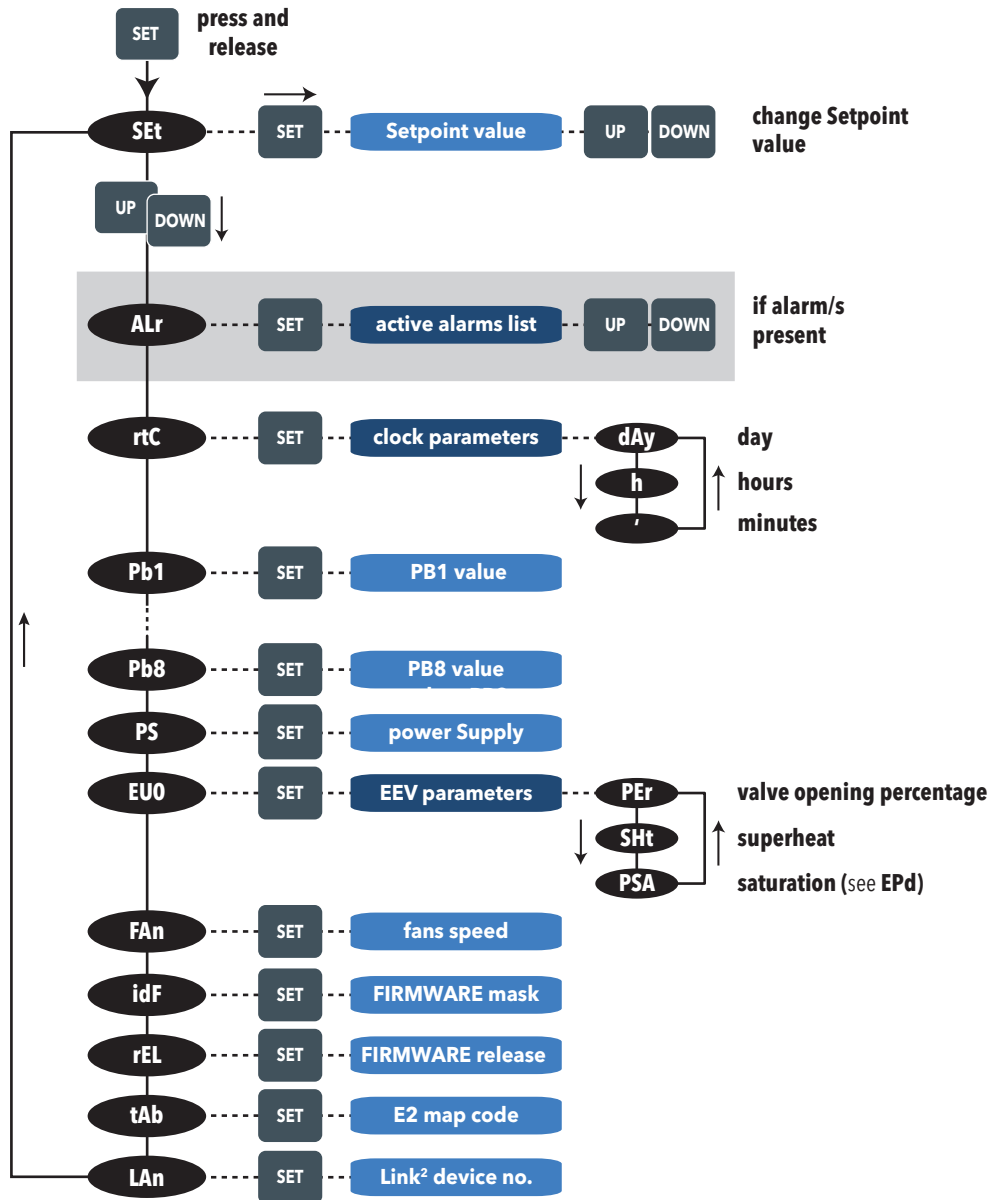
See "User" menu in the parameters table for the various models.

# "Machine Status" Menu

## Introduction

Press and release **SET** to access the "Machine status" menu.

## Menu



## ‘Programming’ menu

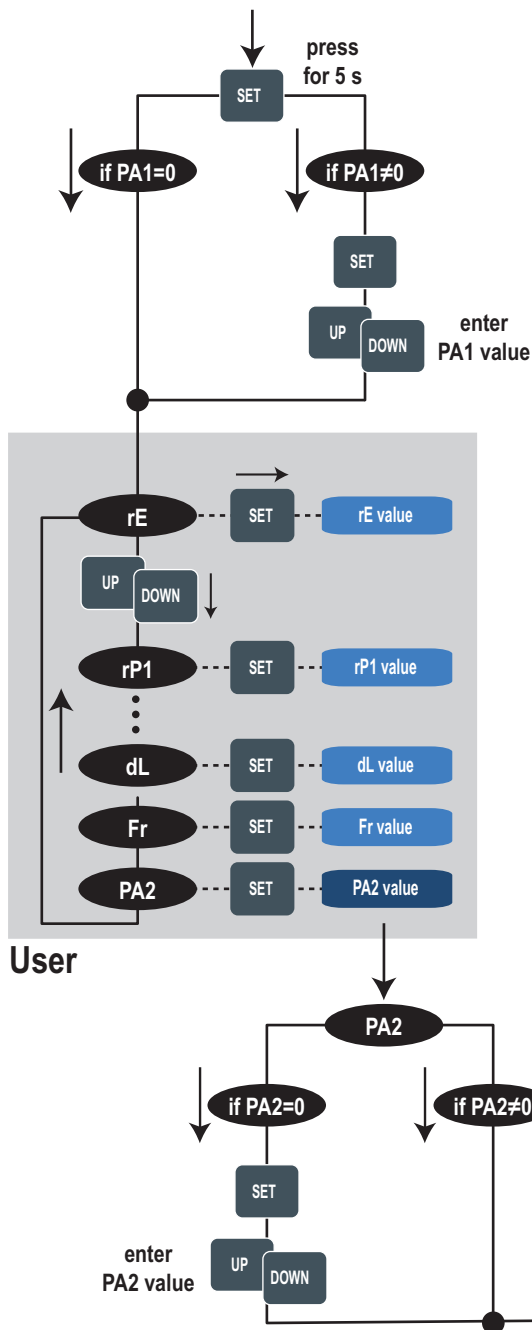
### Introduction

Press and hold **SET** for at least 5 seconds to access the “Programming” menu.

If required, an access password **PA1** for “User” parameters or **PA2** for “Installer” parameters will be requested (see section “**Passwords**”).

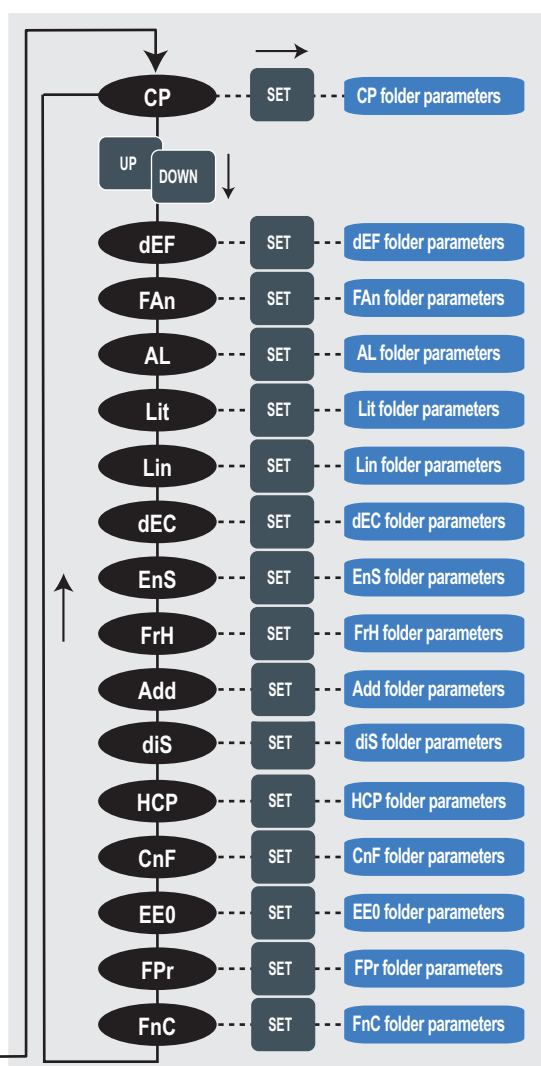
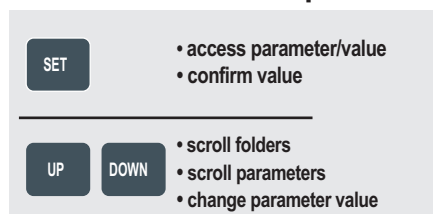
**Note:** Switch the device off and on again every time you change the parameter configuration.

### Menu



User

**NOTE: For folders and parameters:**



Installer



## Setting and calibrating the probes

### Probe inputs

The device has the following inputs:

- 5 NTC / PTC / Pt1000 / DI inputs (**Pb1**, **Pb2**, **Pb3**, **Pb4** and **Pb5**)
- 1 4...20 mA / DI input (**Pb6**)
- 1 ratiometric / DI input (**Pb7**)

**Note:** The temperature probes (**Pb1**...**Pb5**) must all be of the same type.

### Setting the probe type

To configure the temperature probes (**Pb1**...**Pb5**), you need to set parameter **H00** at **User** level or in folder **CnF** within the "Installer" menu:

| H00 value                | Probe type |
|--------------------------|------------|
| <b>ntc (0)</b> (default) | <b>NTC</b> |
| <b>Ptc (1)</b>           | PTC        |

### Probe calibration

The **diS** folder, within the "Installer" menu, contains the parameters

- **CA1** (probe Pb1)
- **CA2** (probe Pb2)
- **CA3** (probe Pb3)
- **CA4** (probe Pb4)
- **CA5** (probe Pb5)
- **CA6** (probe Pb6)
- **CA7** (probe Pb7)

to force an additional value (with sign) on reading the corresponding probe (if managed by the specific model).

## Setting the displayed values

### Introduction

The following settings refer to the parameters in folder **diS**.

### Display with decimal point

You need to set parameter **ndt**:

| ndt value      | Description                                                     |
|----------------|-----------------------------------------------------------------|
| <b>no (0)</b>  | Display with no decimal point                                   |
| <b>yes (1)</b> | Display with decimal point and resolution to tenths of a degree |

**Note:** this setting only influences the displaying of data, not the resolution of the measurement or the accuracy of the device's calculations.

### Default display

You need to set parameter **ddd**:

| ddd value      | Description                                                     |
|----------------|-----------------------------------------------------------------|
| <b>SP1 (0)</b> | Display setpoint                                                |
| <b>Pb1 (1)</b> | Display the value read by Pb1                                   |
| <b>Pb2 (2)</b> | Display the value read by Pb2                                   |
| <b>Pb3 (3)</b> | Display the value read by Pb3                                   |
| <b>Pb4 (4)</b> | Display the value read by Pb4                                   |
| <b>Pb5 (5)</b> | Display the value read by Pb5                                   |
| <b>Pbi (6)</b> | Display the value read by the virtual probe                     |
| <b>LP (7)</b>  | Display the value read by the remote probe (Link <sup>2</sup> ) |
| <b>PFi (8)</b> | Display the value read by the filtered virtual probe            |

### Viewer default ECPlus display

You need to set parameter **ddE**:

| ddd value       | Description                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------|
| <b>SP1 (0)</b>  | Display setpoint                                                                                    |
| <b>Pb1 (1)</b>  | Display the value read by Pb1                                                                       |
| <b>Pb2 (2)</b>  | Display the value read by Pb2                                                                       |
| <b>Pb3 (3)</b>  | Display the value read by Pb3                                                                       |
| <b>Pb4 (4)</b>  | Display the value read by Pb4                                                                       |
| <b>Pb5 (5)</b>  | Display the value read by Pb5                                                                       |
| <b>Pbi (6)</b>  | Display the value read by the virtual probe                                                         |
| <b>LP (7)</b>   | Display the value read by the remote probe (Link <sup>2</sup> )                                     |
| <b>PFi (8)</b>  | Display the value read by the filtered virtual probe                                                |
| <b>PbC (9)</b>  | Display the value read by the <b>KDX</b> terminal probe                                             |
| <b>PHr (10)</b> | Display the value read by the <b>KDX</b> terminal analogue input with HR icon (Humidity percentage) |
| <b>rtC (11)</b> | Display hours and minutes ( <b>KDX</b> terminal only)                                               |

**Note:** If the selected probe is not managed by that specific model, the displayed data should not be considered reliable.

## KDX additional features

A second display is available to set dedicated functions.

By setting parameter **ddE** it is possible to show:

- humidity percentage (**ddE** = 10; PHr)
- hours and minutes (**ddE** = 11; rtC)

By setting parameter **08P** you can customize the value shown on the ECPlus terminal:

- **0** = value with decimal point
- **1** = value without decimal point
- **2** = value \* 10

(**Televis only**) By setting parameter **08U** it is possible to customize the Unit of measure of the values read via Televis.

- **0** = disabled
- **1** = %RH
- **2** = ppm
- **3** = % valve opening
- **4** = °C
- **5** = °F

## Display during defrost

You need to set parameter **ddL**:

| ddL value | Description                                                            |
|-----------|------------------------------------------------------------------------|
| <b>0</b>  | Display the values read by the regulation probe                        |
| <b>1</b>  | Display the value read by the regulation probe at the start of defrost |
| <b>2</b>  | Display the label <b>dEF</b>                                           |

## Set the unit of measure for the temperatures

You need to set parameter **dro**:

| dro value    | Description                   |
|--------------|-------------------------------|
| <b>C (0)</b> | Display the temperature in °C |
| <b>F (1)</b> | Display the temperature in °F |

**Note:** this setting only influences how the temperatures read by the probes are displayed. After changing the unit of measure from °C to °F, the value of parameters **SEt**, **diF**, etc, remains the same and they will take on a different meaning, since they are expressed in a new unit of measure (**SEt** = 10°C becomes **SEt** = 10°F).

## Connection with Televis protocol

The device uses Modbus protocol to communicate.

To convert the Modbus network address into the Televis protocol use the table below:

|     |    | FAA |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |
|-----|----|-----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |    | 0   | 1  | 2  | 3  | 4  | 5  | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  |
| dEA | 0  | 0   | 16 | 32 | 48 | 64 | 80 | 96  | 112 | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 |
|     | 1  | 1   | 17 | 33 | 49 | 65 | 81 | 97  | 113 | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 |
|     | 2  | 2   | 18 | 34 | 50 | 66 | 82 | 98  | 114 | 130 | 146 | 162 | 178 | 194 | 210 | 226 | 242 |
|     | 3  | 3   | 19 | 35 | 51 | 67 | 83 | 99  | 115 | 131 | 147 | 163 | 179 | 195 | 211 | 227 | 243 |
|     | 4  | 4   | 20 | 36 | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
|     | 5  | 5   | 21 | 37 | 53 | 69 | 85 | 101 | 117 | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 |
|     | 6  | 6   | 22 | 38 | 54 | 70 | 86 | 102 | 118 | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 |
|     | 7  | 7   | 23 | 39 | 55 | 71 | 87 | 103 | 119 | 135 | 151 | 167 | 183 | 199 | 215 | 231 | 247 |
|     | 8  | 8   | 24 | 40 | 56 | 72 | 88 | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 |
|     | 9  | 9   | 25 | 41 | 57 | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 |
|     | 10 | 10  | 26 | 42 | 58 | 74 | 90 | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 |
|     | 11 | 11  | 27 | 43 | 59 | 75 | 91 | 107 | 123 | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 |
|     | 12 | 12  | 28 | 44 | 60 | 76 | 92 | 108 | 124 | 140 | 156 | 172 | 188 | 204 | 220 | 236 | 252 |
|     | 13 | 13  | 29 | 45 | 61 | 77 | 93 | 109 | 125 | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 |
|     | 14 | 14  | 30 | 46 | 62 | 78 | 94 | 110 | 126 | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 |
|     | 15 | 15  | 31 | 47 | 63 | 79 | 95 | 111 | 127 | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Legend:

|   |                                                                          |
|---|--------------------------------------------------------------------------|
| 1 | Not used in Modbus/RTU protocol                                          |
| 2 | Not configurable in Televis protocol                                     |
| 3 | Not configurable in Televis protocol and not used in Modbus/RTU protocol |

### Example

If the Modbus address **Adr** is set to 120, the corresponding values for **dEA/FAA** are:

- **dEA** = 8
- **FAA** = 7

---

# Tools

---

## Contents

This section includes the following topics:

|                                     |    |
|-------------------------------------|----|
| MFK (Multi Function Key) .....      | 74 |
| UNICARD .....                       | 74 |
| Copy parameters (UNICARD/MFK) ..... | 75 |
| Boot Loader Firmware .....          | 76 |
| Terminal shared on Link2 .....      | 76 |

## MFK (Multi Function Key)

The Multi Function Key (MFK) lets you download/upload a parameter map from/to a device.



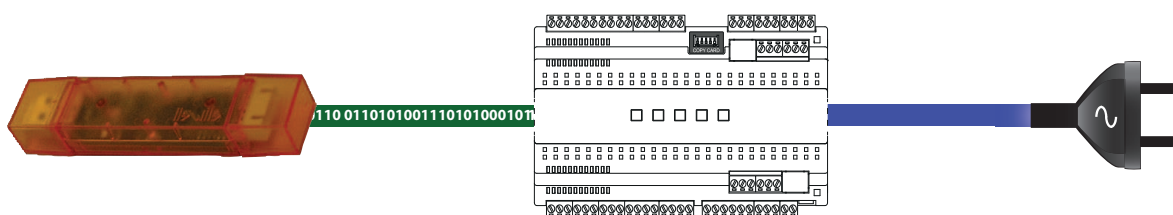
## UNICARD

The UNICARD allows uploading/downloading of a parameters map from one device to another. Its flexibility means the various devices can be customized quickly and easily.

The UNICARD:

- can be connected directly to the computer via USB
- Can be powered by means of a power supply unit or a USB battery and directly powers the device during the parameter map downloading/uploading steps.

### Power bank



### Power supply with USB power supply unit



### Power supply with USB battery



## Copy parameters (UNICARD/MFK)

### Introduction

The UNICARD/MFK connects to the TTL serial port and allows uploading/downloading of a parameters map.

**Note:** The UNICARD can be connected directly to a computer by means of a USB port. Format the UNICARD the first time it is used.

**Note:** Before loading or downloading a map, make sure that communication with the supervisor has been cut off. In other words, disconnect the RS485 from the device or stop Supervision system acquisitions.

### Formatting the UNICARD (Fr)

1. Access the Installer parameters, entering the **PA2** password if enabled.
2. Scroll through the folders with  and  until you find the folder **FPr**
3. Press  to confirm.
4. Scroll through the parameters using  and  until you see parameter **Fr** and press : if the operation is a success, the display will show **yES**, otherwise it will show **no**.

**Note:** This procedure deletes all data on the key. This operation cannot be reversed.

### Uploading parameters from the device to the UNICARD/MFK (UL)

1. Access the installer parameters, entering the **PA2** password if enabled.
2. Scroll through the folders with  and  until you find the folder **FPr**
3. Press  to confirm
4. Scroll through the parameters using  and  until you see parameter **UL** and press  to confirm
5. If the operation is completed, the display will show **yES**, otherwise it will show **no**.

### Downloading parameters from the UNICARD/MFK to the device (dL)

1. Access the installer parameters, entering the **PA2** password if enabled.
2. Scroll through the folders with  and  until you find the folder **FPr**
3. Press  to confirm
4. Scroll through the parameters using  and  until you see parameter **dL** and press  to confirm
5. If the operation is completed, the display will show **dLy**, otherwise it will show **dLn**.

**Note:** after downloading the data, the instrument will work with the settings for the loaded map straight away.

### Downloading parameters from the UNICARD/MFK to the device (from reset)

Connect the UNICARD/MFK when the device is switched off. When the device is switched on, the data is downloaded automatically from the UNICARD/MFK to the device. After the lamp test, the display shows **dLy** if the operation was successful, otherwise it will show **dLn**.

**Note:** after downloading the data, the instrument will work with the settings for the loaded map straight away.

## Boot Loader Firmware

### Description

The device comes with Boot Loader, which makes it possible to update the Firmware directly on site. Updating takes place via UNICARD/MFK.

### Operating mode

To carry out the update:

- Connect the UNICARD/MFK with the application loaded onto it
- Restore the device power, if it is off; otherwise, switch it off and on again
- Wait for the UNICARD/MFK LED to flash (operation in progress)
- The operation is complete when the UNICARD/MFK LED is:
  - **ON**: operation completed successfully
  - **OFF**: operation not completed (application incompatible ...)

## Terminal shared on Link<sup>2</sup>

### Description

It is possible, from every device in a Link<sup>2</sup> network and via the local terminal, to navigate within any of the other devices connected to the Link<sup>2</sup> network.

### Operating mode

To activate sharing, press  and  at the same time.

When remote displaying is active, the 2 icons °C and °F flash.

**Note:** you will be asked to enter the modbus address (**Adr**) for the remote device.

To return to the default menu:

- Press and hold for at least 5 seconds  and 
- Wait for the timeout (60 seconds) after the last time a key was pressed.

During the "remote display function", the local terminal (for the device display being viewed remotely) is locked.

Unlocking takes places 3 seconds after the display release. If during the "remoting" procedure the connection disappears, the display will show "---"



# Electronic Expansion Valve (EEV)

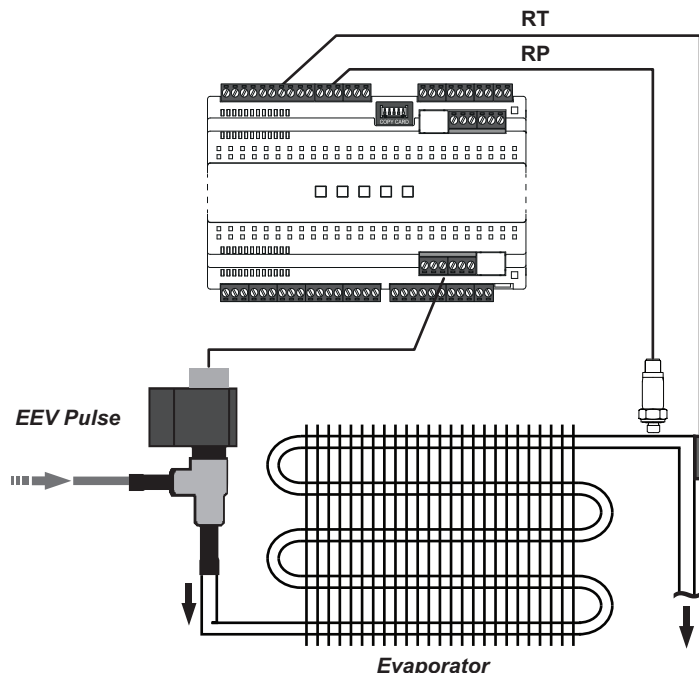
## Contents

This section includes the following topics:

|                                                        |    |
|--------------------------------------------------------|----|
| Introduction .....                                     | 78 |
| List of valves .....                                   | 79 |
| Valve type .....                                       | 80 |
| Refrigerant type .....                                 | 81 |
| Local pressure transducer (4...20 mA) .....            | 82 |
| Local ratiometric transducer .....                     | 82 |
| Pressure/ratiometric transducer shared via Link2 ..... | 83 |
| Ratiometric transducer shared via hardware .....       | 84 |
| Remote backup saturation probe .....                   | 84 |
| Superheat probe .....                                  | 84 |
| Protection fuse .....                                  | 85 |
| Valve regulation parameters .....                      | 87 |
| EEV driver description .....                           | 88 |
| Manual EEV management .....                            | 89 |
| EEV driver regulation .....                            | 90 |
| RTX DOMINO ZERO Tuning .....                           | 92 |

## Introduction

The figure below shows a connection example for the device:



**Legend:** RT = Refrigerant Temperature; RP = Refrigerant Pressure; EEV Pulse = Pulse Valve; Evaporator = Evaporator.

Use of the Pulse EEV requires configuration of the following resources:

- the superheat probe via parameter **rSS** (NTC/PTC/Pt1000 temperature probe)
- the saturation probe via parameter **rSP** (ratiometric or pressure transducer 4...20 mA).

The **DEFAULT** configuration includes the following settings:

- **Pb5** as superheat probe (NTC probe)
- **Pb6** as saturation probe (pressure transducer 4...20 mA).

### ⚠ WARNING

#### UNINTENDED EQUIPMENT OPERATION

- Verify the information concerning valve parameters as declared by the manufacturer before using the valve in a generic valve configuration.
- Connect one valve coil to terminals 61(+) and 62(-) and connect the other coil to terminals 63(+) and 64(-). Crossed connections between the two coils is not permitted.
- After connection, make sure the valve opens and closes correctly after the corresponding command is made.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

Take extra care during the valve wiring stages. Choose the most suitable valve coil carefully in accordance with the voltage used.

### ⚠ WARNING

#### UNINTENDED EQUIPMENT OPERATION

Verify the information concerning valve parameters as declared by the manufacturer before using the valve in a generic valve configuration.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

Schneider Electric and Eliwell are not responsible for data provided by the valve manufacturer, including technical changes or updates. Please refer to the valve manual to verify its suitability and correct configuration.

## How to disable the EEV

If you don't use the EEV Valve or it is inoperable, it is possible to disable it by setting parameter **Ety** = 0.

## List of valves

The following valves are **COMPATIBLE** with the device:

| Manufacturer                  | Valve | Notes                       |
|-------------------------------|-------|-----------------------------|
| Eliwell by Schneider Electric | PXV   | Orifices from 0.5 to 2.7 mm |

**NOTE:** The information below are presented in conformity with the technical documentation for the corresponding products listed in the table. Manufacturer specifications are subject to change without notice.

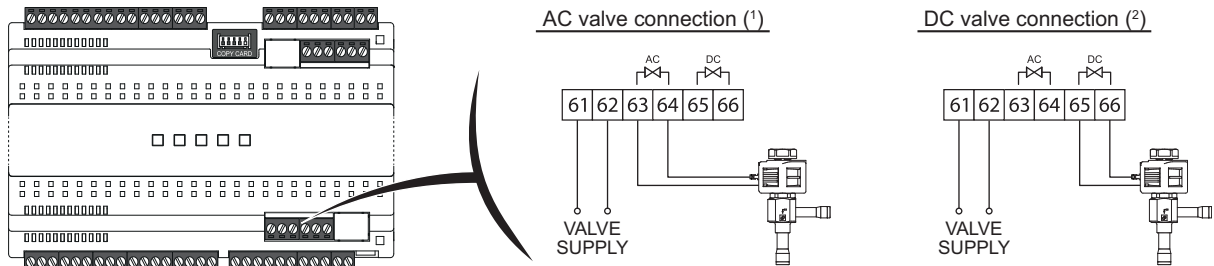
| Manufacturer | Valve               | Reference document            |
|--------------|---------------------|-------------------------------|
| DANFOSS      | AKV10, AKV15, AKV20 | DKRCC.PD.VA1.A7.02_AKV_sw.pdf |
|              | AKVA (NH3)          | DKRCC.PD.VA1.B5.02_AKVA.pdf   |
| ALCO         | EX2                 | EN_EX2__35016.pdf             |

Schneider Electric and Eliwell are not responsible for data provided by the valve manufacturer, including technical changes or updates. Please refer to the product manual and the valve manual to verify its suitability and correct configuration.

## Valve type

The device is designed for the management of AC and DC type “Pulse” valves.

The wiring diagram for Pulse electronic expansion valves is as follows:



(1) = AC valve connection; (2) = DC valve connection

Before connecting the valve, configure the device carefully by selecting the type of valve used.

Schneider Electric and Eliwell are not responsible for data provided by the valve manufacturer, including technical changes or updates. Please refer to the product manual and the valve manual to verify its suitability and correct configuration.

### NOTICE

#### INOPERABLE DEVICE

- Verify all wiring before engaging the electricity supply.
- Verify the rating data of the valve before connecting it.
- Make sure the valve coil is connected to the correct terminals.
- Make sure terminals 61-62 are connected to an AC power source with voltage of an RMS value suited to the type of valve used.

**Failure to follow these instructions can result in equipment damage.**

**Note:** The valve coil should be connected:

- to terminals 63-64 for valves in alternating current (AC)
- to terminals 65-66 for valves in direct current (DC).

**Note:** Connect terminals 61-62 to an AC power source with voltage of an RMS value:

- equal to the RMS value required by the valve coil if connected to an AC valve.
- equal to the DC value required by the valve coil if connected to a DC valve. For example, to control a valve with DC coil at 240 Vdc, you need to apply a voltage of 240 Vac RMS.

## Refrigerant type

This device is designed to operate in non-hazardous locations and where applications which generate - or could potentially generate - hazardous atmospheres have been isolated. Install this device only in areas and with applications known to be free from hazardous atmospheres at all times.

### ⚠ DANGER

#### HAZARD OF EXPLOSION

- Install and use this equipment in non-hazardous locations only.
- Do not install or use this equipment in applications which could generate hazardous atmospheres, such as those using flammable refrigerants.

**Failure to follow these instructions will result in death or serious injury.**

For information regarding the use of control equipment in applications capable of generating hazardous materials, please contact the relevant national regulatory bodies or certifying authorities.

The device can operate with one of the following refrigerants, supplied in the device:

| PAR.       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | UM  | Applications              |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------|
| <b>Ert</b> | <p>Type of refrigerant.</p> <ul style="list-style-type: none"> <li>• <b>404</b> (0) = R404A</li> <li>• <b>r22</b> (1) = R22</li> <li>• <b>410</b> (2) = R410A</li> <li>• <b>134</b> (3) = R134a</li> <li>• <b>744</b> (4) = R744 (CO2)</li> <li>• <b>507</b> (5) = R507A</li> <li>• <b>717</b> (6) = R717 (NH3)</li> <li>• <b>290</b> (7) = reserved</li> <li>• <b>407</b> (8) = R407A</li> <li>• <b>448</b> (9) = R448A</li> <li>• <b>449</b> (10) = R449A</li> <li>• <b>450</b> (11) = R450</li> <li>• <b>513</b> (12) = R513A</li> <li>• <b>PAr_1</b> (13) = customizable 1</li> <li>• <b>PAr_2</b> (14) = customizable 2</li> <li>• <b>PAr_3</b> (15) = customizable 3</li> <li>• <b>PAr_4</b> (16) = customizable 4</li> <li>• <b>PAr_5</b> (17) = customizable 5</li> <li>• <b>PAr_6</b> (18) = customizable 6</li> <li>• <b>455</b> (19) = reserved</li> </ul> <p><b>Note:</b> Contact Eliwell representative for customizable refrigerants.</p> | num | 410 (not in applications) |

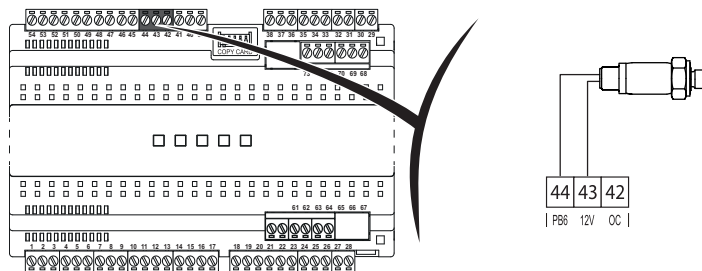
**Note:** parameter **Ert** is not included in Applications **AP1...AP8** and does not change if the default values are restored or an Application other than the default is loaded.

If you need to use a refrigerant that is not on the list, you can load the “refrigerant descriptor” (containing the key values corresponding to the refrigerant used) via UNICARD/Multi Function Key and then set parameter **Ert** = PAr\_1, PAr\_2, PAr\_3, PAr\_4, PAr\_5 or PAr\_6.

**Note:** To get the “refrigerant descriptor”, please contact Eliwell Technical Support.

## Local pressure transducer (4...20 mA)

The wiring diagram for the pressure transducer is as follows:



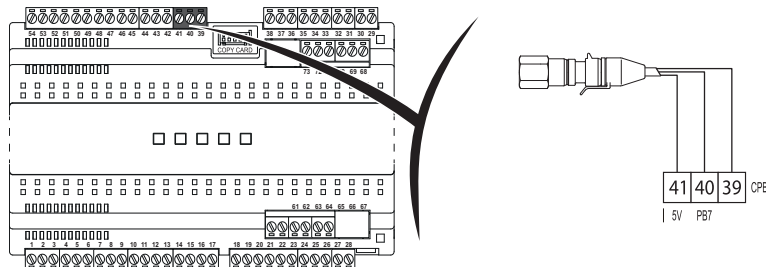
Set parameter **rSP**=Pb6 to use the 4...20 mA input (Pb6) as a saturation probe.

Set the lower limit (to 4 mA) and the upper limit (to 20 mA) using parameters **H03** and **H04**.

**Note:** Parameters **H03** and **H04** refer to relative pressure (atmospheric pressure = 0.0 bar).

## Local ratiometric transducer

The wiring diagram for the ratiometric transducer is as follows:



Set parameter **rSP**=Pb7 to use the ratiometric input (Pb7) as a saturation probe. Use parameter **trA** to set one of the ratiometric transducers listed:

| PAR.       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | UM  | Applications              |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------|
| <b>trA</b> | <p>Selects the model of ratiometric transducer used.</p> <ul style="list-style-type: none"> <li><b>USE</b> (0) = Generic Probe Set by customer</li> <li><b>rA1</b> (1) = EWPA 010 R 0/5 V 0/10 BAR FEMALE</li> <li><b>rA2</b> (2) = EWPA 030 R 0/5 V 0/30 BAR FEMALE</li> <li><b>rA3</b> (3) = EWPA 050 R 0/5 V 0/50 BAR FEMALE</li> <li><b>rA4</b> (4) = AKS 32R -1 ...6 BAR</li> <li><b>rA5</b> (5) = AKS 32R -1 ...12 BAR</li> <li><b>rA6</b> (6) = AKS 32R -1 ... 20 BAR</li> <li><b>rA7</b> (7) = AKS 32R -1 ... 34 BAR</li> <li><b>rA8</b> (8) = Reserved.</li> </ul> <p><b>Note:</b> The upper and lower limits for probes <b>rA1</b>... <b>rA8</b> are preset (and cannot be changed), while if you select <b>USE</b> you will need to set them via parameters <b>H05</b> and <b>H06</b>.</p> | num | USE (not in applications) |

If the ratiometric transducer is not present in the presets, you can configure it manually by setting parameter **trA**=USE.

In this case, set the following parameters:

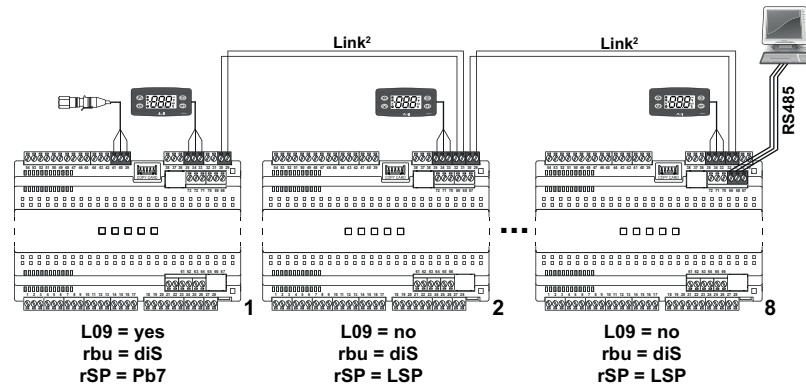
- H05:** lower limit for the corresponding probe to 0.5 V (10%)
- H06:** upper limit for the corresponding probe to 4.5 V (90%)

## Pressure/ratiometric transducer shared via Link<sup>2</sup>

If the devices are connected in a Link<sup>2</sup> network, one or two saturation sensors can be connected and their value shared.

### EXAMPLE 1:

Sharing a saturation probe.



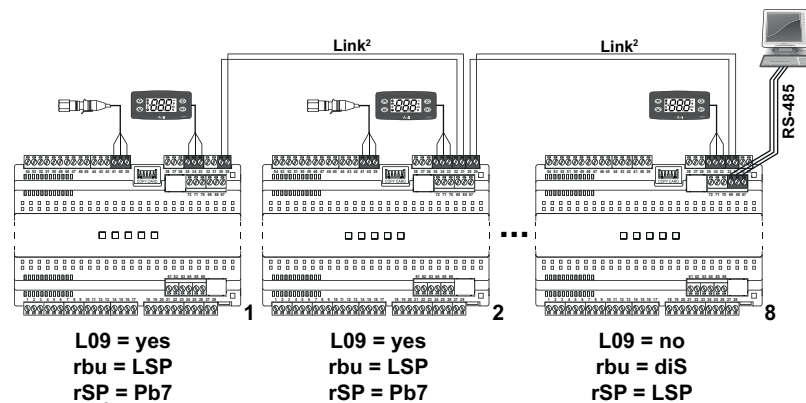
Update the saturation probe sent by the supervision system with a period that is 3 minutes shorter, otherwise the probe will be considered as being in error.

If the probe is in error, all devices will regulate according to the configuration created using the probe error parameters.

In the event of no-link, all Link<sup>2</sup> devices, which are not capable of receiving the value from the device with the sensor fitted, will behave as though the saturation probe is in error.

### EXAMPLE 2:

Sharing two saturation probes connected to two separate boards in the Link<sup>2</sup> network (to increase the reliability of the system, in the event of a fault).



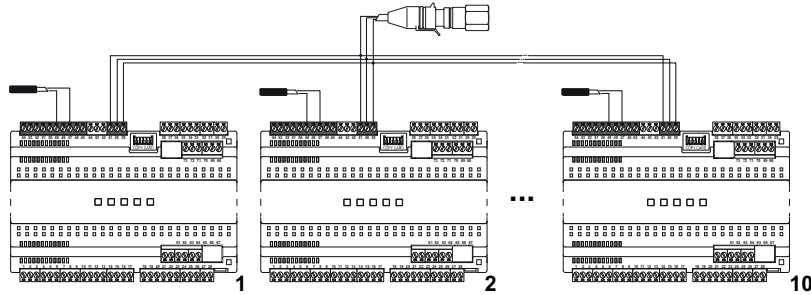
The Link<sup>2</sup> will automatically share one of the two values available (the first value received). The other device, equipped with a pressure transducer, will not use the value shared, instead using the local value, unless it is in error, in which case the shared value will be used.

If the pressure transducer used for sharing enters error mode, the Link<sup>2</sup> network will automatically take steps to share the pressure value of the other transducer (provided that this is not in error).

If both saturation probes are in error, or a no-link condition arises, the boards will take steps to regulate in accordance with the saturation probe inoperable scenario.

## Ratiometric transducer shared via hardware

The wiring diagram for the shared ratiometric transducer is as follows:



The ratiometric input is configured in exactly the same way as for the non-shared “Local ratiometric transducer”.

To use a shared ratiometric transducer (**Pb7**), set parameter **rSP=rP**.

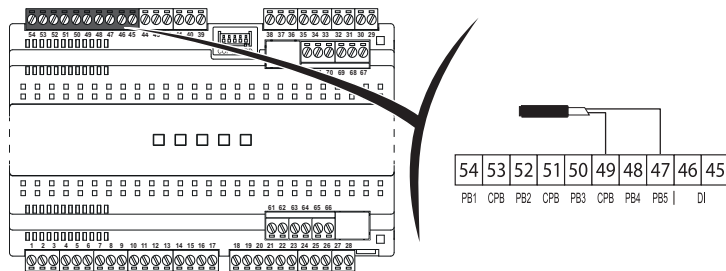
## Remote backup saturation probe

A backup saturation value can be sent to devices in the Link2 network via serial commands. If the device has no valid saturation value (local or shared), it can use the backup saturation value originating from a remote source.

If the remote device does not update the value within 3 minutes, the device will consider the backup probe as not available, so will regulate according to the conditions detected by the saturation probe in error.

## Superheat probe

Position the superheat probe (you can select its type (NTC, PTC or Pt1000) using parameter **H00**) as shown in the figure.





## Protection fuse

The **RTX 600 /V** device has an internal fuse protecting it from the valve coils

If the fuse trips, it must be replaced.

### **DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, FIRE OR ARC FLASH**

- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Before restoring the power supply, replace and secure all covers, hardware components and cables.
- For all the devices requiring it, make sure there is an effective ground connection.
- Use only the specified voltage when operating this device and any associated products.
- Use appropriate safety interlocks where personnel and/or equipment hazards exist.
- Install and operate this equipment in an enclosure appropriately rated for its intended environment and secured by a keyed or tooled locking mechanism.
- Do not use this equipment for safety-critical functions.
- Do not disassemble, repair, or modify this equipment.
- Do not connect the device directly to the line voltage, unless expressly indicated.

**Failure to follow these instructions will result in death or serious injury.**

### **DANGER**

#### **HAZARD OF OVERHEATING AND FIRE**

Replace the fuse with a new one of the same type and specification. For specification details, please see the "Environmental and electrical characteristics" section of this document.

**Failure to follow these instructions will result in death or serious injury.**

When handling the equipment, take care to avoid damage caused by electrostatic discharge. In particular, the unshielded connectors are extremely vulnerable to electrostatic discharge.

### **WARNING**

#### **UNINTENDED EQUIPMENT OPERATION DUE TO ELECTROSTATIC DISCHARGE**

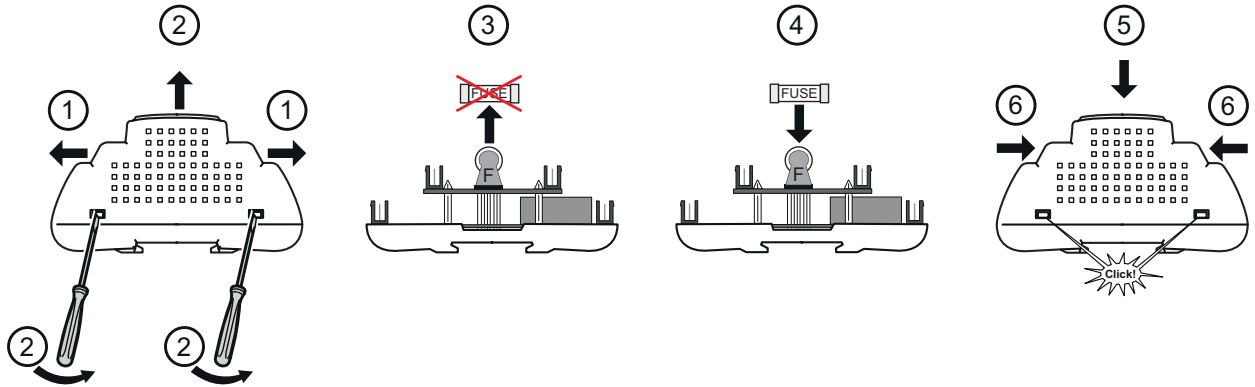
- Keep the equipment in the protective packaging until ready for installation.
- The device must only be installed in type-approved cupboards and/or in points that prevent unauthorized access and provide protection from electrostatic discharge.
- When handling sensitive equipment, use a grounded device protecting against electrostatic discharge.
- Before handling the equipment, always discharge the static electricity from the body by touching an earthed surface or type-approved antistatic mat.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## Replacing the fuse

The fuse replacement procedure is as follows:

1. Disconnect all disconnectable terminals on the Top Board (electronic expansion valve and RS485 network).
2. Remove the cap using a screwdriver on the tabs on both sides.
3. Remove the fuse you want to replace from the Top Board
4. Insert the new fuse (**Note:** verify the correct size in the section "Environmental and electrical characteristics")
5. Re-fit the cap, pressing evenly until you hear the side tabs click into place
6. Reconnect all the disconnectable terminals on the Top Board.



## Valve regulation parameters

**RTX 600 /V** is a device for Pulse electronic expansion valves that regulates the minimum superheat value at the evaporator output.

The control algorithm can adapt itself to the counter conditions to achieve the performance levels desired by the user. The user will only be asked to set the setpoint temperature (**OLt**) and the algorithm will adapt itself to reach the desired performance levels. The algorithm is optimized for operation with low superheat setpoints.

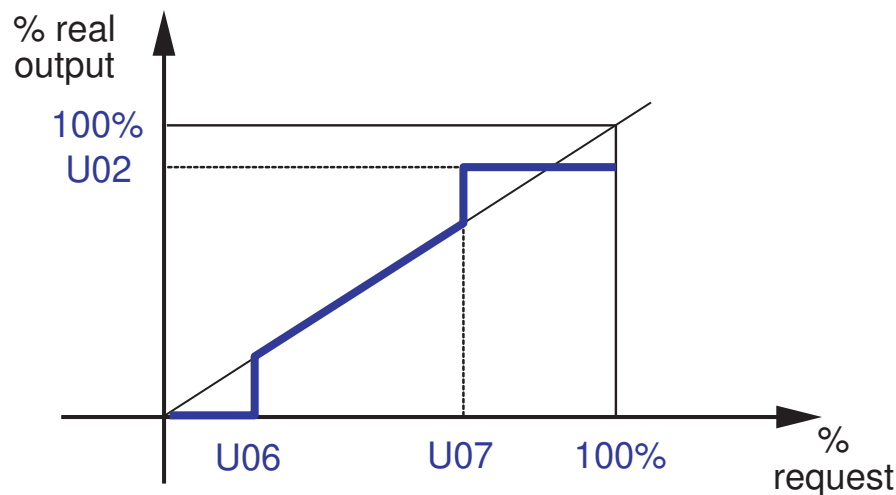
The internal driver has user configurations that can be used to set:

- **U02**: the maximum valve opening percentage
- **U05**: the operating time at maximum opening before the alarm is triggered
- **U06**: the minimum useful valve opening percentage for modulation
- **U07**: the maximum useful valve opening percentage for modulation.

If regulation requires a value under **U06**, valve opening will be 0%, while if regulation requires an opening value over **U07**, the valve will be open at the value **U02**.

### Notes:

- If the regulator controls an output greater than or equal to **U07**, the actual output will be equal to **U02**
- If the regulator controls an output less than or equal to **U06**, the actual output will be equal to 0%
- If the regulator controls an output greater than or equal to **U07** for a time period greater than **U05**, a maximum opening alarm will be generated to indicate a hazardous condition for the system.



**Legend:** % real output = real output percentage; % request = request percentage.

## EEV driver description

The driver has the following functions:

- **MOP**: for controlling the “maximum operating pressure” (can be activated with **HOE**).
- **Dead Rack**: for selective load disabling (can be activated with **U25**).
- **Continuous Modulation**: continuous control of EEV opening

### Notes:

- Activation/deactivation of the EEV driver will run parallel to the compressor status
- the saturation probe should be connected directly to the device.
- Boards connected to Link<sup>2</sup> can manage the shared saturation value as:
  - Regulation probe (local probe absent)
  - Backup probe (for use when the local probe is in error).
- Updating of the remote value for the saturation probe should be transmitted within 180 seconds (3 minutes), otherwise the probe will be considered to be in error.
- In continuous modulation, the compressor will always be on call, except when alarms are present.
- During a defrost period, the valve remains closed.

Force EEV closure from Digital Input or remote command, regardless of the regulation in progress and without any signaling.

The function can be activated remotely in two ways:

#### 1. Using two separate commands:

- A command to force EEV closure (see **nPV** command on Table of Modbus Resources)
- A command to reactivate the EEV (see **oPV** command on Table of Modbus Resources).

A timeout of 30 seconds is automatically reloaded when the device receives a EEV closure command. If the timeout expires, and the EEV is still in closing mode, it forces the reactivation of the EEV.

#### 2. Writing two logic resources:

- A function enabling timer: the EEV closure can be force only if the function enabling timer is counting. Timer is reloaded with the received remote value and timing.  
The timer is expressed in seconds (maximum value: 30'000 seconds).
- A function status: **0** = EEV enabled; **1** = EEV forced closed.  
If the function enabling timer is elapsed, this variable is set to 0.

The driver has user configurations that can be used to set:

- **U02**: maximum EEV opening
- **U06**: minimum valve opening value during modulation as a percentage
- **U07**: maximum valve opening value during modulation as a percentage.

If regulation requires a value under **U06**, valve opening will be at 0%, while if regulation requires an opening value over **U07**, the valve will be open at the value **U02**.

If the valve opening percentage is above **U07** for a period greater than **U05**, the EEt alarm will be activated.

If the saturation temperature is greater than parameter **Hot** for a time greater than parameter **tAP**, the EEP alarm will be activated.

If there is an error in the saturation probe and the LAN or remote backup probes are not available, the EES alarm will be activated.

## MOP (Maximum Operating Pressure) function

The 'MOP' function for controlling the 'maximum operating pressure' can be activated by configuring parameter **HOE** and controls valve closure proportionally as the saturation temperature approaches the value of parameter **Hot** (maximum evaporator temperature), with a proportional band equal to parameter **HPb**.

MOP regulation can be disabled:

- using parameter **HOE**
- for a time period **HdP** on device startup or on returning from a defrost condition.

On returning from 'MOP' regulation, if **U65** > 0, the valve begin the regulation starting from a percentage threshold defined by the parameter **U64** (without any timeout).

## Dead Rack (Maximum Operating Pressure) function

The 'Dead Rack' function (group of non-operational compressors) can be activated by configuring parameter **U25** and involves deactivating the loads selected using parameter **U25** when the saturation temperature is greater than the value of parameter **U26**.

The function has a hysteresis of 1°C or 1°F. This means if a high saturation temperature occurs (and therefore high pressure), the system considers the group of compressors as having malfunctioned and deactivates the loads selected by the user to avoid rapid defrosting of the products (the loads are: lights, frame heater, defrost, evaporator fan).

The deactivation of loads can also be controlled remotely.

## One or both probes in error

If one or both probes are in error:

- If the pressure transducer is inoperable and **U22**= En (enabled), the saturation temperature backup value **U23** will be used. The MOP function will be disabled.
- if the pressure transducer is inoperable and **U22**= diS (disabled), the valve will be set to a fixed opening percentage **U8**. The MOP function will be disabled.
- if the temperature probe is inoperable, the driver will maintain a fixed opening percentage **U8** for the valve. The MOP function will be active, modulating the valve opening percentage in the range 0...**U8**.
- if the both probes are inoperable, the driver will maintain a fixed opening percentage **U8** for the valve.

## Manual EEV management

The device can control the valve in manual mode.

There are two ways of doing so:

- management via the terminal.
- management via serial port with remote control.

### Management via terminal

Activation takes place by configuring the parameter **A\_F**=En, while the valve opening percentage is set with parameter **dUt**.

If there is no power supply or the system is switched off, it will restart with the function deactivated.

An hour after activation, the function will be deactivated automatically.

### Management via serial port with remote control

Activation takes place by writing the logic resource at the address **H282F**.

The following settings can be applied:

- **0** = disable manual mode
- **1** = activate manual mode, with a 1 h timer from its activation
- **2** = activate manual mode, with reloading of the timer after 1 h and setting of the resource to 1. The desired percentage should be written at the logic resource for address **H2830**.

The manual function controls valve opening even when alarms are present, except if alarms relating to the EEV driver (**E13** and **E14**) are present.

## EEV driver regulation

### Fixed opening with temperature control off

If temperature control is off, a fixed opening percentage can be set for the EEV using parameter **U27**.

This function makes it possible to drain the evaporator.

### Fixed opening at temperature control start-up

When temperature control begins, a fixed EEV opening percentage can be forced via parameter **U64**, in addition to its implementation period via parameter **U65**.

This function makes it possible to deactivate the superheat regulation algorithm for a specific period, allowing the system to "stabilize" and preventing low pressure alarms.

Once the delay **U65** has elapsed, the EEV will be controlled by the superheat algorithm.

**Note:** If **U65**=0, this function is disabled.

### Continuous Modulation function

The "Continuous Modulation" function can be activated via parameter **rE**= 5 or **rE**= 6 and is activated when the counter reaches the temperature **SP1**, or in the case of energy saving, the temperature of the sum (**SP1+OS1**).

When the function is activated the driver regulates valve opening so that the temperature of the counter remains constant and that superheat is greater than the value set with parameter **OLt**.

This function reduces temperature fluctuations and makes it possible to work at a higher saturation temperature, increasing the efficiency of the system.

For further information see section [Continuous modulation](#).

### Superheat filter

This filter is used in systems with rapid changes in suction pressure or thermal load (e.g. in cold rooms), which cause rapid changes in superheat, requiring a "trigger" liquid injection.

This superheat filter (alpha filter) is active within the range (**OLt** - **U61**)...(OLt + **U61**) and uses an **alpha** coefficient =  $[0.9 + (\mathbf{U51}/10000)]$ :

$$\mathbf{TshE} = \mathbf{Current} * (1 - \mathbf{alpha}) + \mathbf{TshE} * \mathbf{alpha}$$

where:

- **TshE**: is the superheat temperature at the filter outlet.
- **Current**: is the current estimation of the superheat value

## Recalculating the reference superheat

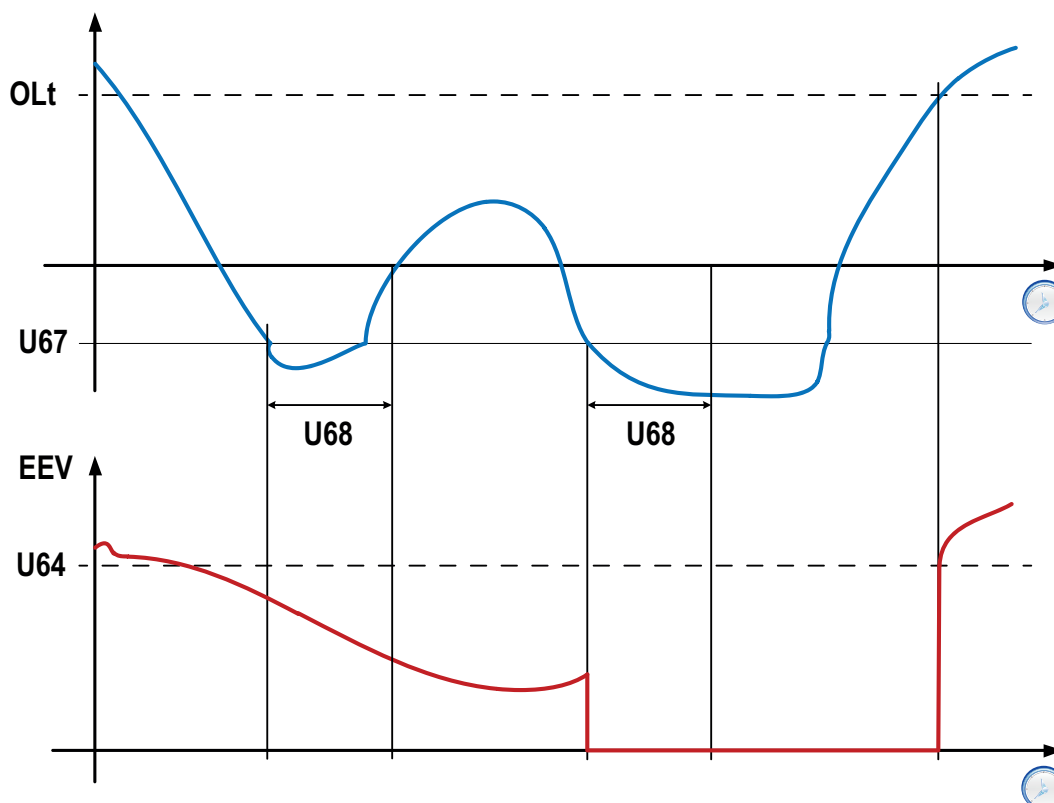
Parameter **U14** can be used to define the minimum value of the band used to calculate the valve implementation percentage (the lower the band value, the higher the reactivity of the system).

## Low superheat threshold

The device can force the valve closure if the superheat is below the threshold **U67** for the time **U68**. The valve will be opened and return under control of the device only when the superheat returns above the **OLt** superheat setpoint and, if **U65**>0, the device will regulate starting from **U64** value (valve opening percentage).

**Note:** The value of parameter **U65** is not significative.

### SUPERHEAT



If **U68** = 0 the function is disabled.

## Custom refrigerants

Up to 6 custom refrigerants can be stored in the memory. They are selected by configuring parameter **Ert** (values from 13 to 18 corresponding to the values from **par\_1** to **par\_6**).

# RTX DOMINO ZERO Tuning

## Introduction

The device managed a 'Classic' regulation and a 'Soft superheat' regulation.

The selection of superheat regulation method is made with parameter **U66**:

- **U66 = 0**: select the 'Classic' regulation
- **U66 = 1**: select the 'Soft superheat' regulation.

The selection of temperature control type is made with parameter **rE**:

- **rE = 1...4**: ON/OFF valve regulation
- **rE = 5...6**: continuous modulation regulation.

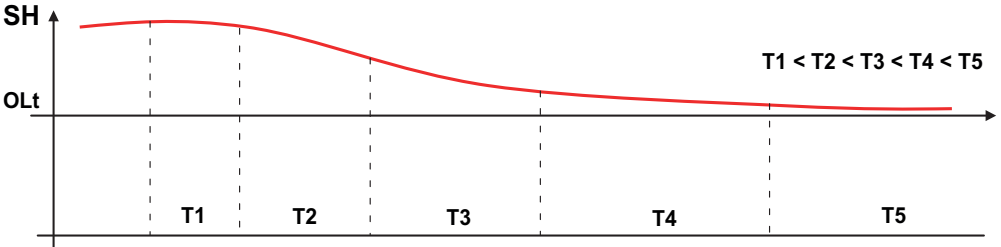
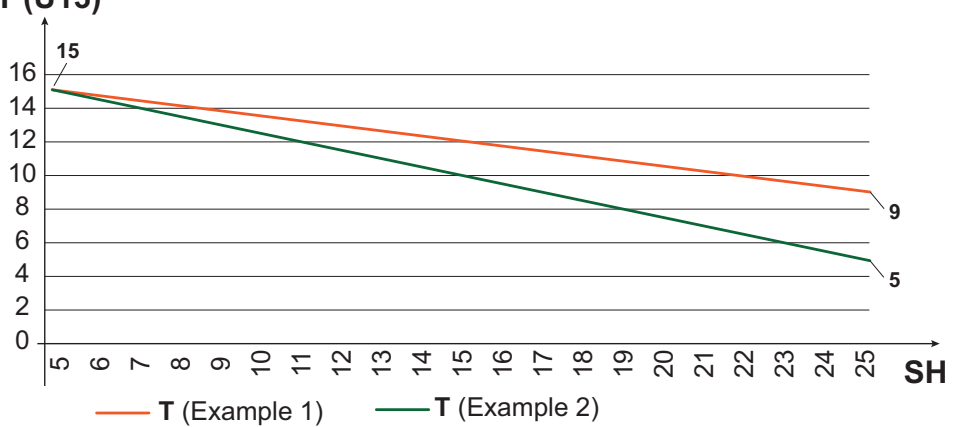
Parameters:

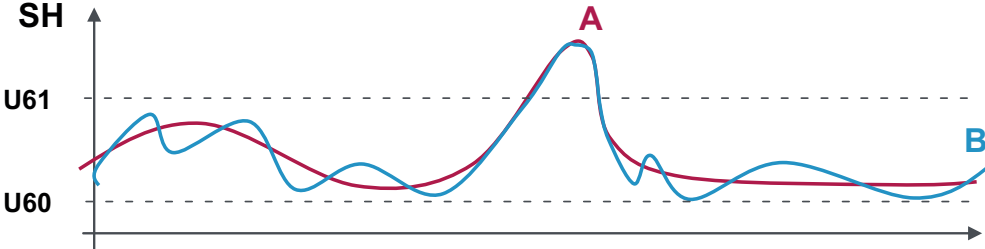
| Parameter            | Description                                        | Method of regulation        |                                             |
|----------------------|----------------------------------------------------|-----------------------------|---------------------------------------------|
|                      |                                                    | Classic                     | Soft superheat                              |
| <b>rE</b>            | Temperature control type.                          | ✓                           | ✓                                           |
| <b>OLt</b>           | Minimum superheat threshold.                       | ✓                           | ✓                                           |
| <b>U13</b>           | Updating frequency for thermodynamic cycle values. | ✓                           | ✗                                           |
| <b>U14</b>           | Gain coefficient. Superheat minimum transit band.  | ✓                           | ✓                                           |
| <b>U20</b>           | Gain coefficient in continuous modulation.         | ✓                           | ✓                                           |
| <b>U51</b>           | Superheat filter calculation coefficient.          | ✓                           | ✗                                           |
| <b>U56</b>           | Dynamic recalculation of refresh time.             | ✓                           | ✗                                           |
| <b>U60 &amp; U61</b> | Minimum/maximum superheat (SH) filter threshold.   | <b>U60 &lt; SH &lt; U61</b> | <b>(OLt+4*U60) &lt; SH &lt; (OLt+4*U61)</b> |
| <b>U66</b>           | Superheat regulation method.                       | <b>U66 = 0</b>              | <b>U66 = 1</b>                              |

## 'Classic' Regulation (U66 = 0)

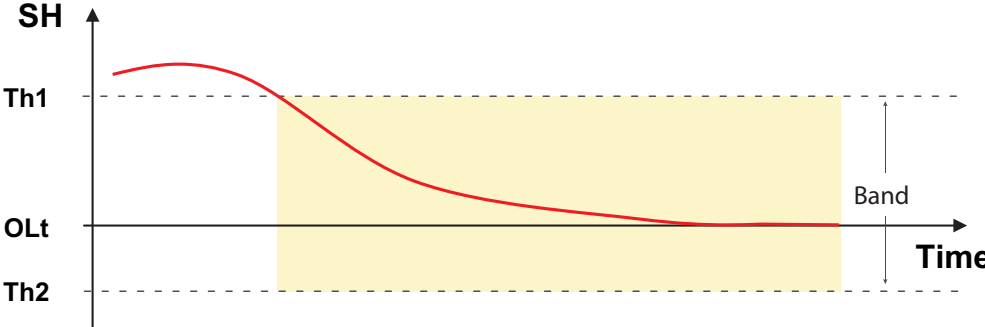
| Parameter  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>U13</b> | <p><b>U13</b> is the refreshes and recalculate time (<b>T</b>), in seconds, of the gain coefficient. Depending on the system thermal inertia value, the <b>U13</b> <sup>(1)</sup> value has to:</p> <ul style="list-style-type: none"> <li>• <b>Increase</b>: when the system has a high thermal inertia or a slowly changes of thermodynamic quantities</li> <li>• <b>Decrease</b>: when the system has a quick changes of thermodynamic quantities or high transients.</li> </ul> <p>(1) The value of <b>U13</b> has to be increased/decreased in accordance with the default value.</p>                                                                                                                                                                                                                                                                                                                                               |
| <b>U14</b> | <p><b>U14</b> is the gain coefficient of the thermodynamic model. The gain of the model value changes according to 1/<b>U14</b> value and:</p> <ul style="list-style-type: none"> <li>• If <b>U14</b> value decreases: <ul style="list-style-type: none"> <li>• the gain of the model increases</li> <li>• the maximum opening range of the valve increases</li> </ul> <p>The effect is that the opening percentage range of the valve increase.</p> <p>The reactivity to variations in suction pressure and superheat increase (quick response)</p> </li> <li>• If <b>U14</b> value increases: <ul style="list-style-type: none"> <li>• the gain of the model decreases</li> <li>• the maximum opening range of the valve decreases</li> </ul> <p>The effect is that the opening percentage range of the valve decrease.</p> <p>The reactivity to variations in suction pressure and superheat decrease (slow response)</p> </li> </ul> |



| Parameter | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| U56       | <p><b>U56</b> enable/disable an automatic dynamic recalculation of the time, in seconds, of the gain coefficient (see <b>U13</b>).</p> <ul style="list-style-type: none"> <li>if <b>U56</b> = 0: the system use <b>U13</b> as fixed value for recalculation</li> <li>if <b>U56</b> ≠ 0: the system perform a dynamic recalculation of the time <b>T</b>, in seconds, starting from <b>U13</b> value.</li> </ul> <p>The time <b>T</b> is recalculated:</p> <ul style="list-style-type: none"> <li>fastly, if superheat move away from <b>OLt</b> value (<b>T</b> value decrease)</li> <li>slowly, if superheat approaching <b>OLt</b> value (<b>T</b> value increase).</li> </ul>  <p>Examples (effect of <b>U56</b> on <b>U13</b>):</p> <ul style="list-style-type: none"> <li><b>Example 1:</b> <b>U13</b> = 15, <b>U56</b> = 5 and <b>OLt</b> = 5.<br/>Effect: <b>T</b> (maximum) = 15 seconds e <b>T</b> (superheat at 25K) = 9 seconds</li> <li><b>Example 2:</b> <b>U13</b> = 15, <b>U56</b> = 3 and <b>OLt</b> = 5.<br/>Effect: <b>T</b> (maximum) = 15 seconds e <b>T</b> (superheat at 25K) = 5 seconds</li> </ul> <p><b>T (U13)</b></p>  <p>The more <b>U56</b> is decreased, the greater the variation of <b>T</b> according to superheat (SH).</p> <p><b>Note:</b> Regardless of the value of <b>U56</b>, the recalculation time <b>T</b> can never be less than 10 % of <b>U13</b>.</p> |
| U20       | <p><b>U20</b> is the gain coefficient of the thermodynamic model in continuous modulation (Same as <b>U14</b>).</p> <p><b>U20</b> is active only if <b>rE</b> = 5 or 6.</p> <p><b>U20</b> perform when the temperature reaches <b>SEt</b> value, as long as the temperature remains within the interval (<b>SEt-diF</b>)...(SEt+diF)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>U51</b>     | <p><b>U51</b> active the superheat filter.</p> <ul style="list-style-type: none"> <li>if <b>U51</b> = 0 the filter is disabled</li> <li>if <b>U51</b> increases, the filter on the superheat progress increase.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>U60/U61</b> | <p><b>U60</b> and <b>U61</b> set the operating band of the superheat filter (band: <b>U60</b> &lt; superheat &lt; <b>U61</b>).</p> <p>If the superheat temperature value is outside the range, the filter is not active. It filters superheat when the system regulation is unstable and it has sudden variations in the suction pressure.</p> <p>If the filter is too high, the system is not reactive enough with a risk of liquid return.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center; margin: 0;"><b>NOTICE</b></p> <p><b>HAZARD OF LIQUID RETURN</b></p> <p>Not use this filter if your system work at a low superheat value.</p> <p><b>Failure to follow these instructions can result in equipment damage.</b></p> </div>  <p><b>Legend:</b> A = Superheat filter; B = Real superheat</p> |

### 'Soft superheat' Regulation (U66 = 1)

| Parameter      | Description                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>U14</b>     | <p><b>U14</b> is the gain coefficient of the thermodynamic model.</p> <p><b>U14</b> increase the speed with which superheat tends to follow <b>OLt</b> value.</p>                                                                                                                                                                                                                            |
| <b>U20</b>     | <p><b>U20</b> is the gain coefficient of the thermodynamic model in continuous modulation.</p>                                                                                                                                                                                                                                                                                               |
| <b>U60/U61</b> | <p><b>U60</b> and <b>U61</b> set the operating band of the superheat filter.</p> <p>Starting from parameter <b>OLt</b> value, the Soft superheat regulation is operating inside the band: <b>Th1...Th2</b>.</p>  <p><b>Legend:</b> Th1 = (OLt + 4*U61); Th2 = (OLt + 4*U60); Banda = operating band.</p> |

## Quick Tips

| Case   | Regulation method | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Case 1 | Classic           | <p><b>Problem:</b> the EEV valve opening percentage limit is too low, despite having superheat far from <b>OLt</b>.<br/> <b>Solution:</b> decrease <b>U14</b> value until the desired opening is obtained.<br/> <b>Example of tuning sequence</b> (proceed by step):</p> <ul style="list-style-type: none"> <li>• set <b>U14</b> = 40 and verify the EEV valve opening percentage</li> <li>• if the EEV valve opening percentage is not acceptable, set <b>U14</b> = 20 and verify the EEV valve opening percentage</li> <li>• continue until the EEV valve opening percentage is acceptable.</li> </ul>                                                                                                                                                                                 |
| Case 2 | Classic           | <p><b>Problem:</b> valve opening/closing, depending on superheat changes, too slow.<br/> <b>Solution:</b> decrease <b>U13</b> value until the opening / closing speed is acceptable.<br/> <b>Example of tuning sequence</b> (proceed by step):</p> <ul style="list-style-type: none"> <li>• set <b>U13</b> = 30 seconds and verify the EEV valve variation speed</li> <li>• if the EEV valve variation speed is still too slow, set <b>U13</b> = 15 seconds and verify the EEV valve variation speed</li> <li>• continue until the EEV valve variation speed is acceptable.</li> </ul> <p>After the <b>U13</b> tuning, set <b>U56</b> to stabilize the system when the superheat is close to <b>OLt</b>.<br/> <b>Note:</b> set <b>U56</b> = 5 (with a range that goes from 0 to 10).</p> |
| Case 3 | Soft superheat    | <p><b>Problem:</b> the superheat settles at an superheat value lower than <b>OLt</b> but the valve continues to remain open<br/> <b>Solution:</b> increase <b>U60</b> value to narrow the smooth adjustment band.<br/> <b>Example of tuning sequence</b> (proceed by step):</p> <ul style="list-style-type: none"> <li>• set <b>U60</b> = -2 and verify if the EEV valve opening percentage is too high despite having superheat SH &lt; <b>OLt</b></li> <li>• if the EEV valve opening percentage is still too high, set <b>U60</b> = -1 and verify if the EEV valve opening percentage with superheat SH &lt; <b>OLt</b> is sufficient</li> <li>• continue until the EEV valve opening percentage is near the closure (0 %) with superheat SH &lt; <b>OLt</b></li> </ul>               |

---

# Local Network

---

## Contents

This section includes the following topics:

- Introduction ..... 97
- Supervision gateway ..... 97
- Temperature probe sharing ..... 98
- Synchronized Defrost ..... 99
- Simultaneous Defrost ..... 100
- Sequential Defrost ..... 102
- Display shared on Link2 ..... 104
- Setpoint value sharing ..... 104
- Sharing commands ..... 105
- Sharing buzzer and alarm silenced command ..... 105

## Introduction

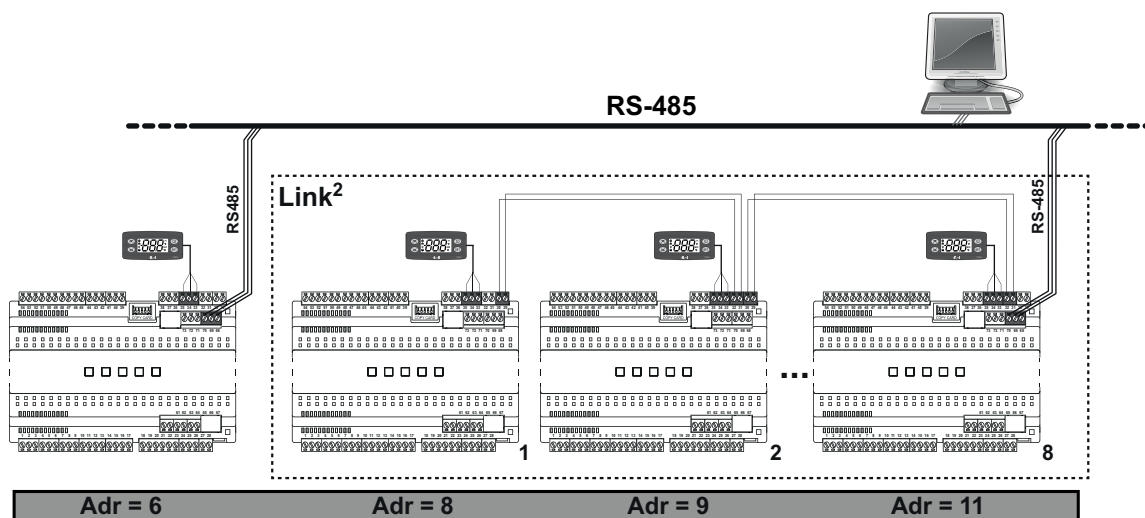
Up to 8 devices can be connected in a Link<sup>2</sup> network and just one device can be connected to the Modbus supervision network.

Link<sup>2</sup> configuration takes place using the same addresses as the supervision system. No limitation is applied to the addresses (they may also be non-contiguous) and it is not necessary to configure a device as the primary.

The supervision system can be connected to just one device belonging to a Link<sup>2</sup> network, which will function as a gateway for the other devices connected to the local network.

Every device will make the information regarding the number of devices connected available.

An example of Link<sup>2</sup> + Supervision network connection is as follows:



## Supervision gateway

The RS-485 supervision line can be connected to any of the boards in the Link<sup>2</sup> network. The latter will automatically take steps to “direct” communications to other boards.

The RS485 network does not require any specific configuration for addresses as it uses those already set for supervision of the network (parameter **Adr**).

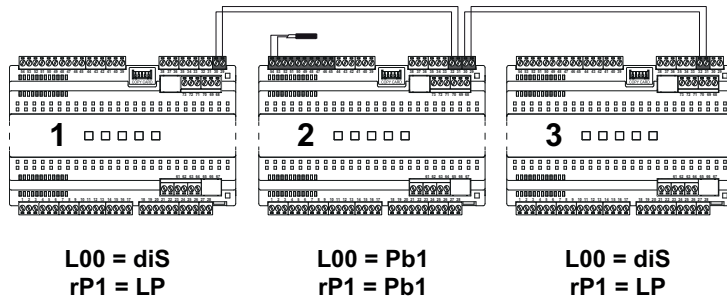
## Temperature probe sharing

The Link<sup>2</sup> network can be used to share one of the 5 temperature probes (Pb1...Pb5) or the virtual probe.

The **L00** parameter set the temperature probe to share.

### EXAMPLE 1:

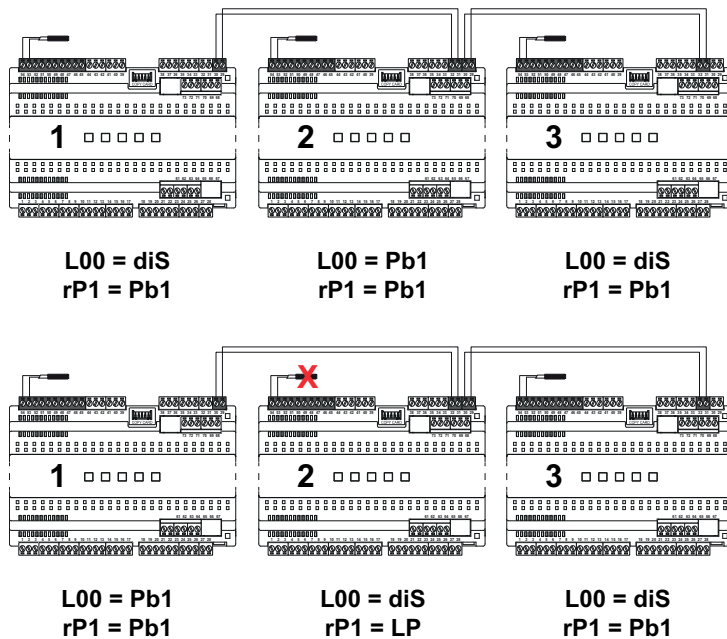
Sharing the regulation probe (in the example, the probe is connected to device 2).



### EXAMPLE 2:

Sharing the probe in a remote counter, where every section has its own regulation probe and one of the regulation probes is not working (in the example, the probe for device 2 which is marked with a red X).

In this case the section in question can be made to regulate using the value read from one of the adjacent sections. This process can be carried out remotely:



**Note:** The sharing of the temperature probe does not apply only to temperature regulation, but also for other regulators (evaporator fans, heating elements, etc.).

# Synchronized Defrost

## Definition

Defrosts can be synchronized in a local Link<sup>2</sup> network with respect to the actual defrost phase. The dripping phases are not taken into account.

Within it there is a primary device (the one connected to the Modbus supervision network) and secondary devices (the other instruments in the local Link<sup>2</sup> network).

The primary device (**L03**≠0) is limited to sending enabling commands for starting defrosts or temperature control without interfering with the protections or delays configured on each individual device (e.g. dripping, etc.).

Once a secondary device has finished its synchronized defrost, it waits to receive enabling for temperature control from the primary device and in the meantime its defrost icon flashes.

If the secondary devices in the local Link<sup>2</sup> network are programmed to accept commands from the primary device, any defrosts and/or functions required by the device will not be activated, with the exception of the following defrosts:

- manual
- from Televis
- following a deep cooling cycle.

Associated defrosts and/or functions will only be carried out by the secondary devices if a “no link” alarm is present (E7).

Operating conditions:

- in a local network, defrost commands and activation of the functions associated with the events are controlled exclusively by the primary device (if the secondary devices are programmed to do so)
- if there is no communication, every element in the network works individually for the cooling chain.

A safety mechanism can be set on secondary devices that locally forces a defrost if they do not receive a defrost command from the primary device within the timeout period **dit** (with **dit**≠0). The timeout is reset at every defrost.

**Note:** If **dit**=0 this safety mechanism is disabled.

There are two types of defrost, linked to the value of **L03**:

- **L03** = 1: simultaneous defrost
- **L03** = 2: sequential defrost

Parameter **L04** can be used to indicate whether, once defrost is complete, the device waits for all the others to finish before being able to reactivate regulation.

This means there is still a timeout that forces reactivation of regulation once a time period set with **L10** elapses (e.g. the Link<sup>2</sup> network line is interrupted while a defrost is in progress).

## Simultaneous Defrost

In a Link<sup>2</sup> network it is possible to activate defrosts simultaneously, coordinated by the nominated primary device, by setting **L03=1**.

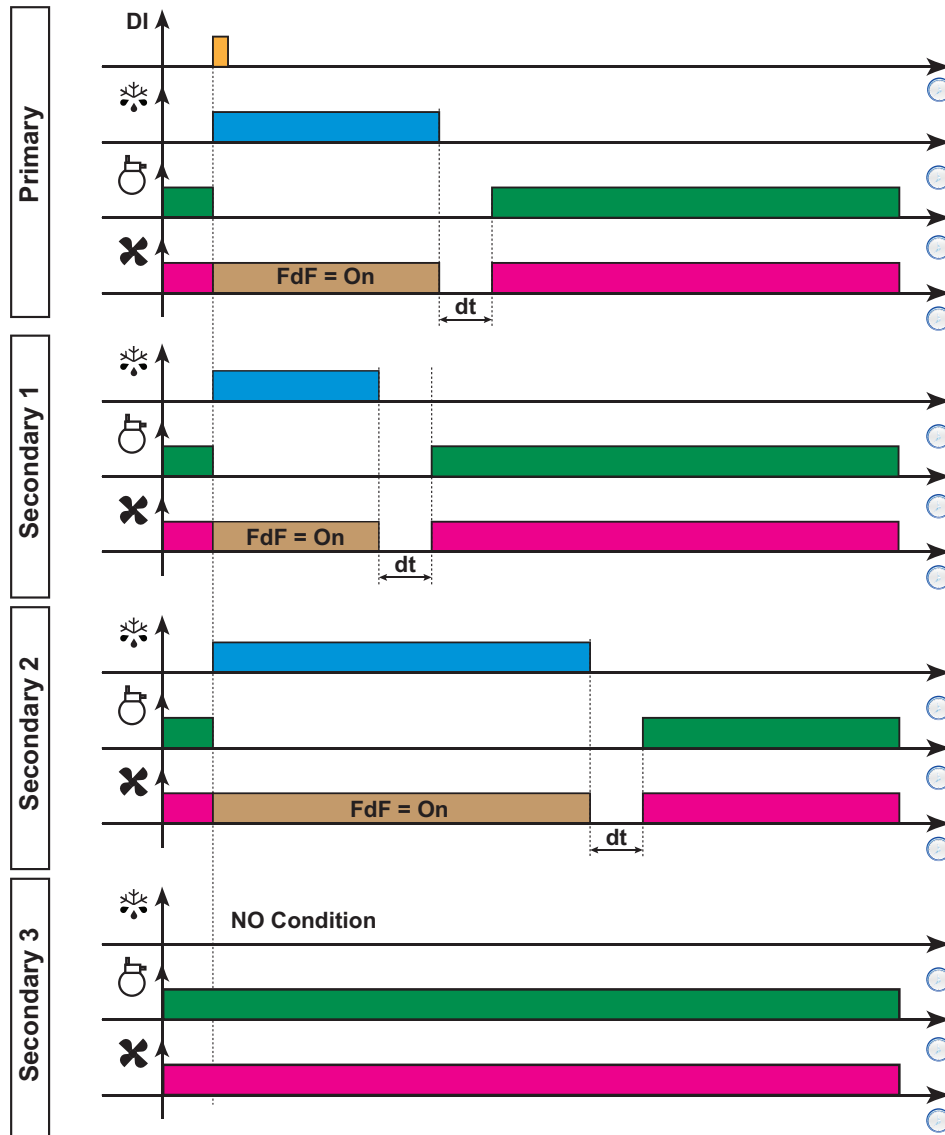
The primary device will send a defrost request to all devices defined as secondary devices simultaneously.

At the end of the defrost, temperature control will be activated based on parameter **L04**:

- if **L04=ind** it will resume after every defrost and corresponding period **dt** has ended
- if **L04=dEP** it will resume after all defrosts and corresponding periods **dt** have ended.

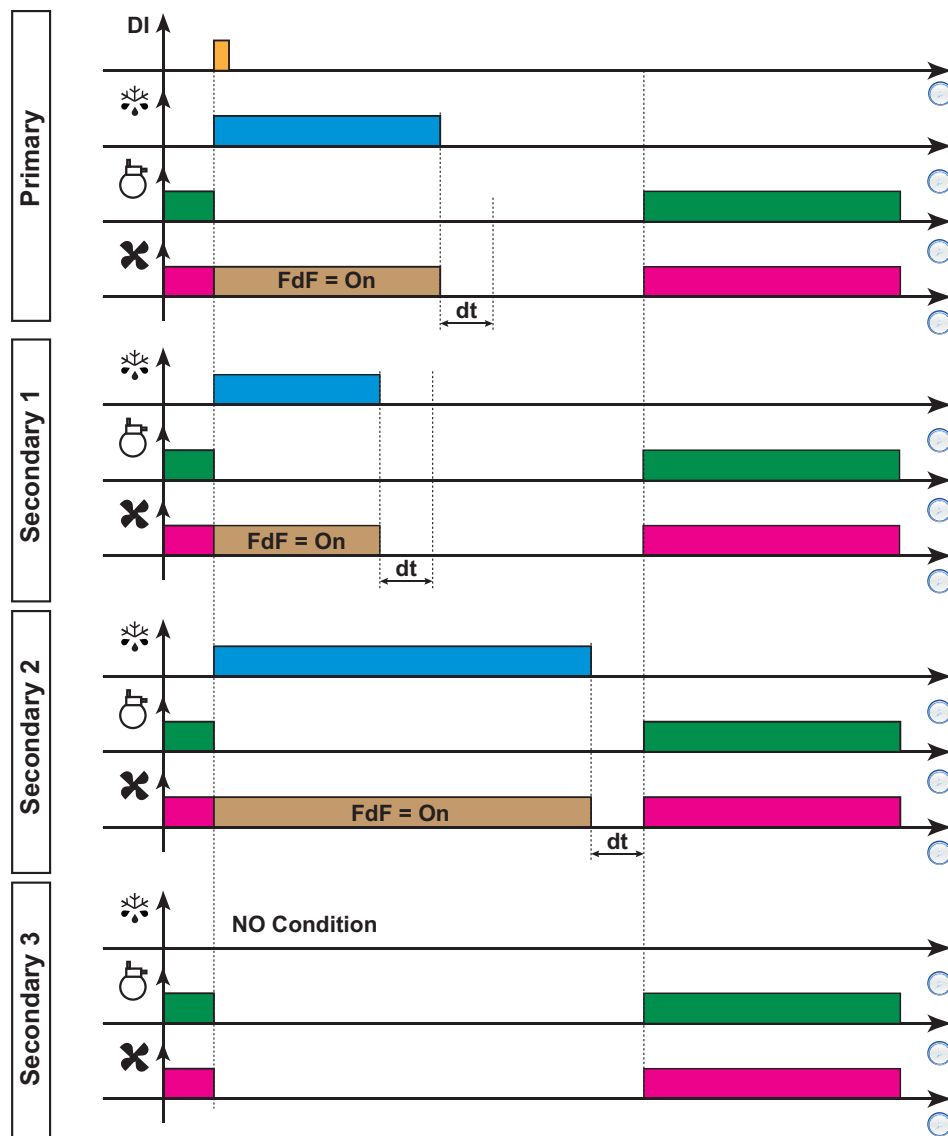
### Operating diagrams

Independent simultaneous defrost (L04 = ind)





## Dependent simultaneous defrost (L04 = dEP)



## Legend:

- DI = Digital Input
- ❄ = Defrost
- 🌀 = Compressor
- ✖ = Fans
- **NO Condition** = The conditions for defrosting are not met
- **Primary** = Primary device
- **Secondary** = Secondary device

## Sequential Defrost

In a Link<sup>2</sup> network it is possible to activate defrosts sequentially, coordinated by the nominated primary device, by setting **L03=2**.

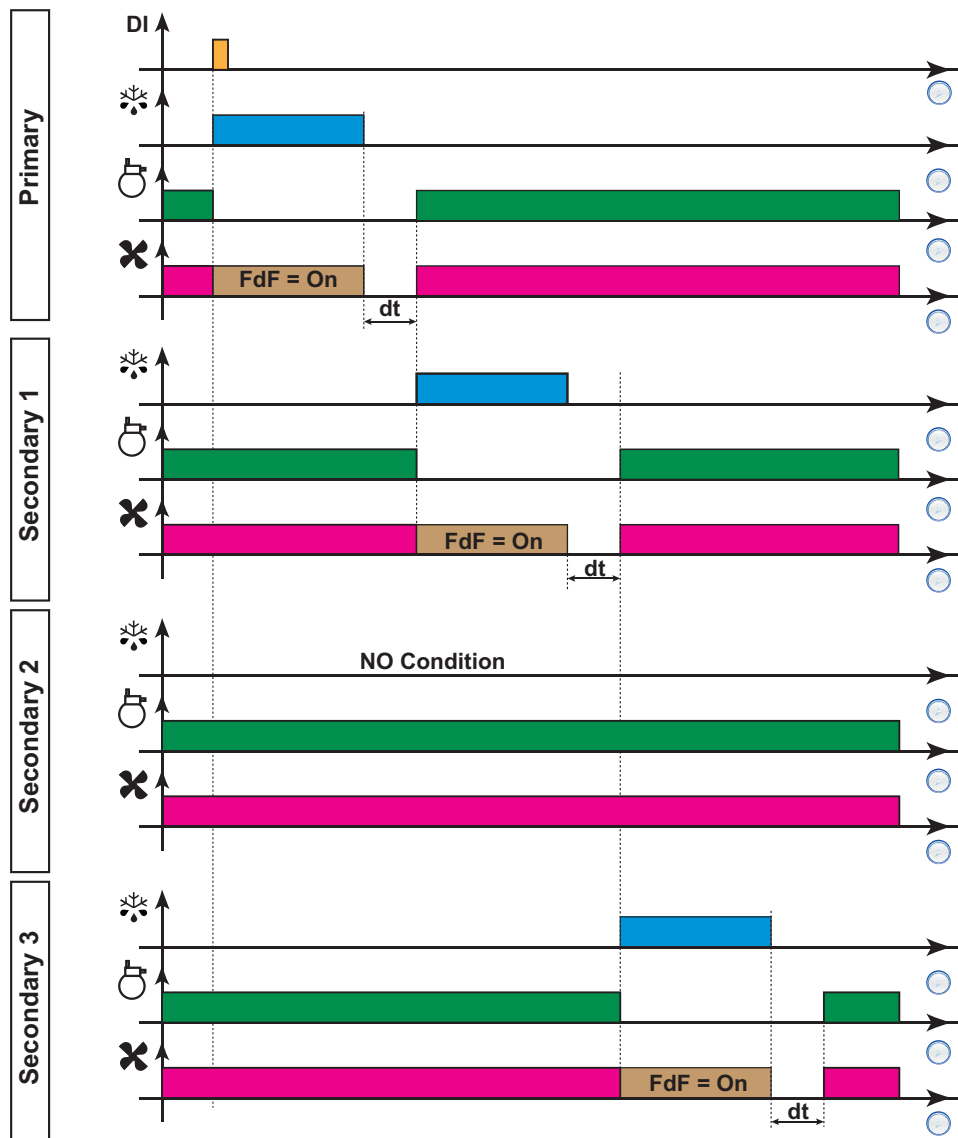
The primary device will send a sequential defrost request to all devices defined as secondary device. The defrosting order depends on the sequence in which the devices were recognized at the last power-on. The sequence may vary.

At the end of the defrost, temperature control will be activated based on parameter **L04**:

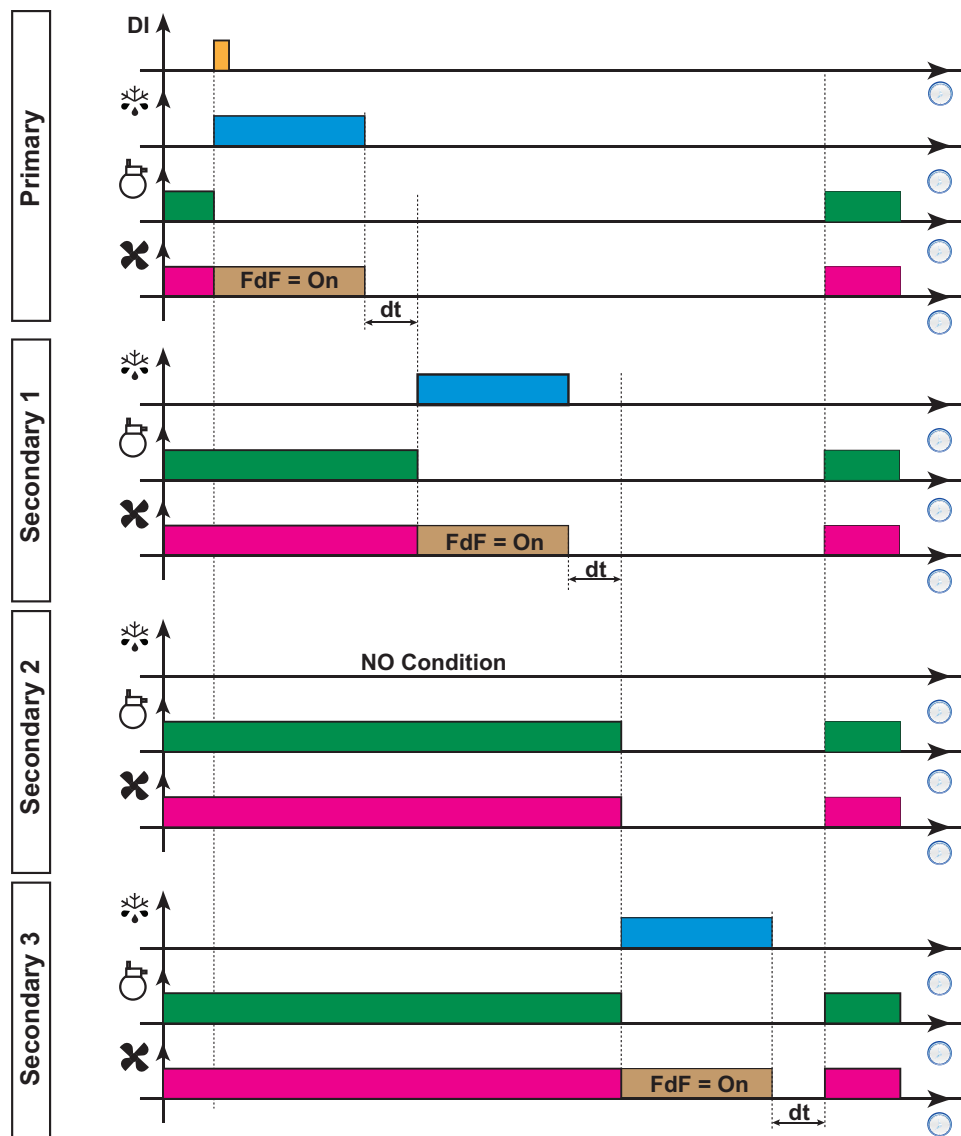
- if **L04=ind** it will resume after every defrost and corresponding period **dt** has ended
- if **L04=dEP** it will resume after all defrosts and corresponding periods **dt** have ended.

### Operating diagrams

Independent sequential defrost (**L04 = ind**)



## Dependent sequential defrost (L04 = dEP)



## Legend:

- **DI** = Digital Input
- ❄️ = Defrost
- 🌀 = Compressor
- ✖️ = Fans
- **NO Condition** = The conditions for defrosting are not met
- **Primary** = Primary device
- **Secondary** = Secondary device

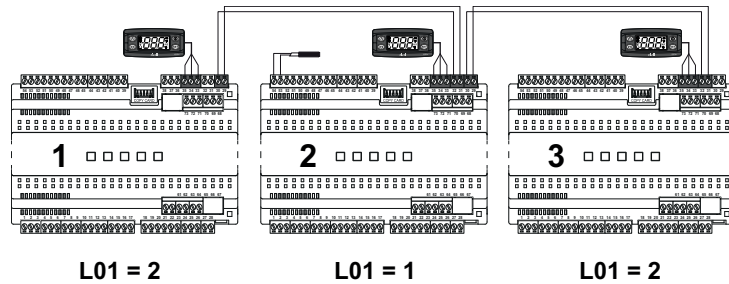
## Display shared on Link<sup>2</sup>

To ensure that all terminals for the remote counter display the same value, the display of a certain device can be shared via the Link<sup>2</sup> network.

### EXAMPLE:

In the example, all terminals will display the value of device 2.

Devices no.1 and no.3 will display the value of the probe fitted on device 2, which was selected via parameter **ddd**.

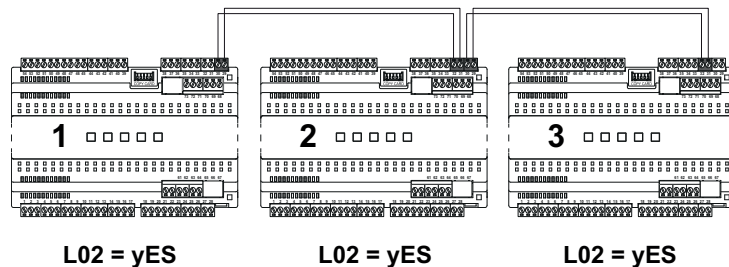


### Notes:

- If device 2 (which is sharing its value with the local network) has an active alarm indication on the display (e.g. probe alarm), this is not shared with devices 1 and 3
- If device 2 shares the value of a probe that is not working, the other devices will display the value selected by local parameter **ddd**
- If device 1 and/or device 3 have additional alarm signals (e.g. local probe alarms), these are only displayed locally
- If device 1 and/or device 3 do not receive the probe value from device 2 due to a lack of signal in the Link<sup>2</sup> network, they will display the value selected by local parameter **ddd**.

## Setpoint value sharing

The Link<sup>2</sup> network can be used to share regulation setpoint **SP1** between all boards. If the setpoint is changed on any of the boards in the Link<sup>2</sup> network, all the other boards in the local Link<sup>2</sup> network will be updated automatically (if **L02=yES**).



**Note:** When parameter **L02=yES**, if the value of a setpoint is changed on any of the devices, that value will be propagated to all other devices in the network. If one of the devices is disconnected from the network or communication is lost, after the setpoint value is changed it will use the new value set.

## Sharing commands

The Link<sup>2</sup> local network can be used to share the following commands:

- Stand-By
- Lights
- AUX
- Energy Saving
- Buzzer
- Alarm silenced command

(See parameters **L00** ... **L15** in the folder Lin)

## Sharing buzzer and alarm silenced command

The Link<sup>2</sup> local network can be used to share the buzzer and the alarm silenced command.

The parameter **L15** sets the device functioning mode and how to share buzzer and alarm silenced command via Link<sup>2</sup>:

- **0** = function disabled
- **1** = main board
- **2** = remote board (shares buzzer and alarm silenced command with main board)

The parameter **L15** can be used to manage the cumulative alarms status of all remote devices connected to the 'main board'.

This management shares:

- alarm icon status
- buzzer status
- alarm relay status

If **L15** = 1 and at least one of the 'remote board' has an active alarm, the display of the 'main board' shows the label **LnA** alternatively to the main display and the alarm is added to folder **ALr**.

If the device is set as 'main board', it activates buzzer and alarm icon for local alarms and received remote alarms.

---

# Defrost

---

## Contents

This section includes the following topics:

- Defrost/Dripping ..... 107
- Display and alarm operation ..... 108
- Automatic Defrost ..... 109
- Manual defrost ..... 110
- RTC Defrost ..... 112
- Electric heater defrost ..... 114
- Inversion defrost ..... 116
- Hot gas defrost for plug-in systems ..... 118
- Hot gas defrost for systems with remote group ..... 119
- Modulating electric heater defrost: Smart Defrost ..... 120
- Dual evaporator defrost ..... 121

## Defrost/Dripping

### Activation

Defrosting removes ice from the surface of the evaporator.

If **dt** ≠ 0, once defrost is complete, a dripping cycle takes place to prevent the water left on the evaporator from freezing again.

Defrost is activated:

- automatically (depending on the mode selected with **dCt**) from:
  - compressor run time (Digifrost)
  - device run time
  - compressor stop
  - RTC (if the RTC is not working device run time is used instead)
  - by temperature: when the evaporator temperature is lower than the defrost end setpoint **dSS** for a time period **dit** (not applicable for dual evaporator systems).
- press and hold a key (configured with **H3x** = 1)
- digital input (**DI**) (only if **H1x** = ±1)
- using a Supervisor, via Modbus command (serial)
- via Link2 network

To select the defrost type, set parameter **dtY** (defrost type).

Defrost takes place due to the evaporator heating up, in one of the following ways:

| dtY value | Defrost mode                                      |
|-----------|---------------------------------------------------|
| 0         | Electric heater defrost                           |
| 1         | Inversion defrost                                 |
| 2         | Hot gas defrost for plug-in systems               |
| 3         | Hot gas defrost for systems with remote group     |
| 4         | Modulated electric heater defrost (Smart Defrost) |

### Operating conditions

Defrost does NOT start automatically and the display will flash three times if:

- a manual defrost is already underway.
- the defrost activation timer has elapsed and the temperature of the first evaporator is higher than the defrost end setpoint **dS1** (**dS2** for defrost on the second evaporator), in which case a new timer count will begin.

Defrost can take place in the ways listed below:

| Method                  | Conditions                                                                                                                                                                                                                                                                   |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device switch-on        | if parameter <b>dPO</b> =1 (defrost at start-up)                                                                                                                                                                                                                             |
| Time intervals          | every time the defrost time interval <b>dit</b> elapses (if <b>dit</b> >0).                                                                                                                                                                                                  |
| Manually (via key)      | press and hold a key for at least 5 seconds if enabled ( <b>H3x</b> =1). If <b>OdO</b> ≠0, the cycle does not begin, the request is rejected and the display will flash three times to indicate that defrosting is not possible.                                             |
| External request via DI | By activating a suitably configured DI ( <b>H1x</b> =1). Activation via DI observes the automatic cycle protections. If <b>OdO</b> ≠0, the cycle does not begin, the request is rejected and the display will flash three times to indicate that defrosting is not possible. |

### Setting the dripping interval

To activate dripping at the end of the defrost cycle, set parameter **dt** ≠ 0. During dripping, the fans are switched off even if **Fdt** < **dt**.

### Parameters

| Parameter  | Description                                                   |
|------------|---------------------------------------------------------------|
| <b>dS1</b> | Temperature value set for the end of defrost on evaporator 1. |
| <b>dS2</b> | Temperature value set for the end of defrost on evaporator 2. |
| <b>Fdt</b> | Fan activation delay after a defrost.                         |
| <b>dt</b>  | Dripping duration.                                            |

## Display and alarm operation

### Alarm operation during defrost

You can activate an alarm for defrost ending due to timeout, by setting parameter **dAt** = y (see alarm **Ad2** in the Alarms and indications section).

In the event of a regulation probe error, defrosts will still take place and, during defrost, the temperature alarm associated with the probe error will be excluded.

### Displayed values

By setting parameter **ddL**, you can choose the values displayed during the defrost phase until the end of dripping time.

The value shown on the display may be configured in one of the following ways:

- **ddL** = 0: display the temperature read by the regulation probe
- **ddL** = 1: display the temperature read by the regulation probe at the start of defrost
- **ddL** = 2: display (steadily) the label **dEF** (defrost)

### Unlocking the display

The display can be unlocked in one of the following ways:

- on reaching the setpoint and after dripping
- on reaching the display unlock timeout value, defined by parameter **Ldd**

### Parameters

| Parameter  | Description                                       |
|------------|---------------------------------------------------|
| <b>dAt</b> | Defrost ended due to timeout alarm indication.    |
| <b>ddL</b> | Display mode during defrosting.                   |
| <b>Ldd</b> | Display unlock timeout value - label <b>dEF</b> . |



# Automatic Defrost

## Introduction

The defrost cycle begins at set intervals.

**Note:** To stop automatic defrosts from taking place, set **dit**=0.

## Operating conditions

If **dit**>0, defrosts will take place at fixed intervals as per **dit** and interval time counting will be calculated as follows:

| Par.       | Value | UM  | Description                                   | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|-------|-----|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>dCt</b> | 0     | num | Defrost disabled                              | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|            | 1     | num | Compressor running time --- DIGIFROST® method | The count is active only when the compressor is on. When the defrost interval elapses a new count begins and a defrost cycle starts if the conditions for doing so are met.<br><b>Note:</b> the compressor running time is counted independently of the evaporator temperature. If the evaporator probe is missing or not working, the count will still be active in the compressor running period.                                                                                                                            |
|            | 2     | num | Device running time                           | The defrost interval count is always active when the device is on and starts at every power-on.<br>When the defrost interval ( <b>dit</b> ) elapses, a defrost cycle starts if the conditions for doing so are met, along with the count for a new defrost interval.                                                                                                                                                                                                                                                           |
|            | 3     | num | Compressor stop                               | Each time the compressor stops, a defrosting cycle is performed in the mode established by parameter <b>dtv</b> .                                                                                                                                                                                                                                                                                                                                                                                                              |
|            | 4     | num | RTC (clock)                                   | The clock can be used to set: <ul style="list-style-type: none"> <li>defrost schedules (6 bands for weekdays and 6 bands for weekends/holidays)</li> <li>regular defrost (every n days)</li> <li>daily events (1 event for weekdays and 1 event for weekends/holidays)</li> </ul> Time band and regular defrosts work in a mutually exclusive manner (they do not work at the same time). If defrost using RTC is activated and the clock is not working, defrost will run according to <b>dit</b> (as long as <b>dit</b> ≠0). |
|            | 5     | num | Temperature                                   | The defrost is activated when the evaporator temperature drops below the threshold <b>dSS</b> . If probe <b>dp1</b> is not working, defrost takes place on the basis of interval <b>dit</b> .                                                                                                                                                                                                                                                                                                                                  |

Defrost does NOT start automatically and the display will flash three times if:

- a manual defrost is already underway.
- the defrost activation timer has elapsed and the temperature of the first evaporator is higher than the defrost end setpoint **ds1** (**ds2** for defrost on the second evaporator), in which case a new timer count will begin.

## Manual defrost

### Introduction

The Manual Defrost function can be activated in one of the following ways:

- press and hold a key (configured with **H3x** = 1)
- digital input (**DI**) (only if **H11** =  $\pm 4$ )
- using a Supervisor, via Modbus command (serial)

**Note:** if the **OdO** count is in progress, the defrost cycle does not begin, the request is rejected and the display will flash three times to indicate that defrosting is not possible.

### Activation via key

The device enters defrost after you press and hold a key only if **H3x**=1.

The defrost interval count proceeds as described in Automatic defrost, where time period **dE1** is not reset but instead continues.

Defrost does NOT start automatically and the display will flash three times if:

- a manual defrost is already underway.
- the defrost activation timer has elapsed and the temperature of the first evaporator is higher than the defrost end setpoint **dS1** (**dS2** for defrost on the second evaporator), in which case a new timer count will begin.

Defrost is always enabled apart from when **dit**=0.

### Activation via Digital Input

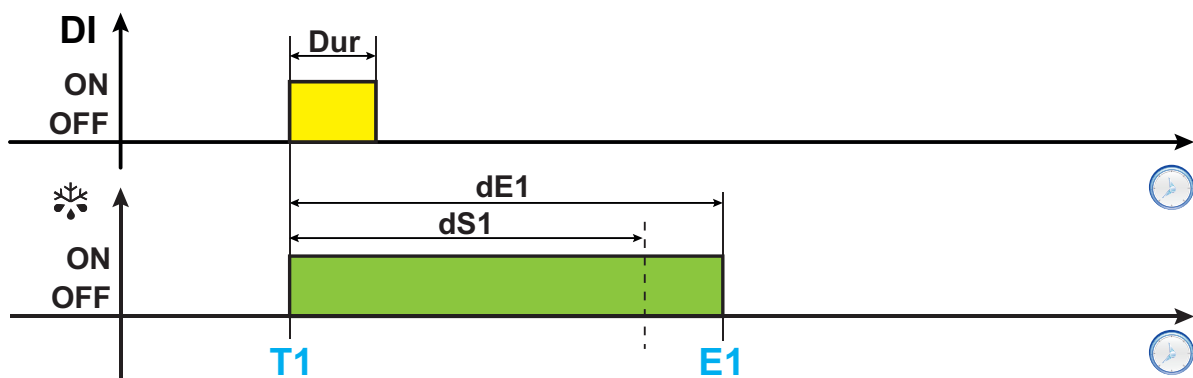
The device enters defrost when a Digital Input is activated only if **H11**=  $\pm 4$ .

**Note:** defrost activation takes place upon closure ( $H11 > 0$ ) or opening ( $H11 < 0$ ) of the digital input DI (if activated). You can only activate a defrost, not end an active one. Any defrost or dripping cycle in progress and the defrost or dripping time cannot be suspended.

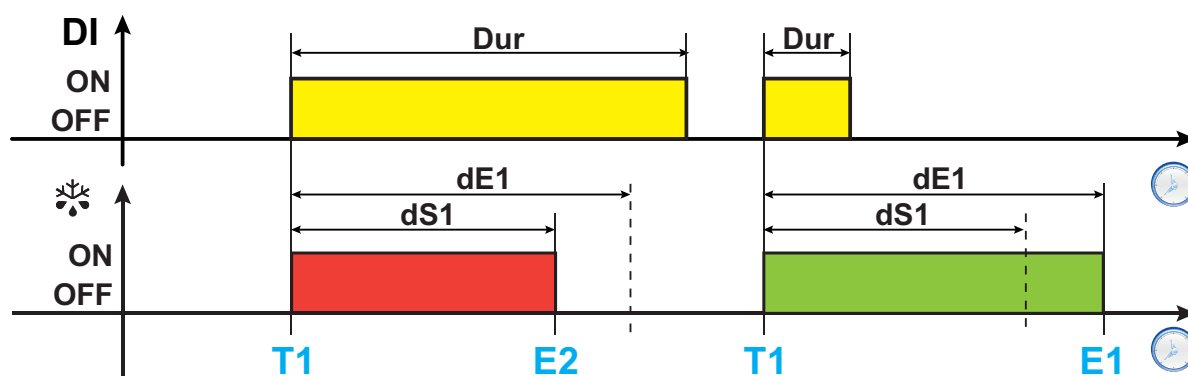
**Note:** with **dS1** the defrost end time due to reaching the Setpoint temperature is indicated and with **dE1** the defrost ends due to timeout is indicated.

### Regulation examples

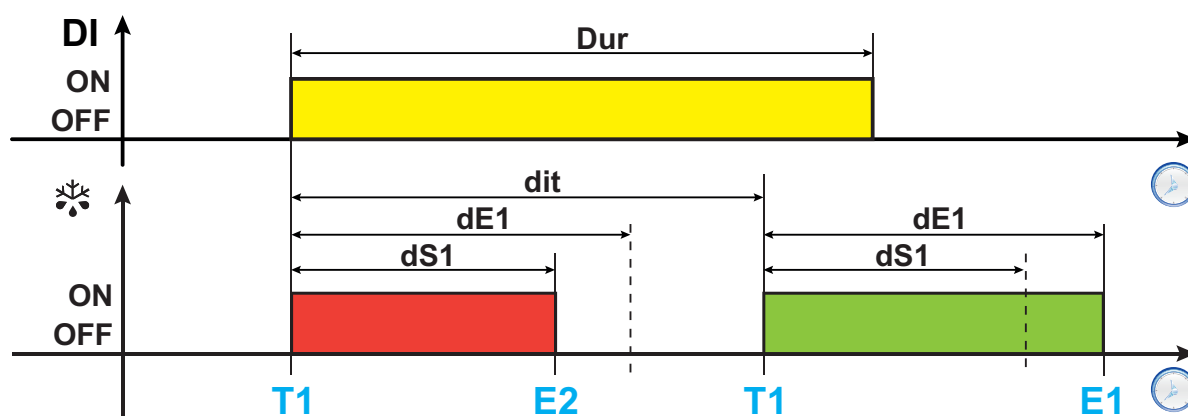
Example 1 (**H11** = 4):



Example 2 (H11 = 4):



Example 3 (H11 = 4):



**Legend:** Dur = DI Duration; DI = Digital Input; ❄ = Defrost; T1 = Defrost request; T2 = Regular defrost request with fixed expiration; E1 = Defrost end due to timeout; E2 = Defrost end due to temperature.

## Parameters

| Parameter | Description                                                                        |
|-----------|------------------------------------------------------------------------------------|
| dit       | Time interval between one defrost and the next.                                    |
| dE1       | Evaporator 1 defrost timeout.                                                      |
| dE2       | Evaporator 2 defrost timeout.                                                      |
| OdO       | Output activation delay time from switching on the device or after a power outage. |
| dS1       | Evaporator 1 defrost end temperature.                                              |
| dS2       | Evaporator 2 defrost end temperature.                                              |
| H1x       | Digital input x/polarity configuration.                                            |
| H3x       | x key configuration.                                                               |

## RTC Defrost

### Weekdays/Weekends and Holidays

The controller can manage up to two weekend/holiday days. They can be selected via parameters **Fd1** and **Fd2**.

For example:

- **EXAMPLE 1:** 1 weekend/holiday day (Monday).  
Set: **Fd1**=1 (Monday), **Fd2**=7 (disabled)
- **EXAMPLE 2:** 2 weekend/holiday days (Wednesday and Sunday).  
Set: **Fd1**=3 (Wednesday) and **Fd2**=0 (Sunday) or **Fd1**=0 (Sunday) and **Fd2**=3 (Wednesday)

### Time band defrost

The controller can manage up to 6 daily defrosts, with two setpoints, one for weekdays and one for weekends/holidays.

In addition to defrost start schedules, you can decide whether to use a defrost end setpoint and timeout that are the same for all defrosts, or to set different values for each event.

- If **Edt**=0, each time band will use the same set defrost end **dS1** (**dS2**) and the same timeout **dE1** (**dE2**).
- If **Edt**=1, a specific setpoint **dS1** and timeout **dE1** can be set for each event.

This means that longer and/or more intensive defrosts can be set during store closure periods (when the thermal load on the counters is lower). This mode is recommended for systems with single evaporator defrosting.

For dual evaporator defrosting, all defrosts use the same **dS2** and **dE2** and these values cannot be customized.

The following structure is used when setting the time:

|            |                                                                                                                                                                 |        |       |              |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|--------------|
| <b>Min</b> | Current schedule: minutes.                                                                                                                                      | 0...59 | min   | <b>H68=y</b> |
| <b>Hur</b> | Current schedule: hours.                                                                                                                                        | 0...23 | hours | <b>H68=y</b> |
| <b>dAY</b> | Current schedule: day.<br><b>0:</b> Sunday; <b>1:</b> Monday; <b>2:</b> Tuesday; <b>3:</b> Wednesday; <b>4:</b> Thursday; <b>5:</b> Friday; <b>6:</b> Saturday. | 0...6  | num   | <b>H68=y</b> |

### Regular defrost

Some counters only require a defrost cycle every two days or longer.

This is possible using the set of parameters relating to regular defrost, where the activation schedule and repeat interval (in days) is set.

### Multiple defrosts

Parameters **Fdn** and **Ffn** can be used to carry out several defrosts at regular intervals over the course of the day, only setting the time band for the first defrost.

This mode is active when:

- For weekday defrosts **Fdn**≠0 and **d1H**≠24
- For weekend/holiday defrosts **FFn**≠0 and **F1H**≠24

For example, if **Fdn**=8 and the first time band is set to 2:00, the following will occur:

- First defrost at 2:00
- Second defrost at 5:00 (2:00 + 24h/Fdn)
- Third defrost at 8:00 (2:00 + 2\*(24h/Fdn)
- ...
- Eighth defrost at 23:00 [2:00 + 7\*(24h/Fdn)]

**Note:** if one or more defrosts are calculated for the day after the first defrost they will be ignored.

## Events

The controller can manage two specific events, one applicable to weekdays and one to weekends/holidays. These events have a start time and a duration.

A typical example would be store closure periods when, through events, it is possible to automatically switch off the light, close the shutters, increase the setpoint and implement other energy saving functions.

This result can be achieved by indicating the time at which the store will close, while the duration of the event is simply the duration of the period of closure.

Depending on the value of parameter **ES**t, each event can carry out one of the following functions:

- **ES**t = 0: Function disabled
- **ES**t = 1: Energy Saving activation (\*)
- **ES**t = 2: Energy Saving activation (\*) and Light off
- **ES**t = 3: Energy Saving activation (\*), Light off and AUX output activation
- **ES**t = 4: Device Stand-by activation
- **ES**t = 5: Energy Saving activation (\*) + Buzzer silencing
- **ES**t = 6: Energy Saving activation (\*) and Light off + Buzzer silencing
- **ES**t = 7: Energy Saving activation (\*), Light off and AUX output activation + Buzzer silencing
- **ES**t = 8: Device Stand-by activation + Buzzer silencing

(\*) for functions associated with Energy Saving, refer to the specific section.

## Parameters

| Parameter   | Description                                                                          |
|-------------|--------------------------------------------------------------------------------------|
| <b>dE1</b>  | Defrost 1 timeout.                                                                   |
| <b>dE2</b>  | Defrost 2 timeout.                                                                   |
| <b>dS1</b>  | Defrost 1 end temperature.                                                           |
| <b>dS2</b>  | Defrost 2 end temperature.                                                           |
| <b>Fd1</b>  | 1st weekend/holiday day.                                                             |
| <b>Fd2</b>  | 2nd weekend/holiday day.                                                             |
| <b>Edt</b>  | Sets whether you want to enter a duration and defrost end temperature for each event |
| <b>Fdn</b>  | Number of multiple defrosts during one weekday.                                      |
| <b>FFn</b>  | Number of multiple defrosts during one weekend/holiday day.                          |
| <b>d1H</b>  | 1st weekday defrost start hour.                                                      |
| <b>F1H</b>  | 1st weekend/holiday defrost start hour.                                              |
| <b>ES</b> t | Type of event activated via RTC.                                                     |

## Electric heater defrost

Electric heater defrost is used in “**LOW TEMPERATURE**” applications and is selected by setting **dt** = 0.

When electric heater defrost is activated:

- The compressor stops
- the relay to which the electric heaters are connected, configured as defrost regulator output, is activated

At the end of defrost, the heaters switch off and the compressor remains inactive for the dripping time set in parameter **dt** (if a value other than zero). At the end of the dripping time, temperature control begins again as normal.

### End of defrost

Defrost ends in the following conditions:

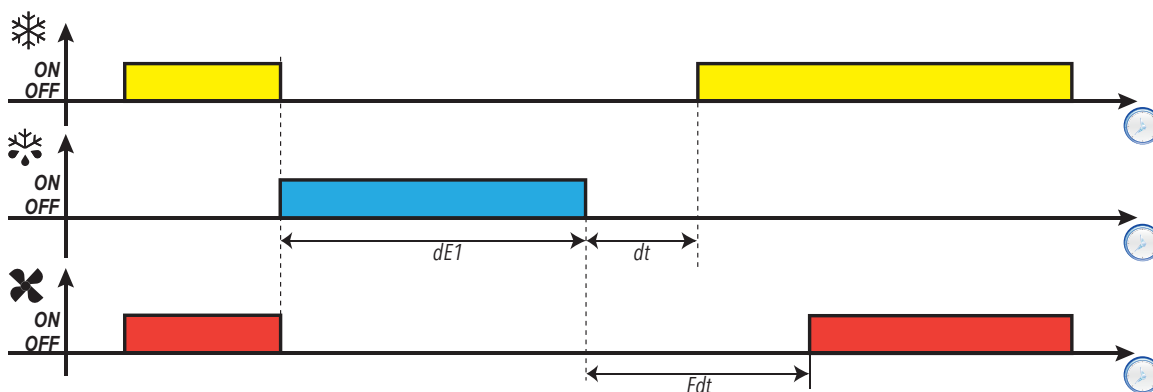
| Condition                                                                                                                                        | Evaporator probe (dP1) | H42 value |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------|
| End of timeout period set using parameter <b>dE1</b> .                                                                                           | Not managed            | 0         |
| Defrost end setpoint set using parameter <b>dS1</b> reached or due to timeout if the setpoint is not reached within the time period <b>dE1</b> . | Managed                | 1         |

#### Notes:

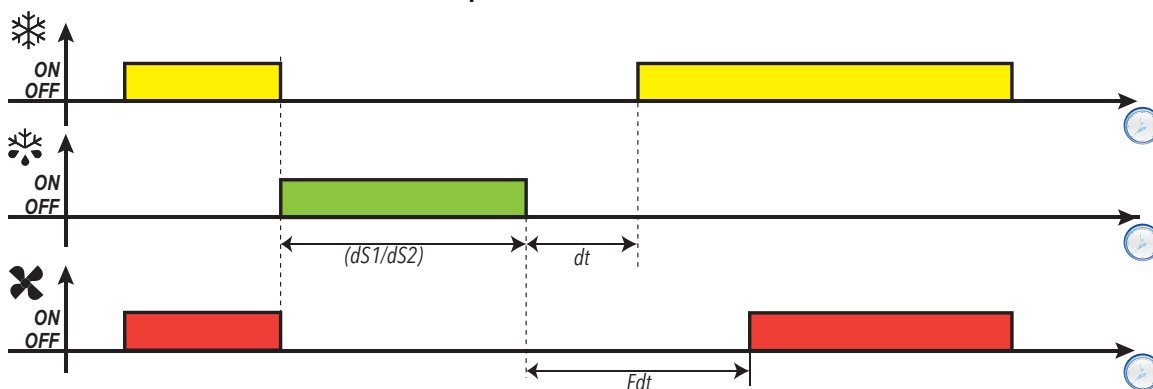
- To end defrost manually, switch the controller off and on again or use the ON/OFF function (Stand-by)
- If **dS1** intervenes before **dEt**, dripping (managed by parameters **dt** and **Fdt**) is activated in correspondence with **dS1**
- If **Fdt** < **dt**, **Fdt** = **dt** is set
- During the defrost the fans are off if **dFd** = OFF, otherwise they follow the other settings for the fan regulator

### Regulation diagram

#### End of electric heater defrost due to timeout



#### End of electric heater defrost due to temperature



## Parameters

| Parameter  | Description                                                          |
|------------|----------------------------------------------------------------------|
| <b>dOn</b> | Compressor relay activation delay time from call.                    |
| <b>dOF</b> | Delay time after compressor relay switch-off and the next switch-on. |
| <b>dbi</b> | Delay time between two compressor switch-ons.                        |
| <b>dtY</b> | Type of defrost.                                                     |
| <b>dEt</b> | Defrost timeout. Determines the maximum duration of the defrost.     |
| <b>dS1</b> | Evaporator 1 defrost end temperature.                                |
| <b>Fdt</b> | Fan activation delay after a defrost.                                |
| <b>dt</b>  | Dripping duration.                                                   |

## Inversion defrost

Cycle inversion defrost is used in “**LOW TEMPERATURE**” applications and is selected by setting **dt** = 1.

When cycle inversion defrost is activated:

- The compressor is always on
- the relay to which the solenoid valve is connected, configured as defrost regulator output, is activated

At the end of defrost the valve relay will be de-energized and the dripping phase set by parameter **dt** will be interrupted (if a value other than zero). The compressor relay reverts to being under the control of the compressor regulator.

## End of defrost

Defrost ends in the following conditions:

| Condition                                                                                                                                        | Evaporator probe (dP1) | H42 value |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------|
| End of timeout period set using parameter <b>dEt</b>                                                                                             | Not managed            | 0         |
| Defrost end setpoint set using parameter <b>dS1</b> reached or due to timeout if the setpoint is not reached within the time period <b>dEt</b> . | Managed                | 1         |

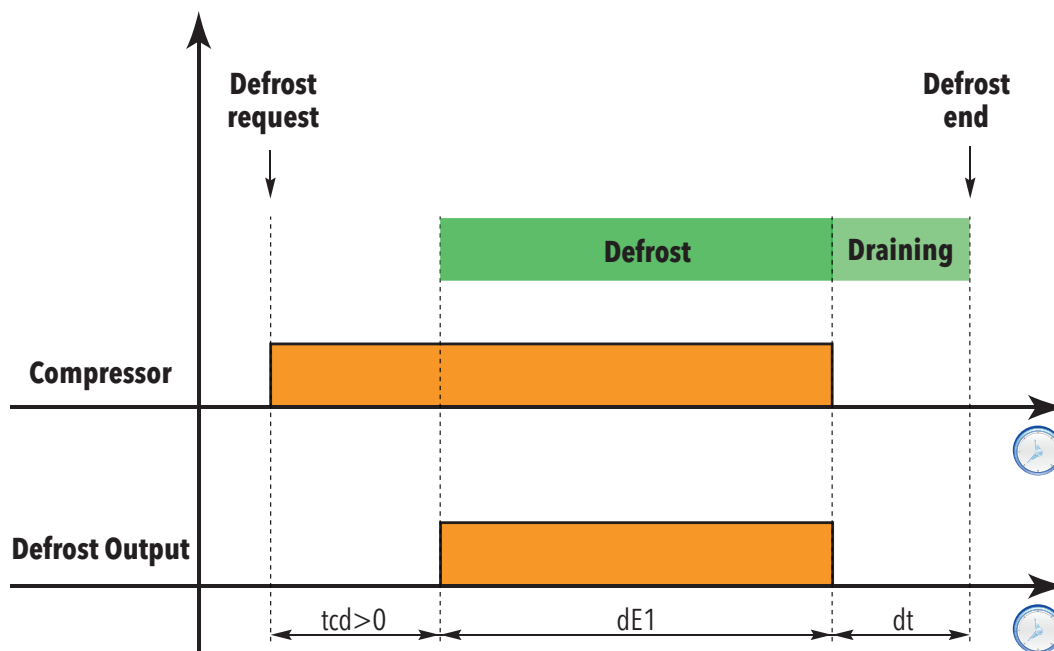
### Notes:

- To end defrost manually, switch the controller off and on again or use the ON/OFF function (Stand-by).
- The compressor safety timings (managed by parameters **dOn**, **dOF** and **dbi**) take priority over defrost
- If **dS1** intervenes before **dEt**, dripping (managed by parameters **dt** and **Fdt**) is activated in correspondence with **dS1**
- If **Fdt** < **dt**, **Fdt** = **dt** is set
- During the defrost the fans are off if **dFd** = OFF, otherwise they follow the other settings for the fan regulator

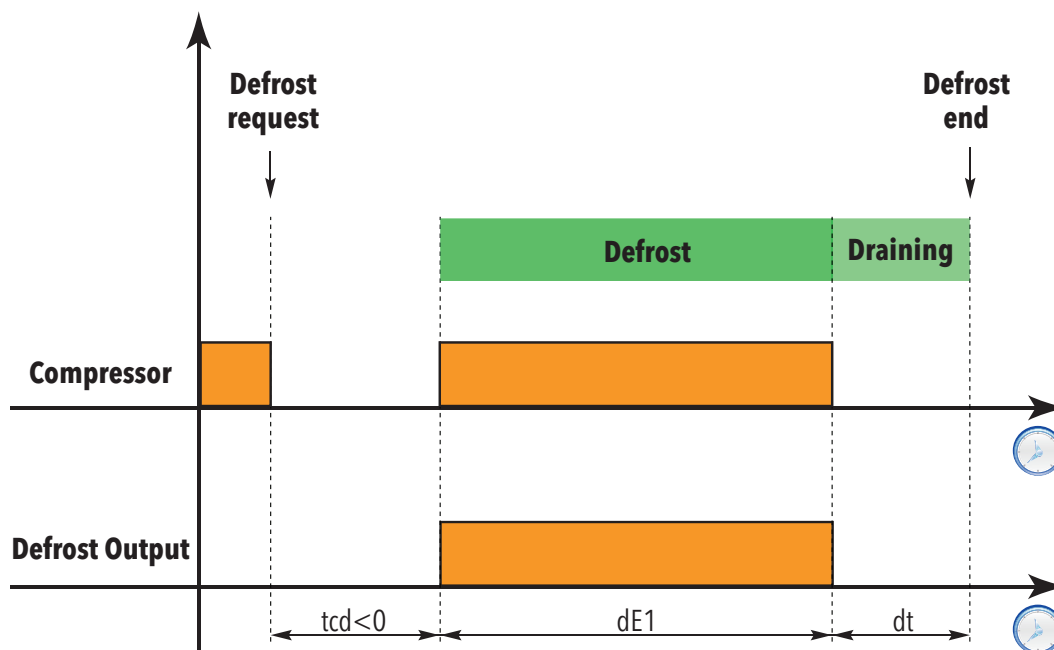


## Regulation diagrams

End of inversion defrost due to timeout, with  $tcd > 0$



End of inversion defrost due to temperature, with  $tcd < 0$



Legend:

- **Defrost Request** = Defrost start request
- **Defrost** = Defrost Period
- **Draining** = Dripping Period
- **Defrost end** = End of defrost
- **Compressor** = Compressor
- **Defrost Output** = Defrost output

## Hot gas defrost for plug-in systems

Hot gas defrost for **PLUG-IN** systems differs from cycle inversion defrosting as the refrigerant must be sufficiently heated before defrost begins; it is selected by setting **dt<sub>y</sub>** = 2.

When hot gas defrost for **PLUG-IN** systems is activated:

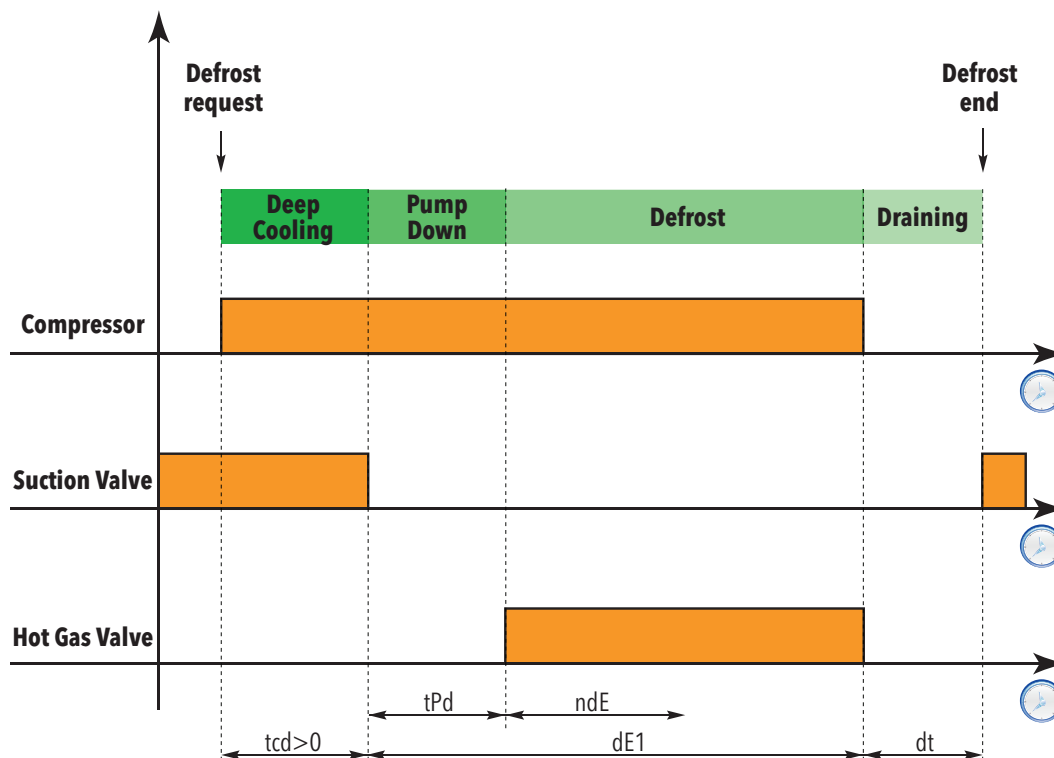
- the EEV output is off (if present and enabled)
- The fans are off

The defrost cycle consists of the following phases (or a sub-group of them):

- **Deep cooling:** gas heating and cold storage in the counter, for a time period **tcd**>0
- **Pump down:** removal of cold gas from inside the evaporator, for a time period **tPd**>0
- **Defrost:** injection of hot gas, for a time period between **ndE** and **dE1**
- **Dripping:** completion phase for the removal of water from the evaporator (for a time period **dt**)

### Regulation diagram

Scenario with **tcd** > 0, **dt<sub>y</sub>** = 2 and **PdC** = 0:



Legend:

- **Defrost Request** = Defrost start request
- **Deep Cooling** = Deep Cooling period
- **Pump Down** = Pump Down period
- **Defrost** = Defrost Period
- **Draining** = Dripping Period
- **Defrost end** = End of defrost
- **Compressor** = Compressor (**H2x** = 1 with **x** = 1...5)
- **Suction Valve** = Suction valve output (**H2x** = 13 with **x** = 1...5)
- **Hot Gas Valve** = Hot gas valve output (**H2x** = 2 with **x** = 1...5)

## Hot gas defrost for systems with remote group

Hot gas defrost for systems with a **REMOTE** group differs from cycle inversion defrosting as the refrigerant must be sufficiently heated before defrost begins; it is selected by setting **dt<sub>y</sub>** = 3.

When hot gas defrost for systems with a **REMOTE** group is activated:

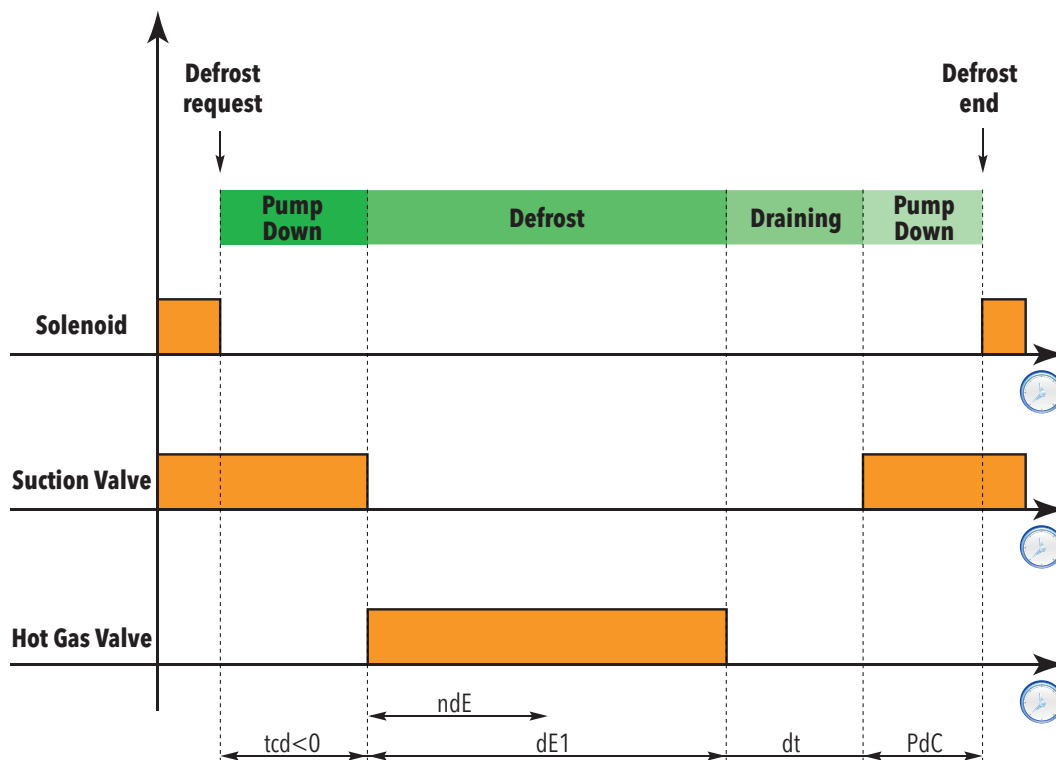
- the EEV output is off (if present and enabled)
- The fans are off

The defrost cycle consists of the following phases (or a sub-group of them):

- **Pump down:** removal of cold gas from inside the evaporator, for a time period **tcd**<0
- **Defrost:** injection of hot gas, for a time period between **ndE** and **dE1**
- **Dripping:** completion phase for the removal of water from the evaporator (for a time period **dt**)
- **Pump down:** removal of cold gas from inside the evaporator, for a time period **PdC**
- **Regulation:** reactivation of the EEV (if necessary)

### Regulation diagram

Scenario with **tcd** < 0, **dt<sub>y</sub>** = 3 and **PdC** ≠ 0:



Legend:

- **Defrost Request** = Defrost start request
- **Pump down** = Pump down period
- **Defrost** = Defrost Period
- **Draining** = Dripping Period
- **Pump down** = Pump down period
- **Defrost end** = End of defrost
- **Solenoid** = Solenoid (**H2x** = 1 with **x** = 1...5)
- **Suction Valve** = Suction valve output (**H2x** = 13 with **x** = 1...5)
- **Hot Gas Valve** = Hot gas valve output (**H2x** = 2 with **x** = 1...5)

## Modulating electric heater defrost: Smart Defrost

This algorithm can be used to optimize defrost by modulating the heating elements and can be selected by setting **dt<sub>y</sub>** = 4.

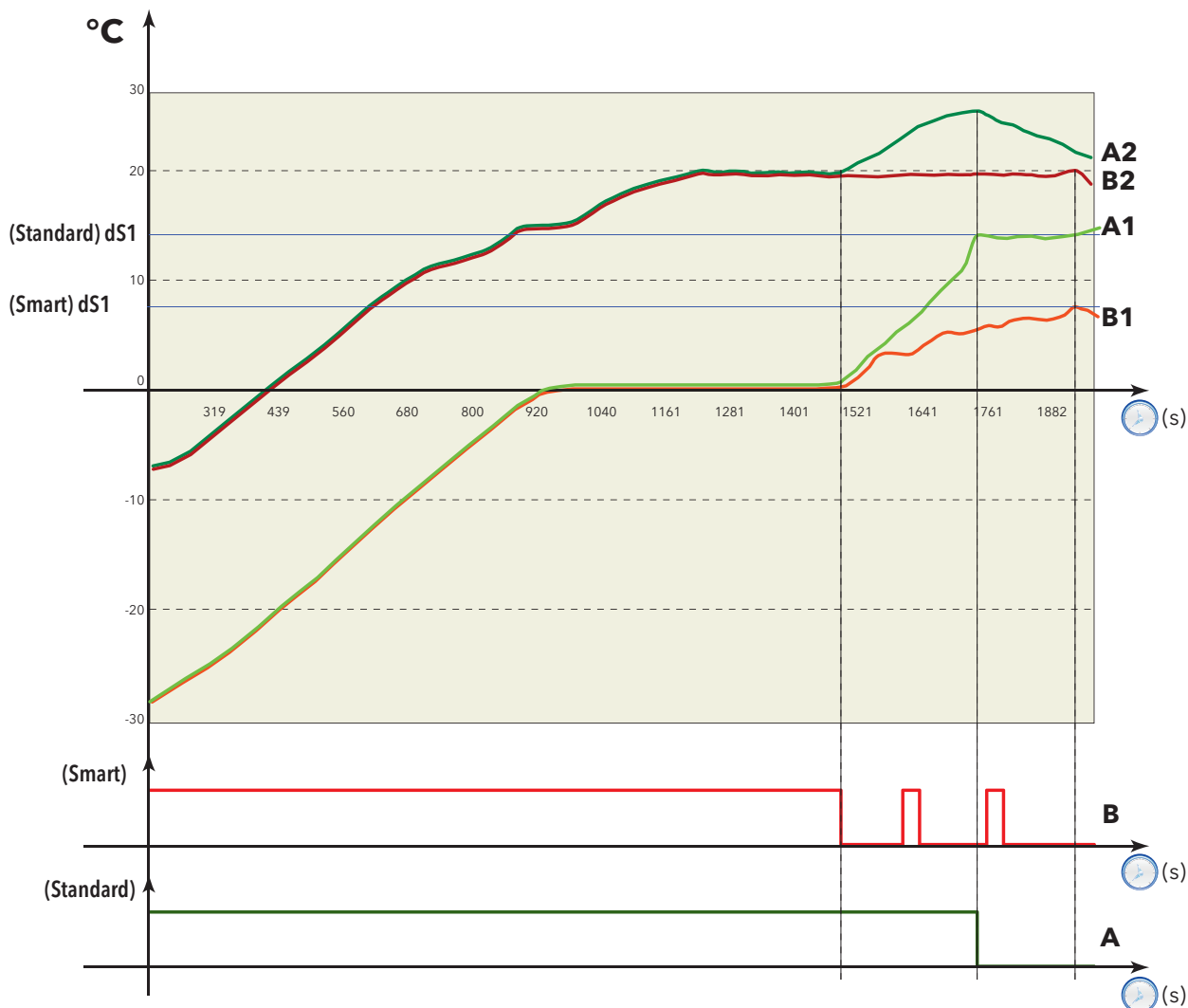
This algorithm makes it possible to reduce the defrost end setpoint, in relation to standard mode, as the controller, by suitably modulating the heaters, is capable of detecting when all the ice has melted and it is therefore possible to end defrost before the timeout **dE1**.

The configuration of this mode is similar to that used for traditional defrost. Set the same timeout; the defrost end setpoint can be reduced.

### Notes:

- This algorithm applies to both single and dual evaporator scenarios
- The function is active if **dt<sub>y</sub>**=4 and ends due to time (**dE1**) or temperature (**dS1**).

### Regulation diagram



| Legend | Curve description                         |
|--------|-------------------------------------------|
| A      | 'Standard' defrost relay activation       |
| A1     | 'Standard' defrost evaporator temperature |
| A2     | 'Standard' defrost counter temperature    |
| B      | 'Smart' defrost relay activation          |
| B1     | 'Smart' defrost evaporator temperature    |
| B2     | 'Smart' defrost counter temperature       |

## Dual evaporator defrost

### Introduction

Dual evaporator defrost is activated with (**dP2** ≠ diS).

In dual evaporator applications, defrost can be optimized by using a probe and an output for each individual evaporator, so as to optimize the heating phase for each individual evaporator, according to actual requirements.

#### Notes:

- This mode is activated if at least two outputs are configured as defrost (evaporator 1 and evaporator 2)
- Each evaporator has its own set of defrost end and timeout values.

### Operation

Conditions for defrost (temperature under the threshold), with two sensors (one per evaporator), can be implemented in one of the following ways

| dFt value | Condition                                                                                                                                                                                                                                                                        |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0         | Evaporator 1 defrost probe ( <b>dP1</b> ) under the threshold <b>dS1</b> .                                                                                                                                                                                                       |
| 1         | At least one evaporator has the conditions for defrosting, i.e.: <ul style="list-style-type: none"> <li>• Evaporator 1 defrost probe (<b>dP1</b>) under the threshold <b>dS1</b> or</li> <li>• Evaporator 2 defrost probe (<b>dP2</b>) under the threshold <b>dS2</b></li> </ul> |
| 2         | Both evaporators have the conditions for defrosting, i.e.: <ul style="list-style-type: none"> <li>• Evaporator 1 defrost probe (<b>dP1</b>) under the threshold <b>dS1</b> and</li> <li>• Evaporator 2 defrost probe (<b>dP2</b>) under the threshold <b>dS2</b></li> </ul>      |

### End of defrost

Defrost end for each individual evaporator occurs when:

- time period **dE1/dE2** has elapsed (timeout)
- temperature **dS1/dS2** has been reached

---

# Regulators

---

## Contents

This section includes the following topics:

|                                                         |     |
|---------------------------------------------------------|-----|
| Regulation .....                                        | 123 |
| Single Thermostat regulation (rE=0) .....               | 124 |
| Dual Thermostat in series regulation (rE=1) .....       | 125 |
| Dual Thermostat in parallel regulation (rE=2) .....     | 126 |
| Two independent generic purpose regulators (rE=4) ..... | 127 |
| Continuous Modulation (rE=5 or 6) .....                 | 128 |
| Compressor .....                                        | 129 |
| Evaporator Fans .....                                   | 133 |
| Modulated Fans .....                                    | 139 |
| Condenser Fans .....                                    | 142 |
| Preheating .....                                        | 143 |
| Energy Saving .....                                     | 144 |
| Deep Cooling Cycle (DCC) .....                          | 145 |
| Anti-sweater heaters (Frame heater) .....               | 147 |
| Auxiliary Output (AUX) .....                            | 150 |
| Auxiliary Output (Light) .....                          | 151 |
| Door control / External alarm .....                     | 152 |
| Stand-by .....                                          | 154 |
| Soft Start .....                                        | 155 |
| Pump down (Pump out) .....                              | 156 |
| Compressor oil heater .....                             | 157 |
| Counter Cleaning Function .....                         | 158 |

# Regulation

## Description

The device allows various regulation methods:

- Single thermostat (**rE**=0)
- Dual thermostat in series (**rE**=1)
- Dual thermostat in parallel (**rE**=2)
- Two independent generic purpose regulators\* (**rE**=4)
- Continuous Modulation (**rE**=5 or 6)

(\*) The second regulator is a generic auxiliary output, not subject to the timings described by parameters **Cit**, **CAt**, **dOn**, **dOF**, **dbi**.

This regulator is independent from the other regulators, except the stand-by function, in which the output is deactivated.

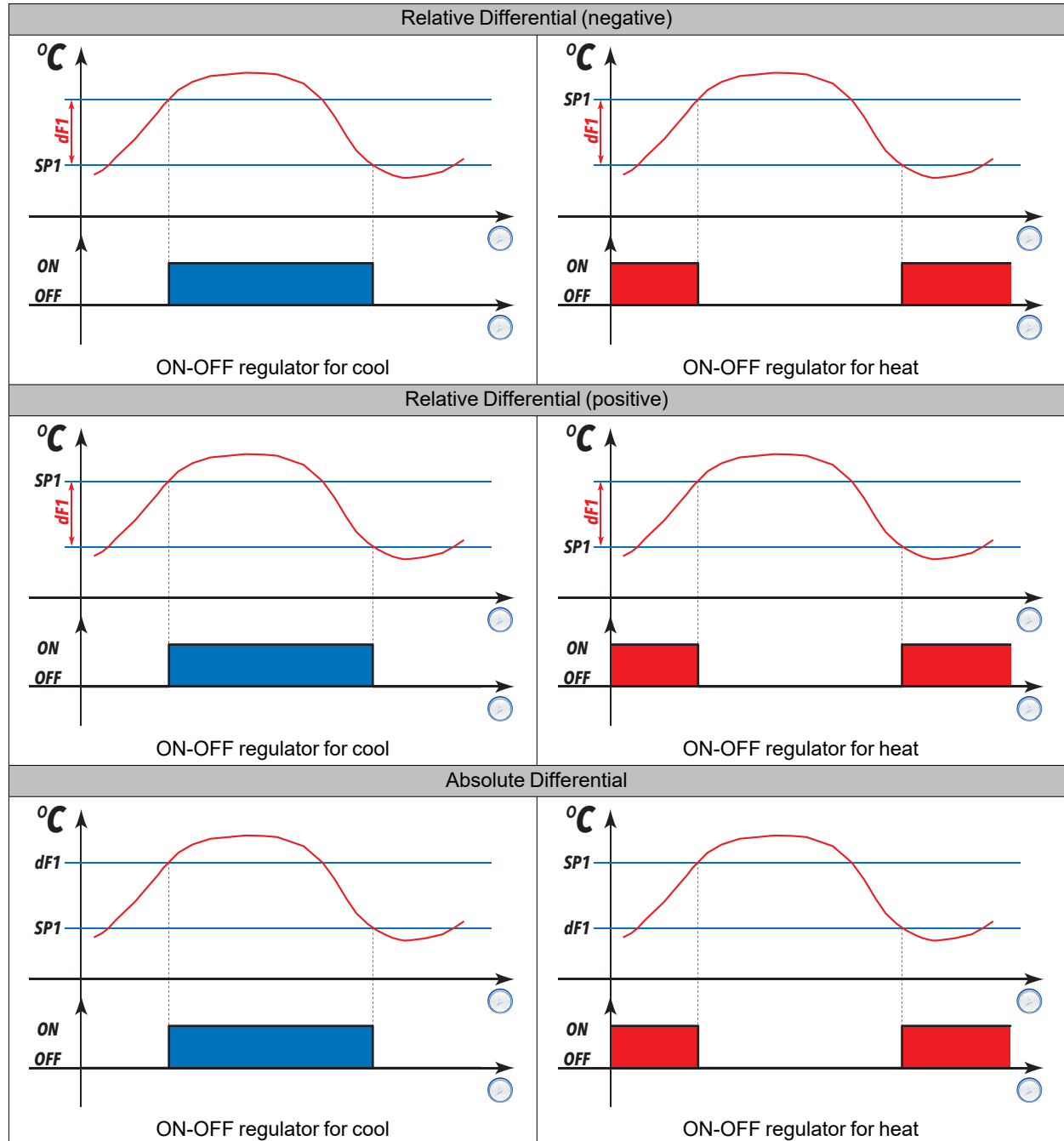
**Note:** when using single thermostat mode, you can also have an auxiliary regulator for applications that can be customized by the user (for example: light sensor management, etc).

## Single Thermostat regulation (rE=0)

The “Single thermostat” regulator ( $rE = 0$ ) is always enabled and can work in heat or cool mode depending on the value of parameter **HC1**.

Regulation is activated by using parameter **rP1** to set the desired probe.

This regulation makes it possible to manage the regulation differential in absolute or relative mode:



The regulator is managed using the following parameters:

- **rP1**: regulation probe 1 setting
- **SP1**: first regulator setpoint / power off setpoint setting (switch ON)
- **dF1**: first regulator differential / power on setpoint setting (switch OFF)
- **Stt**: differential mode setting (Absolute or Relative)
- **HC1**: first regulator heat/cool mode setting

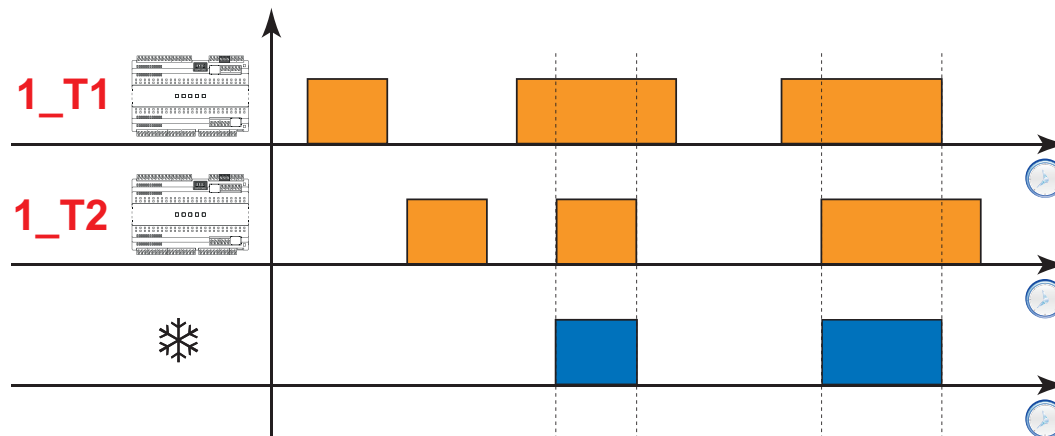


## Dual Thermostat in series regulation (rE=1)

This regulator only activates the production of cold/heat if both thermostats are active, and deactivates it when at least one of the two thermostats is satisfied (cabinet with 2 probes, one in delivery and one in pick up).

Regulation is activated by using parameters **rP1/rP2** to set the desired probes.

In the event of a probe error on one or both thermostats, regulation will use the probe error parameters.



**Legend:** **1\_T1** represents the progress of the probe set as thermostat 1 and **1\_T2** represents the progress of the probe set as thermostat 2.

The 2 regulators are managed using the following parameters:

First regulator:

- **rP1**: regulation probe 1 setting
- **SP1**: first regulator setpoint setting
- **dF1**: first regulator differential setting
- **HC1**: first regulator heat/cool mode setting

Second regulator:

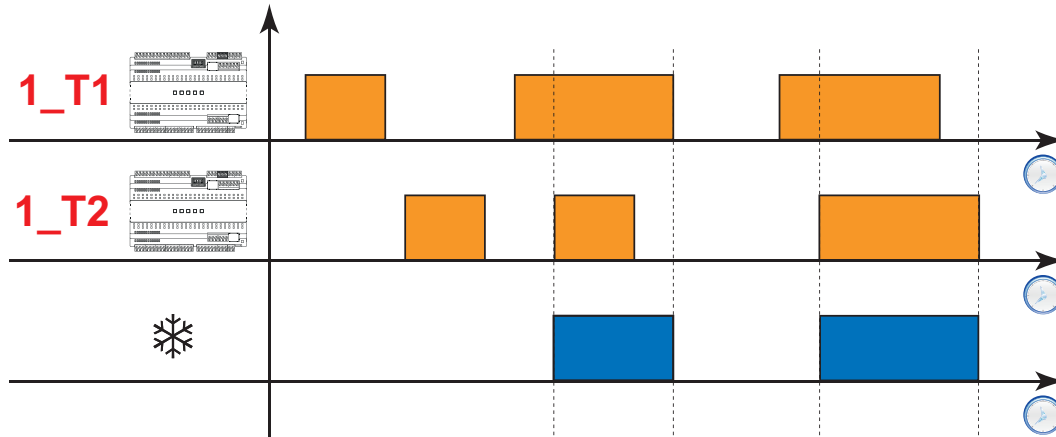
- **rP2**: regulation probe 2 setting
- **SP2**: second regulator setpoint setting
- **dF2**: second regulator differential setting
- **HC2**: second regulator heat/cool mode setting

## Dual Thermostat in parallel regulation (rE=2)

This regulator only activates the production of cold/heat if both thermostats are active, and deactivates it when both of the two thermostats are satisfied (combined cabinet: island and upright).

Regulation is activated by using parameters **rP1/rP2** to set the desired probes.

In the event of a probe error on one or both thermostats, regulation will use the probe error parameters.



**Legend:** 1\_T1 represents the progress of the probe set as thermostat 1 and 1\_T2 represents the progress of the probe set as thermostat 2.

The 2 regulators are managed using the following parameters:

First regulator:

- **rP1**: regulation probe 1 setting
- **SP1**: first regulator setpoint setting
- **dF1**: first regulator differential setting
- **HC1**: first regulator heat/cool mode setting

Second regulator:

- **rP2**: regulation probe 2 setting
- **SP2**: second regulator setpoint setting
- **dF2**: second regulator differential setting
- **HC2**: second regulator heat/cool mode setting

## Two independent generic purpose regulators (rE=4)

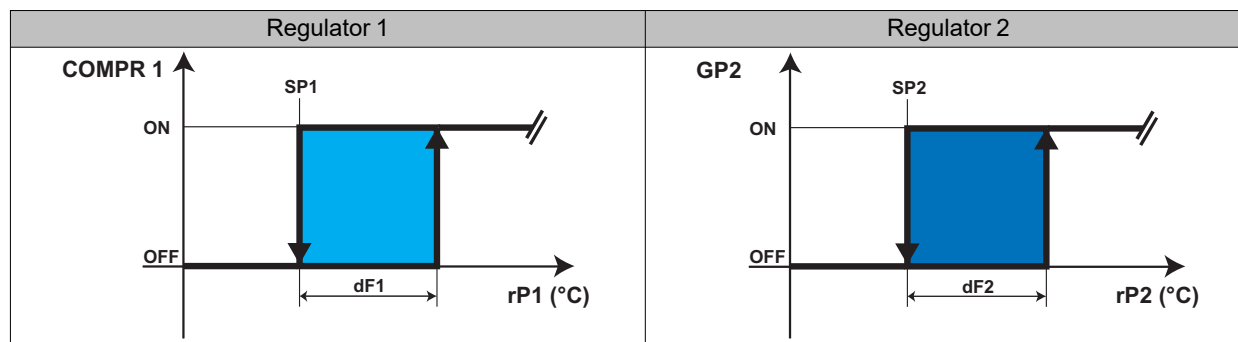
Regulation is activated by using **rP1/rP2** to set the desired probes.

It is possible to activate a second independent generic purpose regulator\*.

(\*) The second regulator is a generic auxiliary output, not subject to the timings described by parameters **Cit**, **CAt**, **dOn**, **dOF**, **dbi**.

This regulator is independent from the other regulators, except the stand-by function, in which the output is deactivated.

This regulator only activates the production of heat/cold if both thermostats are active.



The first regulator implements output **COMP1**, which depends on the values and parameters indicated in the diagram, as well as the compressor safety timings.

The second regulator implements output **GP2**, which is a compressor or a generic auxiliary output, not subject to the timings described by parameters **Cit**, **CAt**, **dOn**, **dOF**, **dbi**.

The second regulator:

- can work in both Heat and Cool modes
- has its own setpoint (**SP2**) and its own differential (**dF2**)
- has no safety timing, except for the timing **Odo**
- in the event of a probe error, the output will be permanently off

This regulator is independent from the other regulators, except the stand-by function, in which the output is deactivated. It can be used, for example, to manage the light on the basis of a light sensor connected to one of the 5 analog inputs Pb1...Pb5.

**Note:** in the latter case, set the setpoint **SP2** and differential **dF2** according to the transcoding tables associated with the compatible sensors. For assistance in choosing sensors, please contact Eliwell.

The 2 regulators are managed using the following parameters:

First regulator:

- **COMP1:** (**Compressor**; H21...H27 = 1) output progress relating to the first regulator
- **rP1:** regulation probe 1 setting
- **SP1:** first regulator setpoint setting
- **dF1:** first regulator differential setting
- **HC1:** first regulator heat/cool mode setting

Second regulator:

- **GP2:** (**General purpose regulator**; H21...H27 = 12) output progress relating to the second regulator
- **rP2:** regulation probe 2 setting
- **SP2:** second regulator setpoint setting
- **dF2:** second regulator differential setting
- **HC2:** second regulator heat/cool mode setting

## Continuous Modulation (rE=5 or 6)

### Continuous modulation with a single thermostat

Continuous modulation with a single thermostat can be activated by configuring parameter **rE=5**.

The algorithm modulates the EEV to maintain the regulation temperature within the band **(SP1-dF1)...****(SP1+dF1)**.

If superheat falls below the setpoint **OLt**, the regulator will reduce valve opening so as to bring the value back above **OLt** (this will be to the detriment of temperature regulation).

### Continuous modulation with a dual thermostat series

Continuous modulation with a dual thermostat in series can be activated by configuring parameter **rE=6**.

The regulation temperature corresponds to the temperature nearest its setpoint: **SP1** (Thermostat 1) and **SP2** (Thermostat 2).

In case of Energy Saving mode, the value is calculated by the sum of parameters:

- **(SP1+OS1)** for Thermostat 1
- **(SP2+OS2)** for Thermostat 2

The algorithm modulates the EEV to maintain the difference between the temperature and the relevant setpoint within the band:

- **(SP1-dF1)...****(SP1+dF1)** for Thermostat 1
- **(SP2-dF2)...****(SP2+dF2)** for Thermostat 2

If superheat falls below the setpoint **OLt**, the regulator will reduce valve opening so as to bring the value back above **OLt** (this will be to the detriment of temperature regulation).

The superheat control is activated when the superheat is below the setpoint **OLt** or the regulation temperature is above **SP1 + dF1/SP2 + dF1**.

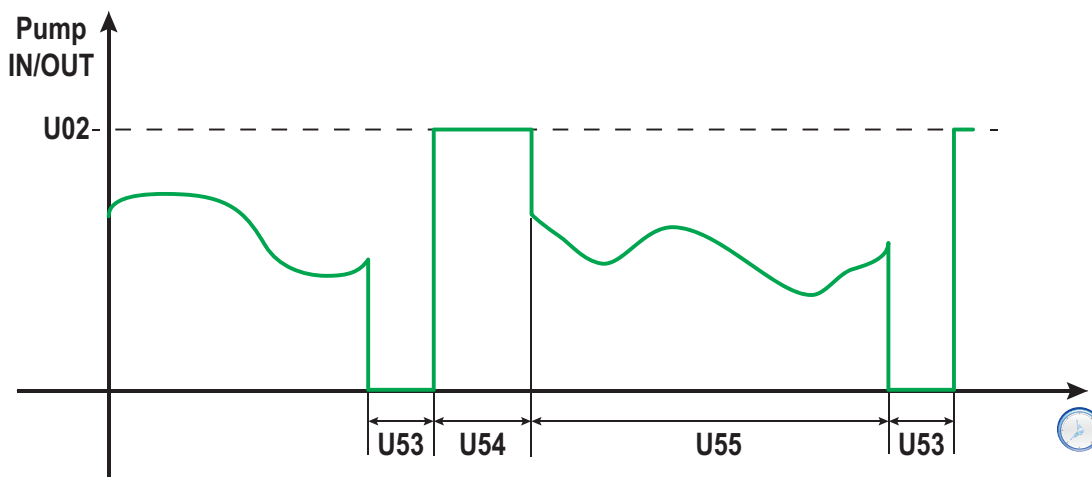
Continuous modulation is activated when the regulation probe is below the setpoint **SP1/SP2** and the superheat value is above **OLt**.

The superheat control uses the **U14** parameter and the continuous modulation uses the **U20** parameter.

### Continuous modulation and oil management

Oil management is activated when using continuous modulation, because a small quantity of oil could be present inside the evaporator (this is due to the limited flow of refrigerant).

To overcome this problem, the PUMP IN/OUT can be activated; every **U55** seconds it closes the valve for a time period **U53** and then re-opens it at 100% for a time period **U54**.



### Regulation in the event of probe error

In the event of a probe error on the first regulator, and/or the second regulator if using dual thermostat mode, the output will be managed in accordance with parameters **Ont** and **OFt**.

# Compressor

## Description

If the cold room probe is in error, the relay for the output configured as compressor/general (**H2x=1**) regulates according to the timescales set by parameters **Ont** and **Oft**.

The first timescale to be activated is **Ont**. If **Ont** > 0 the protection programmed using parameters **dOn**, **dOF** and **dbi** must nevertheless be observed.

**Note:** Parameter **OdO** inhibits activation of any relay output (compressor/general, defrost, fans, etc.) for its duration, with the exception of the buzzer or the alarm relay.

## Operating conditions

The compressor relay output is managed as follows:

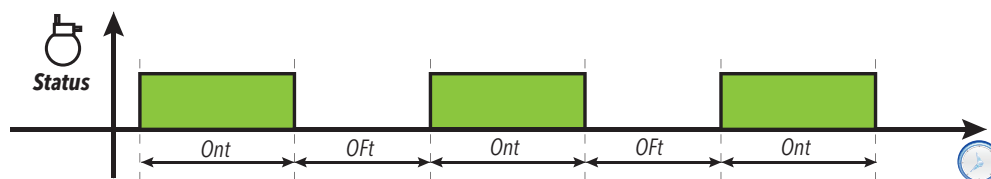
| Ont | Oft | Compressor output                                                                                          |
|-----|-----|------------------------------------------------------------------------------------------------------------|
| 0   | 0   | off                                                                                                        |
| 0   | >0  | off                                                                                                        |
| >0  | 0   | active                                                                                                     |
| >0  | >0  | Duty cycle, regardless of the probe values (cold room probe not working) and requests from other utilities |

If **Ont** > 0 and **Oft** = 0: the compressor regulator will always be on.

If **Ont** > 0 and **Oft** > 0: the compressor runs in operating cycle mode regardless of the values assumed by the probes (cold room probe not working) and requests from other users (duty Cycle).

**Note:** if the cold room probe is working, duty cycle mode is not enabled and conventional regulation is activated. When the probe is reset (connected or replaced), normal regulation starts up again.

The diagram below shows duty Cycle operating mode if **Ont**>0 and **Oft**>0:



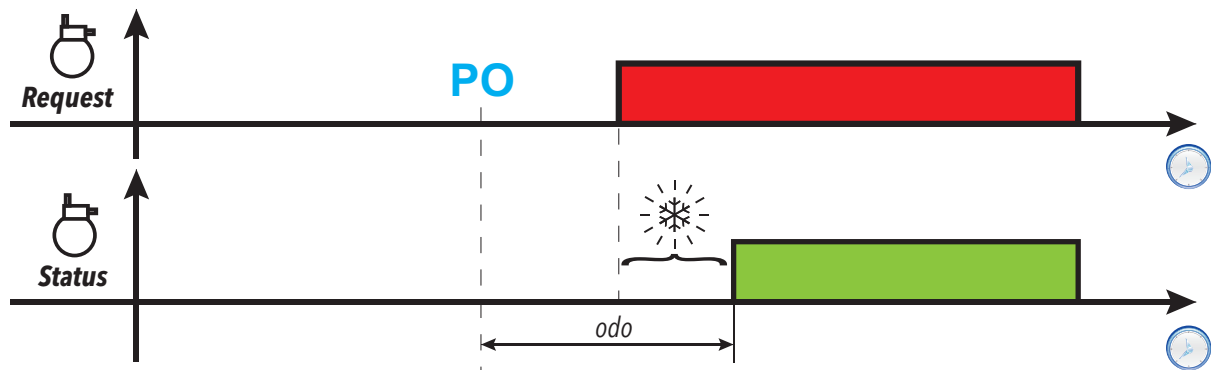
## Compressor protections

To avoid damaging the compressor, the following protections can be set up:

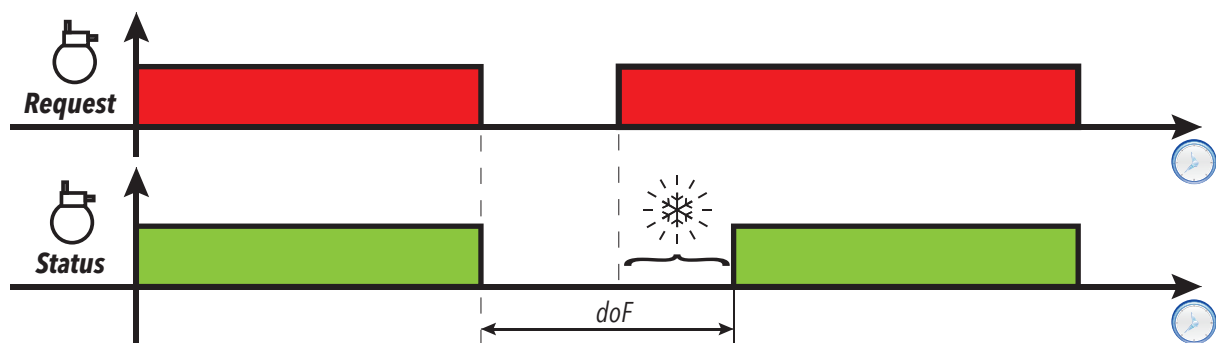
- a delay **dOF** on reactivation of the compressor after the activation request ends. If a new activation request arises during the delay **dOF**, the compressor icon will flash on the display.
- a delay **dbi** between one compressor startup and the next. The delay **dbi** is calculated from the previous compressor startup. If a request arises during the delay **dbi**, the compressor icon will flash on the display.
- a delay **dOn** for compressor startup after the request. During the delay **dOn**, the compressor icon will flash on the display

## Regulation diagrams

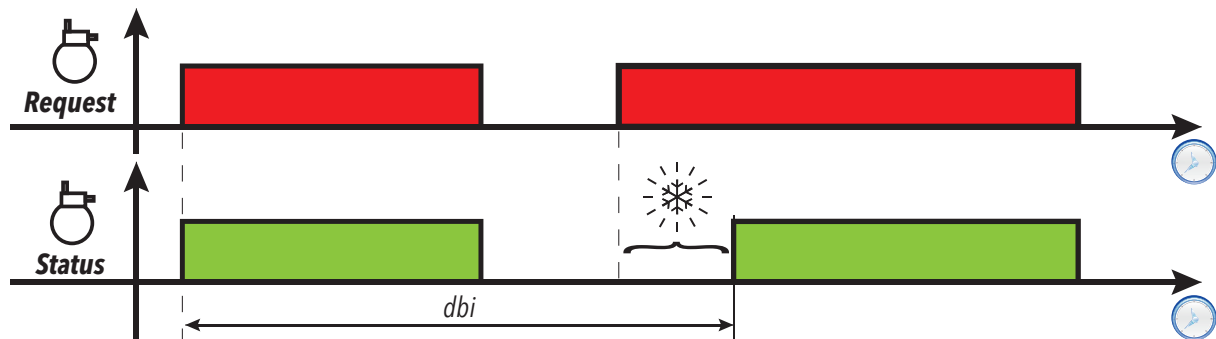
Compressor activation delay from request



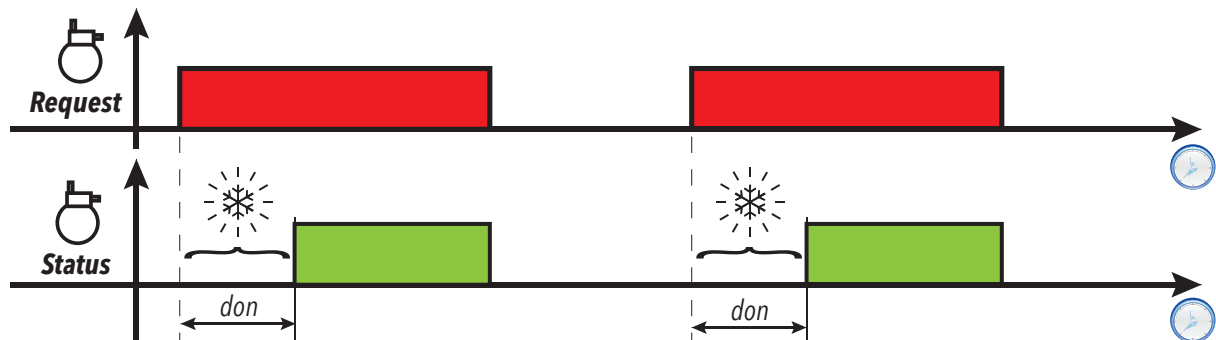
Compressor output activation delay from switch-off



Delay between two consecutive compressor output activations



Compressor activation delay from request



**Legend:** PO = Controller switch-on;  = Compressor icon flashing; **Request** = Compressor activation request; **Status** = Compressor status (ON/OFF).

## Parameters

| Parameter  | Description                                                                       |
|------------|-----------------------------------------------------------------------------------|
| <b>Ont</b> | Compressor output ON time if probe in error                                       |
| <b>OFt</b> | Compressor output OFF time if probe in error                                      |
| <b>dOn</b> | Compressor relay activation delay from call                                       |
| <b>dOF</b> | Delay between compressor relay switch-off and the next switch-on                  |
| <b>dbi</b> | Delay between two subsequent compressor starts                                    |
| <b>OdO</b> | Output activation delay time from switching on the device or after a power outage |
| <b>COd</b> | Time compressor remains off before a defrost                                      |

## Energy Saving regulation

Energy Saving mode can be activated in one of the following ways:

- via digital input (if suitably configured)
- via key (if suitably configured)
- remotely (directly via the supervision system)
- via RTC (if suitably configured)
- via Link<sup>2</sup>.

During this mode, offsets **OS1** and **OS2** will be added to regulation setpoints **SP1** and **SP2**. If the second regulator is active, the offset will also be added to it.

**Note:** if you do not want the Offset to be added to the second regulator as well, set **OS2** = 0.

During this mode, the differential value on which to work will also be changed, **dF1** will be replaced by **dn1** and **dF2** by **dn2**. If the second regulator is active, the differential will also be added to it.

**Note:** if you do not want to change the value of the differential during Energy Saving mode, set **dn1** = **dF1** and **dn2** = **dF2**.

## Dynamic Setpoint regulation

If the dynamic setpoint is active (inactive during Energy Saving), it is possible to increase or decrease the setpoint for value **Od1** (for setpoint 1) and **Od2** (for setpoint 2) when the door remains shut for a specific amount of time (defined by parameter **Cdt**).

As soon as the door remains open for a time defined by **Eso** within the space of one hour (not necessarily continuous, but rather cumulative) the normal setpoint value is restored.

Parameter **Eso** can be used to set the deactivation "threshold":

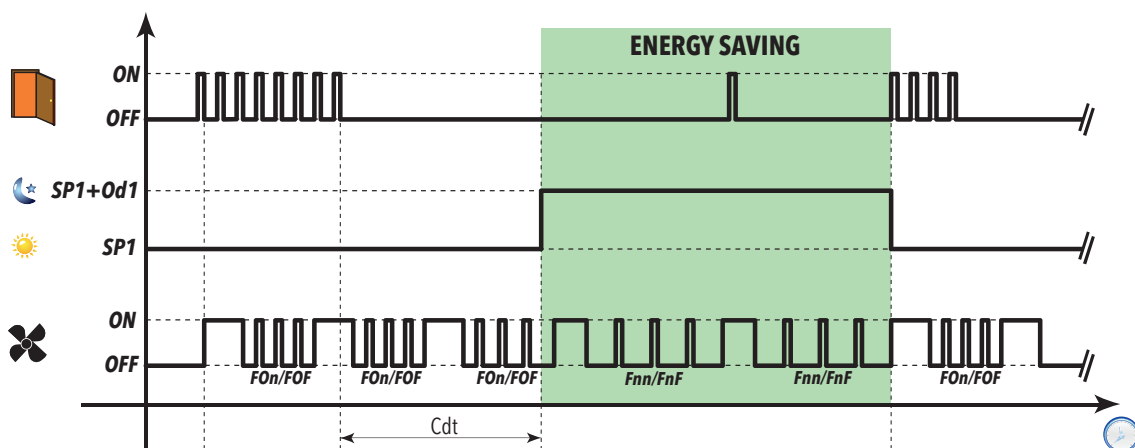
- **Eso** = 0: high usage before deactivation
- **Eso** = 10: low usage before deactivation

The function is active if parameter **Cdt** ≠ 0 and if a DI is configured as door switch. If the auxiliary regulator is active, the offset will also be added to it.

**Note:** if you do not want the Offset to be added to the second regulator as well, set **Od2** = 0.

Below is a graph showing how the algorithm works. The settings are:

- **ES** = 2
- **H11** = 8
- **ESF** = yES (enabled when "Energy Saving" mode is enabled).



## Remote Offset (only managed by Supervisor)

Serial commands can be used to increase/decrease the current value of the regulation setpoint for **OF1** (this will be added to setpoint **SP1** and any offset **OS1** or **Od1**).

**Note:** This increase/decrease only applies to the first setpoint (**SP1**).

This function is typically used for hot gas defrost systems, where it is necessary to have a certain number of counters supplying cooling, so as to ensure there is a sufficient amount of hot gas to perform defrosting as efficiently as possible.



## Evaporator Fans

### Operating conditions

Regulation is activated by using **FP1** to set the desired probe.

The evaporator fan regulator is activated if the following conditions occur:

- The time set using parameter **OdO** has elapsed (if **OdO** ≠ 0).
- The temperature read by the evaporator probe is lower than the value of parameter **FSt**.
- Parameter **dFd** is not excluded during the defrost (**dFd** = On).
- Dripping is not active (**dt**).
- Fan delay after defrost is not active (**Fdt**).

### Regulator activation

The request for fan activation or deactivation can take place in the following ways:

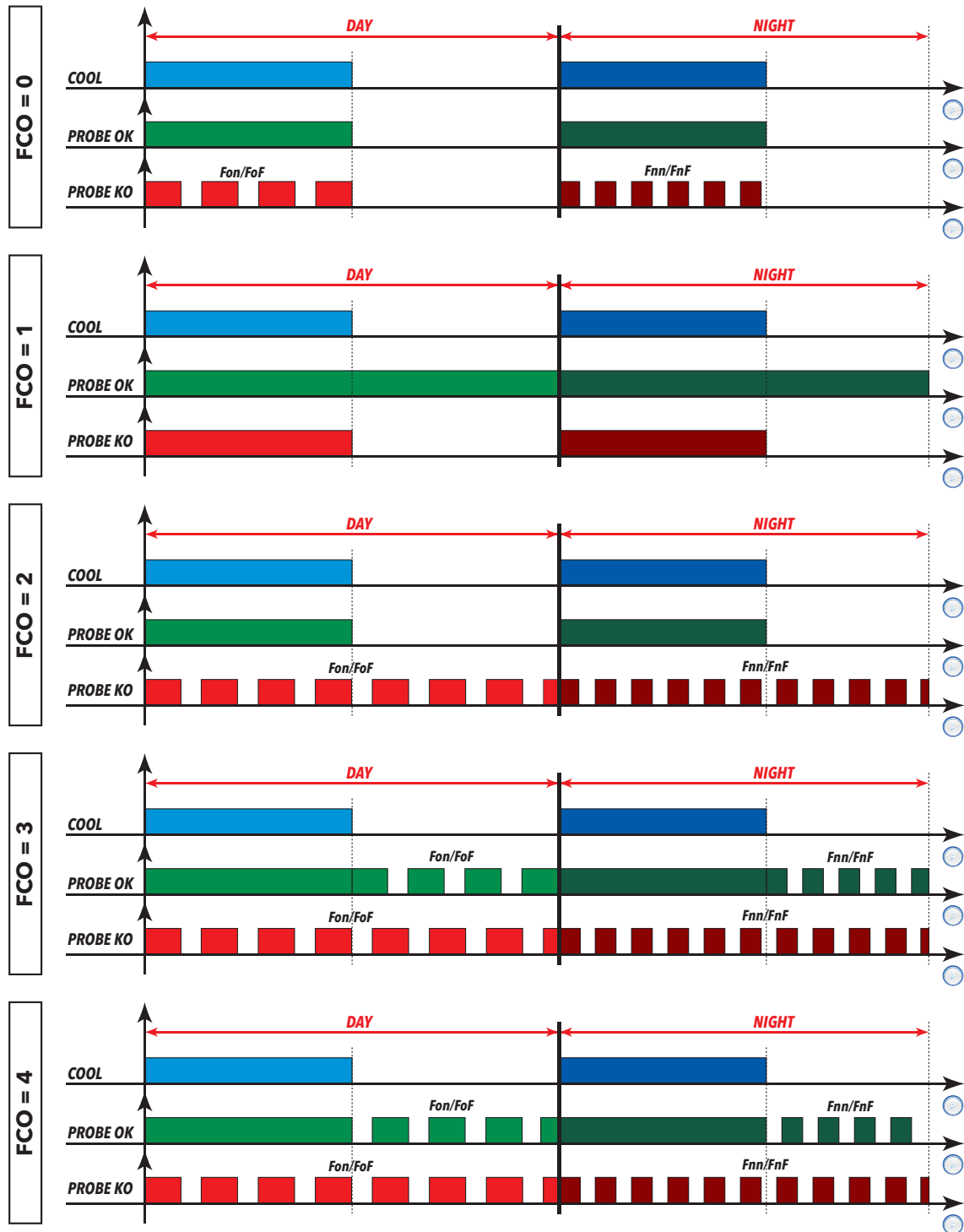
- from the compressor regulator, to assist in cooling (temperature control mode)
- from the defrost regulator, to control and/or limit the circulation of warm air.

### Fan operating modes

| Probe    | FCO | Day                   |                       | Night                 |                        |
|----------|-----|-----------------------|-----------------------|-----------------------|------------------------|
|          |     | Compressor ON         | Compressor OFF        | Compressor ON         | Compressor OFF         |
| Present  | 0   | Thermostat controlled | Off                   | Thermostat controlled | Off                    |
|          | 1   | Thermostat controlled | Thermostat controlled | Thermostat controlled | Thermostat controlled  |
|          | 2   | Thermostat controlled | Thermostat controlled | Thermostat controlled | Night duty cycle       |
|          | 3   | Thermostat controlled | Day duty cycle        | Thermostat controlled | Night duty cycle       |
|          | 4   | Thermostat controlled | Day duty cycle REV**  | Thermostat controlled | Night duty cycle REV** |
| Absent   | 0   | On                    | Off                   | On                    | Off                    |
|          | 1   | On                    | On                    | On                    | On                     |
|          | 2   | Day duty cycle        | Day duty cycle*       | Night duty cycle      | Night duty cycle*      |
|          | 3   | On                    | Day duty cycle*       | On                    | Night duty cycle*      |
|          | 4   | On                    | Day duty cycle REV**  | On                    | Night duty cycle REV** |
| In error | 0   | Day duty cycle        | Off                   | Night duty cycle      | Off                    |
|          | 1   | On                    | Off                   | On                    | Off                    |
|          | 2   | Day duty cycle        | Day duty cycle        | Night duty cycle      | Night duty cycle       |
|          | 3   | Day duty cycle        | Day duty cycle        | Night duty cycle      | Night duty cycle       |
|          | 4   | Day duty cycle        | Day duty cycle        | Night duty cycle      | Night duty cycle       |

- (\*): See section "Fan operation without probe"
- (\*\*): Reverse operation of normal Duty cycle.

The graphs below illustrate fan operation in accordance with the value of **FCO**.



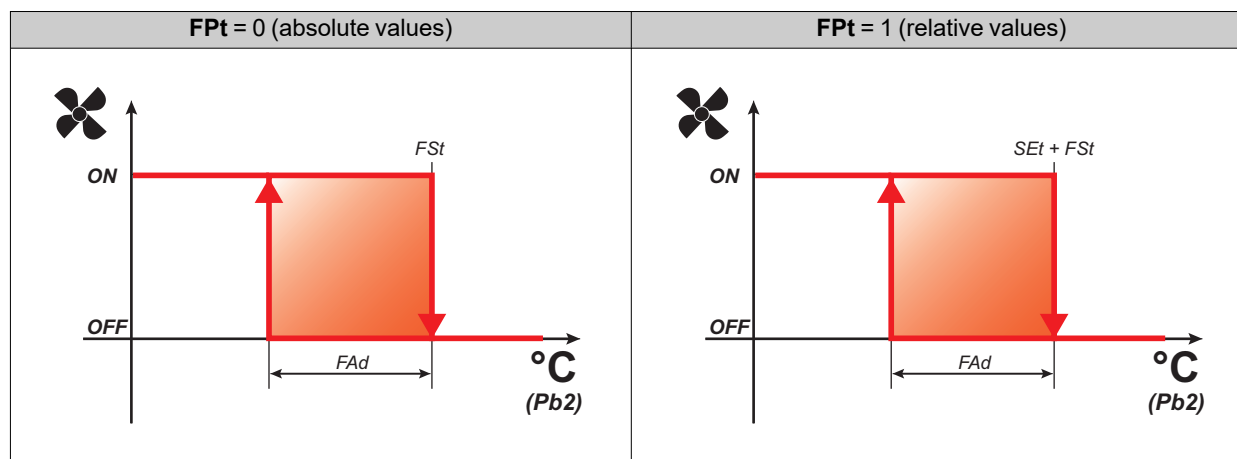
**Legend:** DAY = Day; NIGHT = Night; COOL = Cooling; **Probe OK** = Fan operation with probe present and working; **Probe KO** = Fan operation with probe present but in error.

## Fan operation in temperature control mode

During cooling, fan temperature control is carried out based on values **FSt** (fan disabling temperature) and **FAd** (fan differential). Parameter **FPt** can be used to select whether the set temperature values are absolute or relative to the setpoint.

**Note:** around the fan start temperature  $-50^{\circ}\text{C}$  ( $-58^{\circ}\text{F}$ ), the differential will always be specified by **FAd** but with the sign inverted.

Regulation diagrams based on whether the values are absolute or relative are shown below:



The regulation probe can be:

- One used for normal regulation and defrost (**FP1**≠0 and **FP2**=0)
- A specific probe for normal regulation and another during the defrost phase (**FP1**≠0 and **FP2**≠0).

The fans may be inhibited:

- during defrost
- if a digital input is configured as door switch.

When the evaporator fans are enabled during defrost (**dFd**=On) and the corresponding probe enters error status, the fans are kept running.

If the evaporator probe is not present, and **dFd**=On, the evaporator fans are active during defrost. Energy saving (night) mode is only active if enabled via parameter **ESF** when the controller is in Energy Saving mode.

Fan operation in duty cycle

The fans run in duty cycle mode when the compressor is off and this mode is specified by parameter **FCO**.

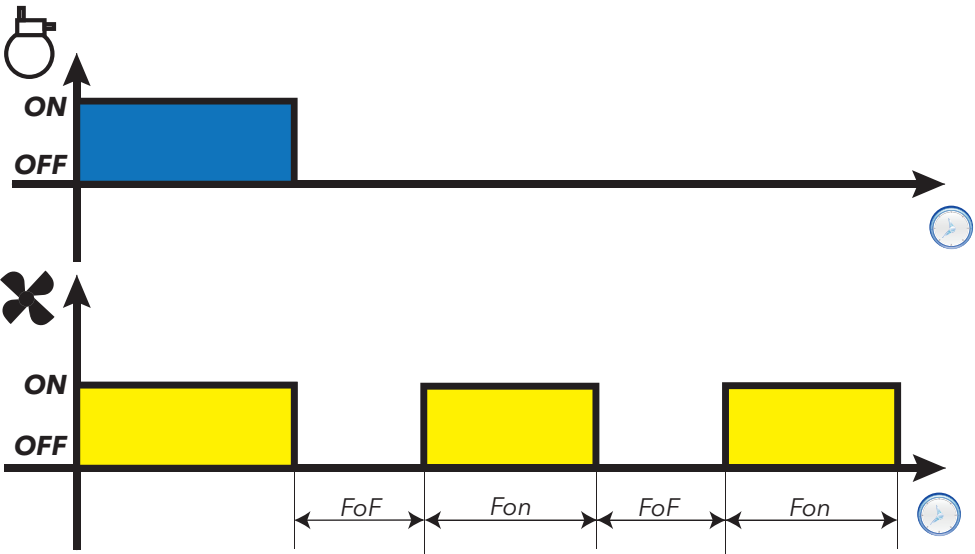
Activation of **Night** mode depends on parameter **ESF**:

- **ESF=no**: Night Mode disabled
- **ESF=yES**: Night Mode active when Energy Saving mode enabled

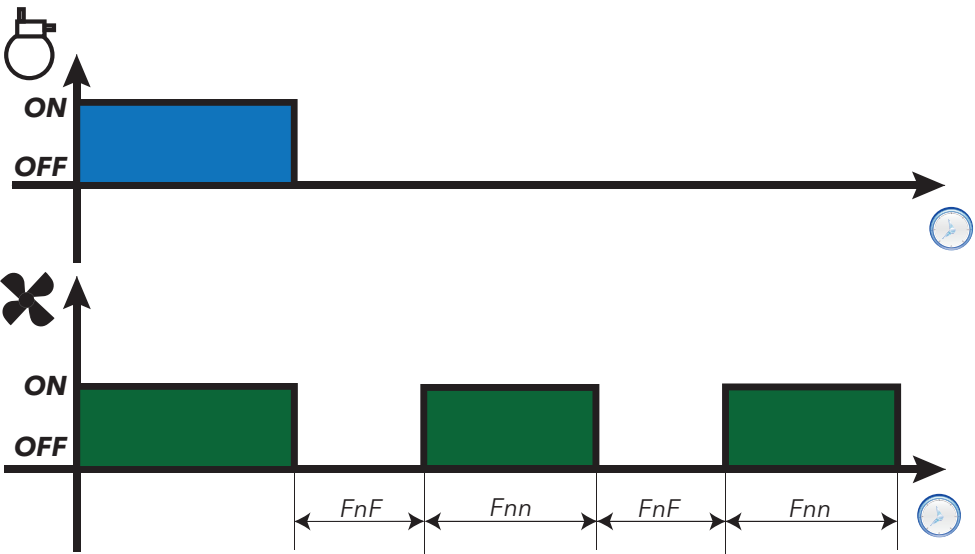
Depending on whether the controller is in day or night mode, fan operation is based on parameters **Fon** and **FoF** (day) or **Fnn** and **FnF** (night):

| Fon / Fnn | FoF / FnF | Fans       |
|-----------|-----------|------------|
| 0         | 0         | Off        |
| 0         | ≠0        | Off        |
| ≠0        | 0         | On         |
| ≠0        | ≠0        | Duty cycle |

Regulation diagram for Day duty cycle with compressor off



Regulation diagram for Night duty cycle with compressor off



## Fan operation in defrost mode

Operation depends on parameter **dFd**:

- **dFd=OFF**: Fans off during defrost
- **dFd=On**: Fans on during defrost (Temperature control or Duty cycle)

During cooling, fan temperature control is carried out based on values **FSt** (fan disabling temperature) and **FAd** (fan differential). Parameter **FpT** can be used to select whether the set temperature values are absolute or relative to the setpoint.

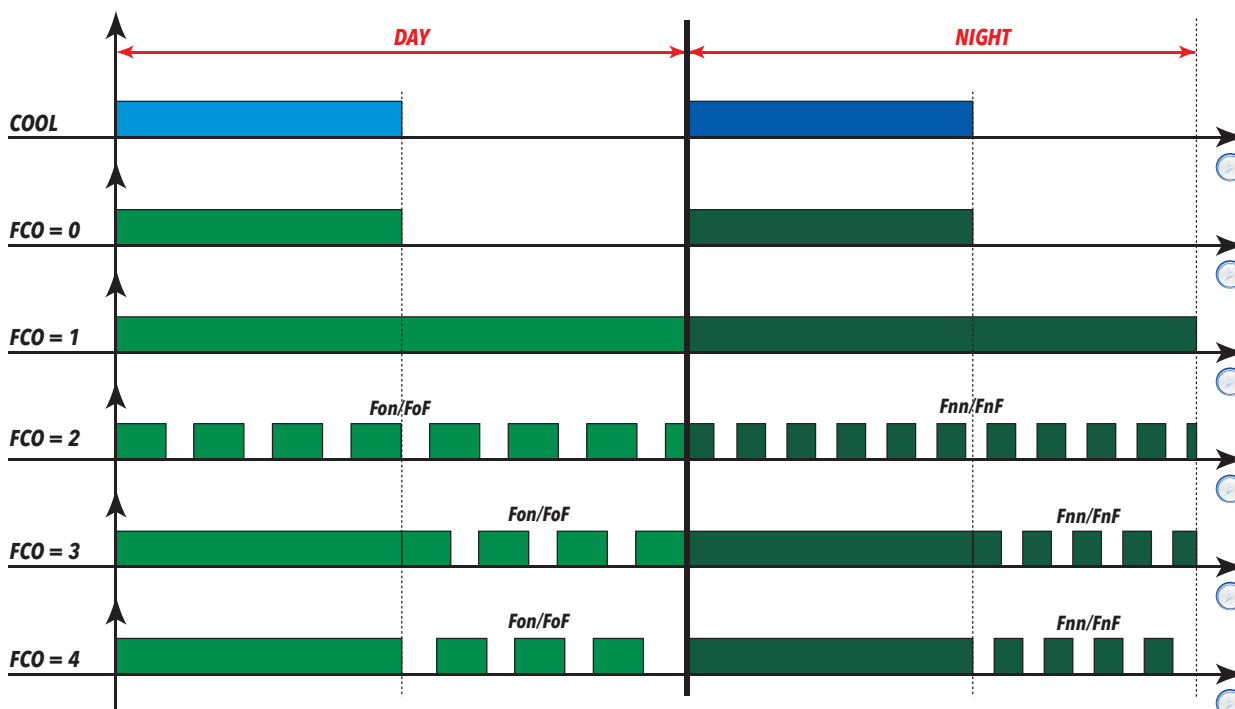
**Note:** in the case of “Electric heater” defrost, the compressor is OFF but the fans work as though the compressor was ON. To exclude the fans during a defrost, you must set **dFd=OFF**

When the evaporator fans are enabled during defrost (**dFd=On**) and regulate the evaporator probe in thermostat controlled mode, when the latter assumes error status it keeps the fans running constantly regardless of the values set by the Duty cycle.

## Fan operation without probe

If the evaporator probe is absent, depending on the value of parameter **FCO** and the compressor status, the fans may be “On”, “Off”, in Duty cycle (Night or Day). Parameter **FCO** will determine the operating mode of the evaporator fans.

Below is an example of fan operation based on the value set by **FCO**.



## Fan operation in dripping mode

During dripping the fans remain stopped for the time set using parameter **dt**.

**Note:** if **Fdt** is greater than **dt** the fans remain off for the time set in **Fdt**.

## Post-ventilation

Parameter **FdC** delays fan deactivation after the compressor has stopped. If **FdC** = 0 the function is excluded.

## Parameters

| Parameter  | Description                                                                                                |
|------------|------------------------------------------------------------------------------------------------------------|
| <b>OdO</b> | Output activation delay time from switching on the device or after a power outage                          |
| <b>FPt</b> | Sets whether parameter <b>FSt</b> is expressed as an absolute value or as a value relative to the setpoint |
| <b>FSt</b> | Evaporator fan disabling temperature                                                                       |
| <b>Fdt</b> | Evaporator fan activation delay time after a defrosting cycle                                              |
| <b>dFd</b> | Evaporator fan exclusion during a defrost cycle                                                            |
| <b>FCO</b> | Evaporator fan operating mode                                                                              |
| <b>FdC</b> | Evaporator fan shutoff delay after compressor deactivation                                                 |
| <b>FAd</b> | Evaporator fan trigger differential                                                                        |
| <b>dt</b>  | Dripping time                                                                                              |
| <b>Fon</b> | Evaporator fan ON time in day duty cycle mode                                                              |
| <b>FoF</b> | Evaporator fan OFF time in day duty cycle mode                                                             |
| <b>Fnn</b> | Evaporator fan ON time in night duty cycle mode                                                            |
| <b>FnF</b> | Evaporator fan OFF time in night duty cycle mode                                                           |
| <b>ESF</b> | Night mode activation                                                                                      |

## Modulated Fans

### Description

This analog regulator is used to manage the modulated fans applied to the evaporator or condenser and provides an implementation percentage to be applied to the analog output (on the basis of parameter **H51**).

Regulation is activated by using **FE1** to set the desired probe (temperature probe or pressure transducer)

The regulation setpoint can be absolute or relative:

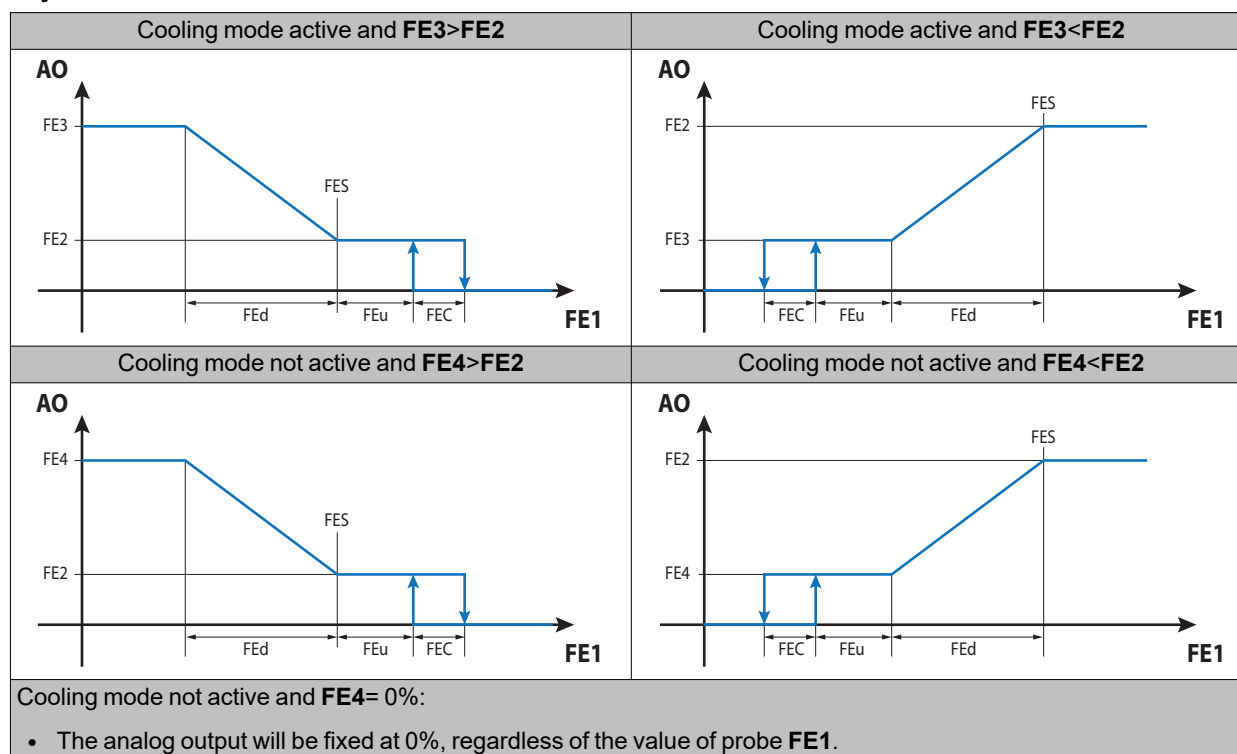
- Absolute if **FEt** = AbS and the setpoint will be the value of: **FES**
- Relative if **FEt** = rEL and the setpoint will be the value of: **FES + Setpoint 1 (Regulator 1)**

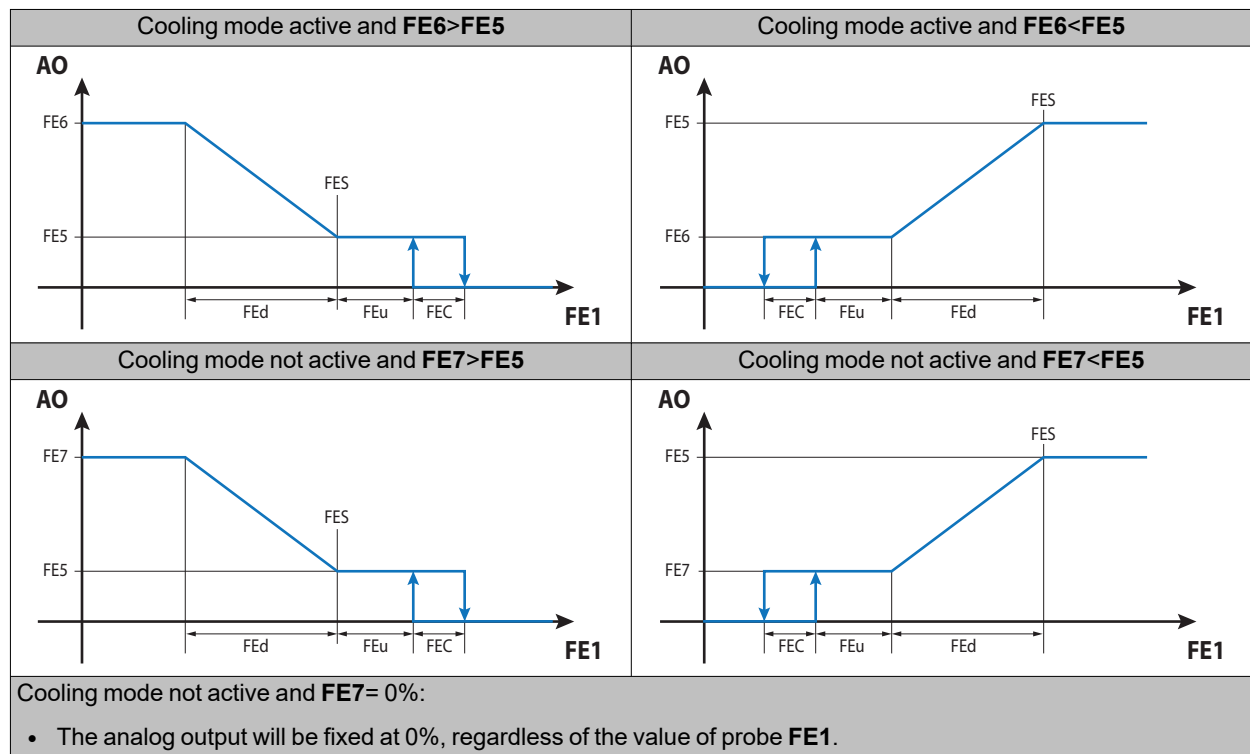
### Operation examples

The analog output (indicated in the diagrams with **AO**), is calculated as (to keep things simple, we have illustrated the mode associated with **FEt=AbS**).

Se **FEt=rEL**, replace the value **FES** with (**FES + Setpoint 1**):

**Day mode:**



**Night mode:****Regulation with probe error**

In the event of a probe error, the analog output will assume the following values:

| Condition   | Day        |             | Night (Energy Saving) |             |
|-------------|------------|-------------|-----------------------|-------------|
|             | Cooling ON | Cooling OFF | Cooling ON            | Cooling OFF |
| $FE4 > 0\%$ | FE9        | FE9         | ---                   | ---         |
| $FE4 = 0\%$ | FE9        | 0%          | ---                   | ---         |
| $FE7 > 0\%$ | ---        | ---         | FE9                   | FE9         |
| $FE7 = 0\%$ | ---        | ---         | FE9                   | 0%          |

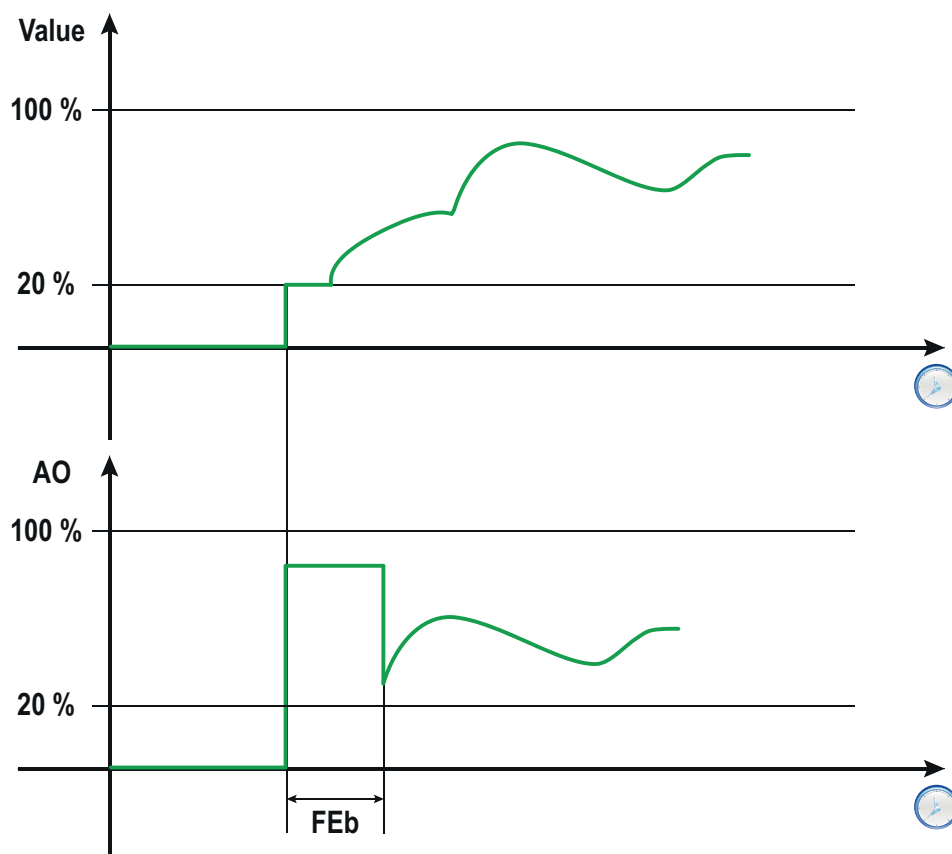
During the defrost phase the output will be set to the value set by parameter **FE8**.

During dripping (with a duration **dt**) the output will be set to 0%.

If the analog output mode at 0% is selected with cooling off ( $FE4=0\%$  and/or  $FE7=0\%$ ), the analog output can be kept active during post-ventilation **FEr**, as long as the analog output is  $> 0\%$  when cooling is off, otherwise they will maintain 0%. During the time period **FEr** the cut-off is disabled.



Pick-up mode can be activated:



Prolonged use of the fans can reduce their performance and/or increase heating. Pick-up mode can be activated regularly for a time period **FEP**.

During "Counter cleaning" mode, the modulated fans are forced to percentage **FE3**

## Parameters

| Parameter  | Description                                                     |
|------------|-----------------------------------------------------------------|
| <b>FE1</b> | Sets the probe for the modulated fans.                          |
| <b>FEt</b> | <b>FES</b> parameter mode.                                      |
| <b>FES</b> | Modulated fan disabling temperature.                            |
| <b>FEd</b> | Modulated fan differential                                      |
| <b>FEu</b> | Cut-OFF ( <b>0</b> = disabled)                                  |
| <b>FEC</b> | Cut-OFF differential                                            |
| <b>FEr</b> | Fan switch-off delay from compressor stop                       |
| <b>FE2</b> | Minimum Day percentage                                          |
| <b>FE3</b> | Maximum Day percentage with compressor on                       |
| <b>FE4</b> | Maximum Day percentage with compressor off                      |
| <b>FE5</b> | Minimum Night percentage                                        |
| <b>FE6</b> | Maximum Night percentage with compressor on                     |
| <b>FE7</b> | Maximum Night percentage with compressor off                    |
| <b>FE8</b> | Percentage during defrost                                       |
| <b>FE9</b> | Percentage in the event of probe error                          |
| <b>FEA</b> | Fan pick-up percentage ( <b>0</b> = mode disabled)              |
| <b>FEb</b> | Fan pick-up time                                                |
| <b>FEP</b> | Fan forcing period at pick-up speed ( <b>0</b> = mode disabled) |

## Condenser Fans

### Operating conditions

The condenser fan regulator and pre-ventilation are enabled if - and only if - a digital output is configured as a condenser fan output (**H2x** =  $\pm 11$ ).

The condenser fans are active if at least one compressor is active.

**Note:** if the compressor is on in defrost (**dtty**=1 and **dtty**=2) and parameters **CFP**≠0 (Pre-ventilation time) and **CFd**=OFF (Condenser fan mode), in line with the end of defrost, the fans come on and the compressors switch off for the duration of the preheat phase (**CFP**).

**Note:** if the compressor is off in defrost (e.g. **dtty**=0) and parameters **CFd**=On, regulation has priority during defrost and, even if **CFd**=On (fans on), the fans are switched off as come required by the regulator.

### Parameters

| Parameter   | Description                                                                                                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>dtty</b> | Defrost type.<br><b>0</b> = electric heater defrost<br><b>1</b> = cycle inversion defrost<br><b>2</b> = hot gas defrost for plug-in applications<br><b>3</b> = hot gas defrost for applications with remote group<br><b>4</b> = smart defrost. |
| <b>CFP</b>  | Pre-ventilation time.                                                                                                                                                                                                                          |
| <b>CFd</b>  | Condenser fan mode during defrosting.                                                                                                                                                                                                          |

# Preheating

## Description

The Preheat function can be a digital input with **H1x** =  $\pm 9$  or **i0x** =  $\pm 9$ .

While the preheat output is active:

- the compressor output and evaporator fans are off
- the compressor icon (❄) will flash.

If the function is activated during defrost, Preheat can continue as normal, except in the defrost modes which need the compressor to be on, i.e.:

- Cycle inversion defrost (**dtty**= 1)
- Hot gas defrost for plug-in applications (with built-in compressor) (**dtty**= 2).

## Energy Saving

### Description

Energy Saving mode (sometimes also called night operation) can be used to activate a series of functions that help to reduce consumption during closure periods.

### Operating conditions

The Energy Saving function can be activated in one of the following ways:

- press and hold a key with **H3x = 4**
- activating a digital input with **H1x = ±4** or **i0x = ±4**
- via RTC by setting an event
- using a Supervisor, via Modbus command (serial)
- via Link<sup>2</sup> network

Light and shutter output (AUX) management can take place in the following way:

- press and hold a key with **H3x = 5**
- activating a digital input with **H1x = ±5** or **i0x = ±5**
- via RTC by setting an event
- using a Supervisor, via Modbus command (serial)
- via Link<sup>2</sup> network

For the “evaporator fans” and the “anti-sweater heaters”, refer to the relevant sections.

On activation of the Energy Saving function there will be:

- a change in the weighted average of the virtual regulation / switching probe
- an increase in the setpoint (reduced setpoint)
- a change in the regulation differential
- a modulation of the evaporator fans when the setpoint has been reached
- a reduction in the power supplied by the heating elements (Anti-sweater heaters)

### Virtual probe / changing the probe

The device, in addition to regulating the values detected by the individual probes, can also regulate according to a weighted average of the value read by two probes (regulation probe and virtual probe):

- Virtual probe in Day mode:

$$Virtualprobe = [(probe1) * H72 + (probe2) * (100 - H72)] / 100$$

- Virtual probe in Energy Saving mode (Night):

$$Virtualprobe = [(probe1) * H72 + (probe2) * (100 - H72)] / 100$$

In the formula, probe 1 is selected via parameter **H70**, and probe 2 via parameter **H71**. Changing the regulation probe, between Day and Night - Energy Saving - mode, can be carried out by setting **H72=100** and **H73= 0**:

- Virtual probe in Day mode: **Probe 1**
- Virtual probe in Energy Saving mode (Night): **Probe 2**.

### Parameters

| Parameter  | Description                                                     |
|------------|-----------------------------------------------------------------|
| <b>H70</b> | Sets 1st probe to use as a virtual probe.                       |
| <b>H71</b> | Sets 2nd probe to use as a virtual probe.                       |
| <b>H72</b> | Sets the calculation % used by the virtual probe in day mode.   |
| <b>H73</b> | Sets the calculation % used by the virtual probe in night mode. |

## Deep Cooling Cycle (DCC)

### Description

During the deep cooling cycle, the compressor runs with a setpoint equal to **dCS** and differential equal to **dF1** for a maximum time period **tdC**.

### Activation

A deep cooling cycle can be activated in one of the following ways:

- press and hold a key with **H3x = 7**
- activating a digital input with **H1x = ±13** or **i0x = ±13**
- using a Supervisor, via Modbus command (serial)
- via Link2 network

In the event of a probe error and/or lack of power, the DCC ends and the device resumes standard operation.

**Note:** If parameters **dCS**, **tdC** and **dCC** are changed, DCC operation is recalculated with the new values set.

### Operating conditions

When a deep cooling cycle is activated, defrosts are disabled.

At the end of the deep cooling cycle, after a delay of **dCC**, a defrost is forced and the count for interval **dit** begins again.

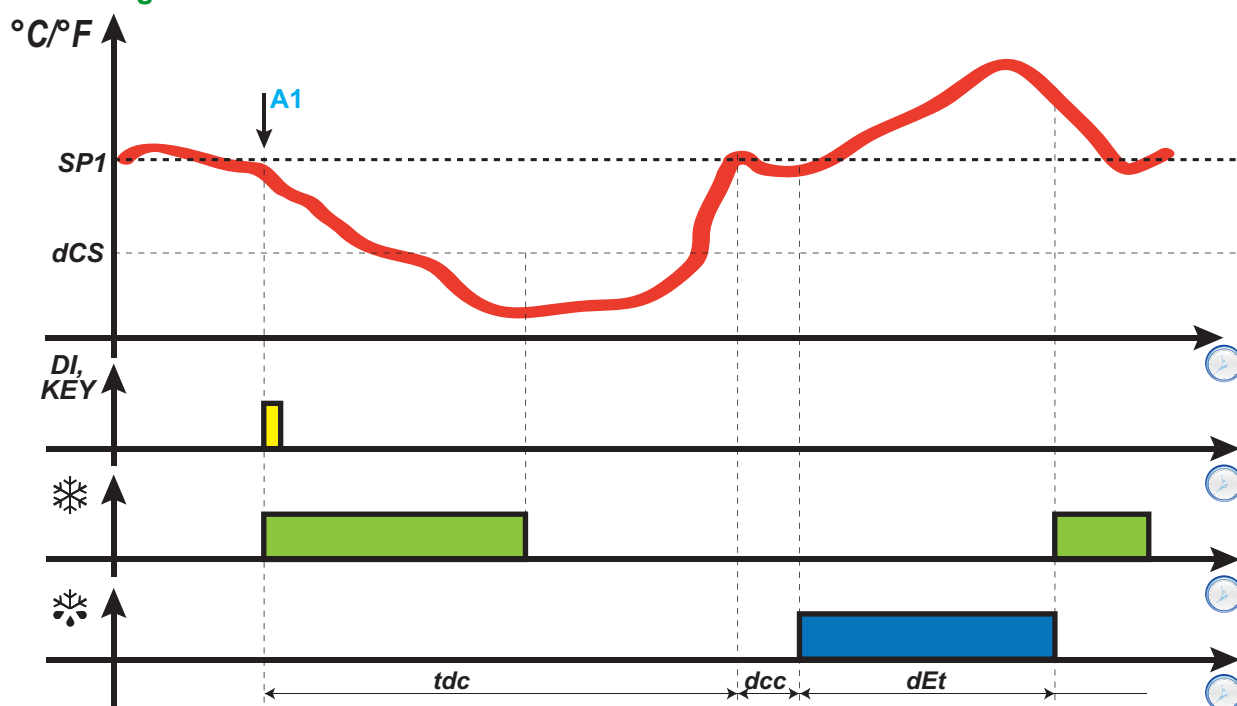
Exiting DCC takes place on the basis of time if parameter **tdC** ≠ 0, or on reaching setpoint **dCS**. If **dCC** = 0 the defrost takes place at the end of the DCC.

The deep cooling cycle ends automatically and standard regulation is resumed if:

- There is a probe error (the display shows **E2**).
- A blackout occurs and the controller switches off and on again.

If parameters **dCS**, **tdC** and **dCC** are changed during the deep cooling cycle, cycle operation should be recalculated for the new set values.

### Regulation diagram



**Legend:** **A1** = DCC activation time; **DI** = Digital Input; **KEY** = Key.

### Alarm operation during the deep cooling cycle

During the deep cooling cycle, the temperature alarms are disabled. Normal management is re-established at the end of the cycle, when the temperature read by **rP1** reaches the regulation setpoint value **SP1** again.

## Parameters

| Parameter        | Description                                              |
|------------------|----------------------------------------------------------|
| <b>SP1</b>       | Regulation setpoint.                                     |
| <b>dit</b>       | Interval between two consecutive defrosts                |
| <b>dCS</b>       | Deep cooling cycle setpoint                              |
| <b>diF</b>       | Setpoint differential                                    |
| <b>tdC</b>       | Deep cooling cycle duration                              |
| <b>dCC</b>       | Defrost activation delay after a "Deep Cooling Cycle"    |
| <b>H11...H18</b> | Digital input 1...8 /polarity configuration.             |
| <b>i01...i02</b> | Digital input 9 and 10 /polarity configuration (on KDX). |
| <b>H31...H37</b> | Key configuration.                                       |

## Anti-sweater heaters (Frame heater)

### Description

This regulator can activate the anti-sweater heaters for a display unit or a chiller cabinet.

Regulation is activated by using **FH** to set the desired probe.

Regulation can be:

- with fixed Duty cycle (only if **FH=dc**)
- on glass sensor
- on glass sensor with remote Dew Point.

The device is used to control anti-sweater heaters by means of:

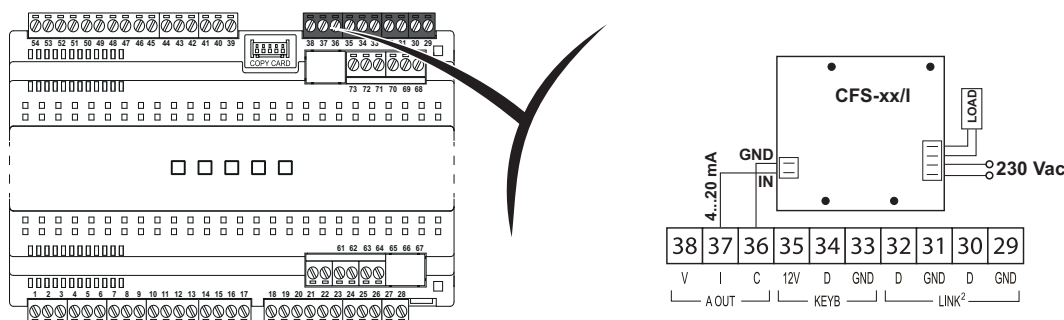
- external SSR relay with Open Collector output
- external module with analog input (0...10 V, 4...20 mA).

### Connection examples

#### Example 1: Anti-sweater heaters with external SSR relay

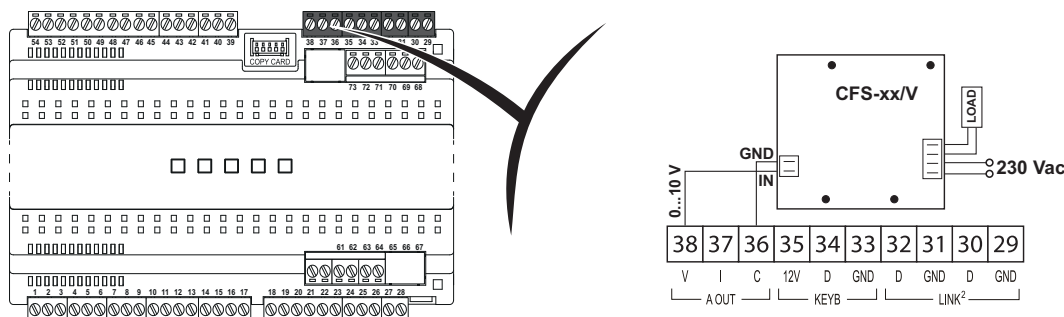


#### Example 2: Anti-sweater heaters with CFS-xx/I on output 4...20 mA



**Note:** The CFS-xx/V modules regulate the voltage of a load and have an input  $V = 0...10\text{ V}$ .

#### Example 3: Anti-sweater heaters with CFS-xx/V on output 0...10 V



**Note:** The CFS-xx/I modules regulate the voltage of a load and have an input  $I = 4...20\text{ mA}$ .

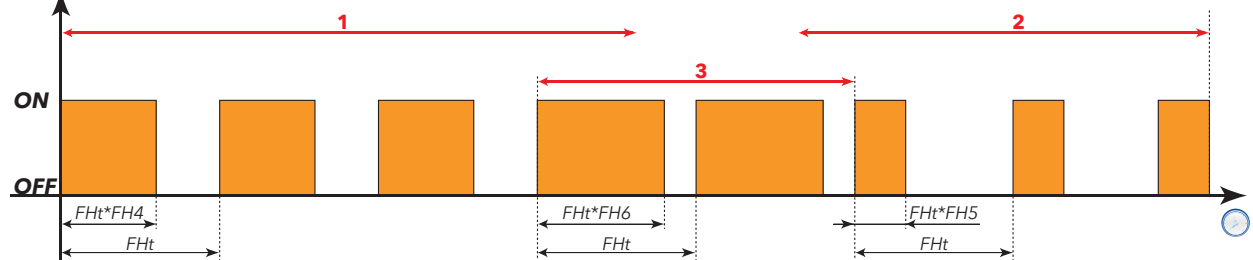
### Fixed duty cycle regulation

Fixed duty cycle regulation is activated by setting parameter **FH=dc** and forces a fixed implementation percentage as follows:

- Parameter value **FH4** for Day mode
- Parameter value **FH5** for Energy Saving - Night mode
- Parameter value **FH6** during defrost (Day / Night)

Open Collector output: parameter **FHt** defines the modulation period.

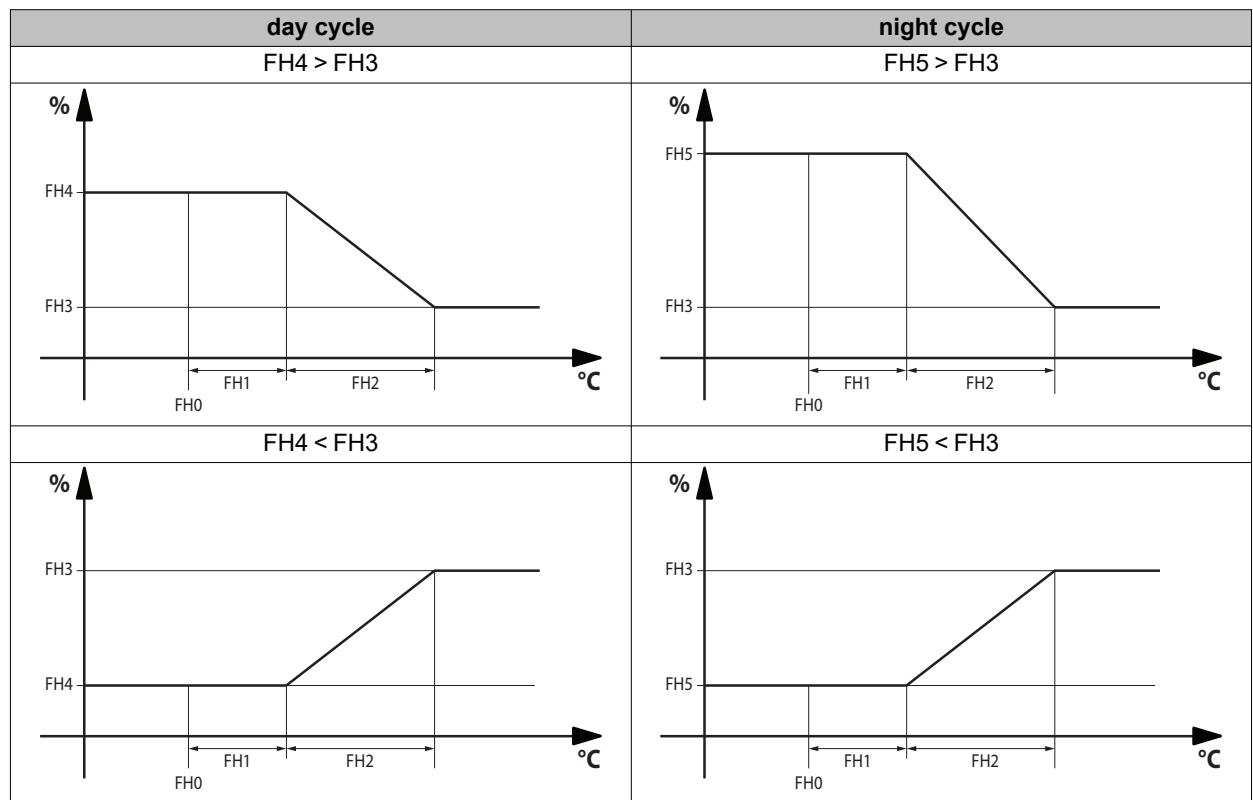
Analog output (4...20 mA / 0...10 V): fixed regulation percentage.



Legend: **1** = Day; **2** = Night; **3** = Defrost.

### Regulation on glass sensor

Regulation on glass sensor is activated by using **FH** to set the desired probe (diS=disabled; dc=Duty Cycle; Pb1...Pb5=probe Pb1...Pb5; Pbi=virtual probe; Pfi=filtered virtual probe). The output value depends on probe value. Refer to following charts:



During the defrost phase the output will be set to the fixed value indicated by parameter **FH6**.

If a probe error is detected, the output is forced to:

- **FH4** during day cycle
- **FH5** during night cycle

The regulator can modulate the analog output (4...20 mA / 0...10 V), or it can modulate the Open Collector output (in this case the period is set by parameter **FHt**).

**Note:** The analog output (4...20 mA / 0...10 V) does not use parameter **FHt**.

**Note:** The meter controlling the timings of parameter **FHt** (on the basis of **FH4**, **FH5** and **FH6**) is not restored as soon as the status changes (Day, Night, Defrost), but waits for the current countdown to be completed.



## Regulation on glass sensor with dew point

Regulation is largely the same as for the previous section; the only difference is in the setpoint value **FH0** which is changed remotely (remote dew point) and managed by the Supervisor by means of serial commands.

When it is switched on, the regulator loads the setpoint value indicated by parameter **FH0**. This regulation setpoint value can be changed and saved remotely.

**Note:** remote setpoint updating should be submitted within 60 minutes, otherwise the regulator will restore the value of parameter **FH0**.

## Parameters

| Parameter  | Description                                                                                                             |
|------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>FH</b>  | Probe used by the anti-sweater heaters.                                                                                 |
| <b>FHt</b> | Anti-sweater heater operating period duration (FH), only used if the OC (Open Collector) output is used with SSR relay. |
| <b>FH0</b> | Setpoint corresponding to the anti-sweater heaters.                                                                     |
| <b>FH1</b> | Offset corresponding to the anti-sweater heaters.                                                                       |
| <b>FH2</b> | Band corresponding to the anti-sweater heaters.                                                                         |
| <b>FH3</b> | Minimum percentage for anti-sweater heaters.                                                                            |
| <b>FH4</b> | Maximum percentage for the day Duty Cycle.                                                                              |
| <b>FH5</b> | Maximum percentage for the night Duty Cycle.                                                                            |
| <b>FH6</b> | Anti-sweater heaters percentage during defrost.                                                                         |

## Auxiliary Output (AUX)

### Description

By setting a relay as an auxiliary output **AUX** with parameter **H2x**= 5 and pressing the key associated with **H3x** = 5, the relay activates if it was previously off and vice-versa. The status of the relay is stored in non-volatile memory, which means when the power is restored after a black-out the device resumes operation with the status it was in before the black-out occurred.

By setting a digital input with **H1x** =  $\pm 5$  or **i0x** =  $\pm 5$ , its activation will ensure that the relay mirrors the status of the digital input. In this case the relay status is not memorized.

**Note:** When the device is off, only the digital input and the associated key can change the status of the output.

**Note:** Always use the same activation mode for the relay set as AUX. For example, if the relay is activated via Digital Input and deactivated via key, when the Digital Input status changes, the relay will not change status as it has already been activated via key.

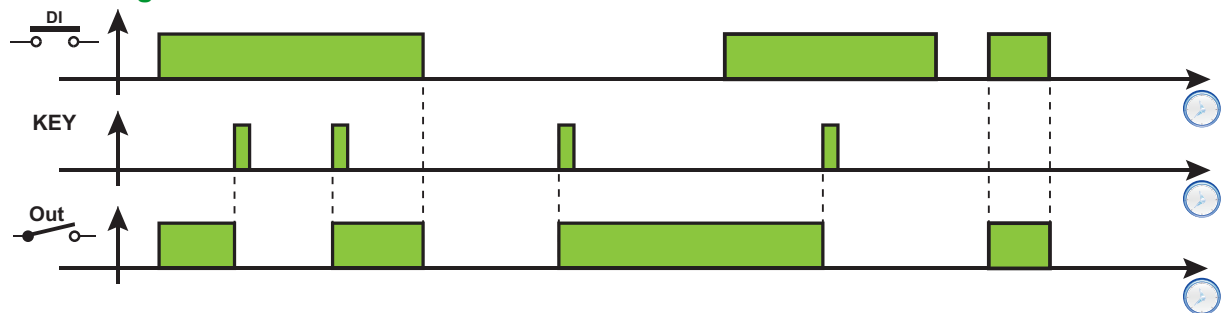
### Activation

The auxiliary output (AUX) can be activated in one of the following ways:

- press and hold a key with **H3x** = 5
- activating a digital input with **H1x** =  $\pm 5$  or **i0x** =  $\pm 5$
- via RTC by setting an event
- using a Supervisor, via Modbus command (serial)
- via Link2 network

**Note:** During stand-by the regulator operates in accordance with parameter **H08**, while at start-up it is deactivated.

### Regulation diagram



**Legend:** DI = Digital input; KEY = Key; Out = Digital output

### Parameters

| Parameter        | Description                                              |
|------------------|----------------------------------------------------------|
| <b>H08</b>       | Stand-by operating mode                                  |
| <b>H11...H18</b> | Digital input 1...8 /polarity configuration.             |
| <b>i01...i02</b> | Digital input 9 and 10 /polarity configuration (on KDX). |
| <b>H21...H25</b> | Configuration of digital outputs Out 1...Out 5           |
| <b>H31...H37</b> | Key configuration.                                       |

## Auxiliary Output (Light)

### Description

By setting a relay as auxiliary output **Light** with parameter **H2x** = 7 and pressing the key associated with **H3x** = 3, the relay activates if it was previously off and vice-versa. The status of the relay is stored in non-volatile memory, which means when the power is restored after a black-out the device resumes operation with in the status it was in before the black-out occurred.

By setting a digital input with **H1x** =  $\pm 3$  or **i0x** =  $\pm 3$ , its activation will ensure that the relay mirrors the status of the digital input. In this case the relay status is not memorized.

**Note:** When the device is off, only the digital input and the associated key can change the status of the output.

**Note:** Always use the same activation mode for the relay set as Light. For example, if the relay is activated via Digital Input and deactivated via key, when the Digital Input status changes, the relay will not change status as it has already been activated via key.

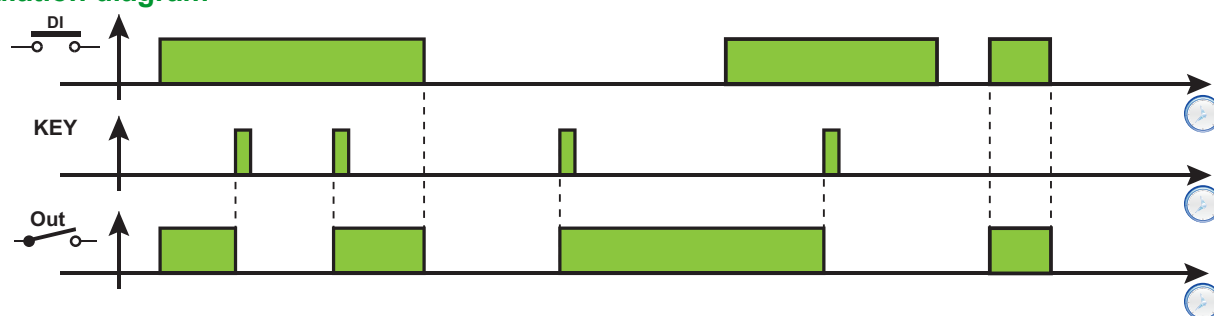
### Activation

The auxiliary output (Light) can be activated in one of the following ways:

- press and hold a key with **H3x** = 3
- activating a digital input with **H1x** =  $\pm 3$  or **i0x** =  $\pm 3$
- via RTC by setting an event
- using a Supervisor, via Modbus command (serial)
- via Link2 network

**Note:** During stand-by the regulator operates in accordance with parameter **H08**, while at start-up it is deactivated.

### Regulation diagram



**Legend:** DI = Digital input; KEY = Key; Out = Digital output

### Parameters

| Parameter        | Description                                              |
|------------------|----------------------------------------------------------|
| <b>H08</b>       | Stand-by operating mode                                  |
| <b>H11...H18</b> | Digital input 1...8 /polarity configuration.             |
| <b>i01...i02</b> | Digital input 9 and 10 /polarity configuration (on KDX). |
| <b>H21...H25</b> | Configuration of digital outputs Out 1...Out 5           |
| <b>H31...H37</b> | Key configuration.                                       |

## Door control / External alarm

### Description

By setting **H1x** =  $\pm 8$  it is possible to connect a door switch to the digital input.

Digital Input activation:

- If **dCO** = 0: activates the alarm and disables the compressor and/or fans
- If **dCO**  $\neq$  0: waits until the **dCO** delay period is elapsed, activates the alarm and then disables the compressor and/or fans.

If the door is opened during a defrost cycle, the cycle is not inhibited.

### Operating mode

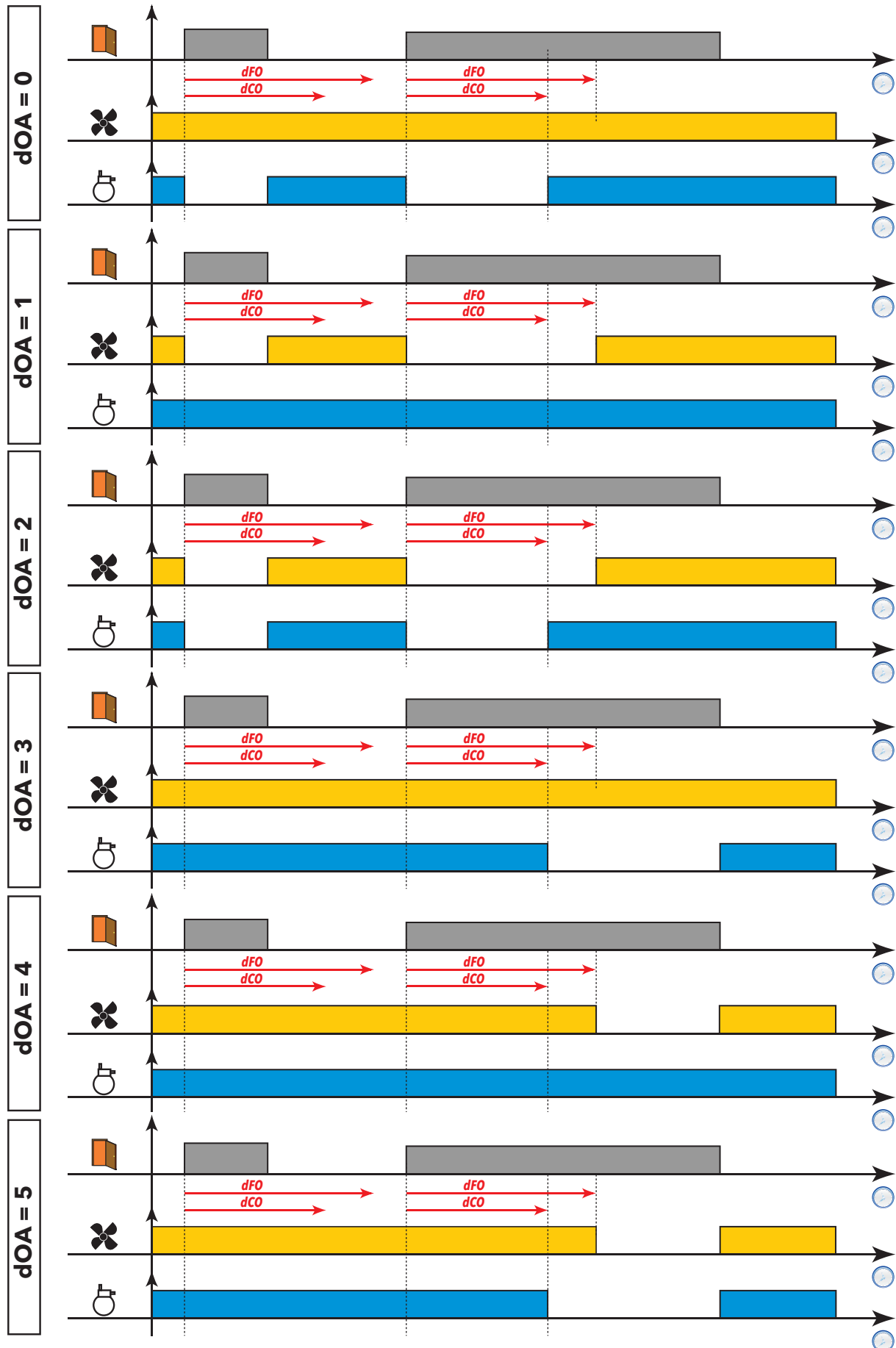
Parameters involved:

- **dod**: inhibits the regulators if the digital input (set as door switch) is activated. Any safety timings will nevertheless be observed.
  - **0** = function disabled
  - **1** = disables fans
  - **2** = disables compressor
  - **3** = disables compressor and fans
- **EAL**: inhibits the regulators if the digital input (configured as external alarm) is activated.
  - **0** = no resources inhibited
  - **1** = compressor and defrost inhibited
  - **2** = compressor, defrost and fans inhibited
- **dOA**: Defines what should be activated/disabled when the digital input is activated/disabled (only if **PEA**  $\neq$  0).
  - **0** = activates compressor
  - **1** = activates fans
  - **2** = activates compressor and fans
  - **3** = disables compressor
  - **4** = disables fan
  - **5** = disables compressor and fans
- **PEA**: Links the door switch and/or external alarm to parameter **dOA**:
  - **0** = function disabled
  - **1** = function linked to the door switch
  - **2** = function linked to the external alarm
  - **3** = function linked to the door switch and the external alarm
- **dCO**: Compressor activation/shutoff delay (0...250 min)
- **dFO**: Evaporator fan activation/shutoff delay (0 ... 250 min)
- **tdO**: Door open alarm exclusion time (0...250 min). The door open alarm will be activated if the door remains open for a time greater than the value of this parameter.

The way in which parameters **dCO** and **dFO** act depends on how parameter **dOA** is configured. Refer to the figures below.

**Note:** If the door is opened during a defrost cycle, the defrost continues normally.

The graphs below illustrate fan operation in accordance with the value **dOA**.



## Stand-by

### Description

The stand-by function maintains the controller power supply and, depending on the value of parameter **H08**:

- switches off the display or shows **oFF**
- deactivates all regulators (or not)
- excludes alarms (or not)

**Note:** when the device is off, all the relays are de-energized except for the key and the digital input set as light or door switch.

### Activation

The stand-by function can be activated in one of the following ways:

- press and hold a key with **H3x = 6**
- digital input (only if **H1x = ±7**)
- using a Supervisor, via Modbus command (serial)

When the device is switched on via key or digital input, regular device operation begins as at start-up.

**Note:** the digital input takes priority over the key. If both are configured, the key command will be excluded.

### Operation

When the stand-by function is activated, depending on the setting for **H08**, the following will occur:

- **H08 = 0:** display off, the regulators remain active and the instrument can activate the alarm icon(●) when an alarm occurs
- **H08 = 1:** display off, all relays are de-energized and the alarms deactivated
- **H08 = 2:** the display shows the text **OFF**, all relays are de-energized and the alarms deactivated

On exiting stand-by function, the temperature alarm is excluded for the time period set with parameter **PAO**; the outputs are deactivated for the time period set with parameter **OdO**. The meters for parameters **PAO** and **OdO** are reset every time the controller is switched off.

If stand-by had been active when the controller was switched off (both as the result of a blackout and voluntarily), it will also be active the next time it is switched on.

## Soft Start

### Description

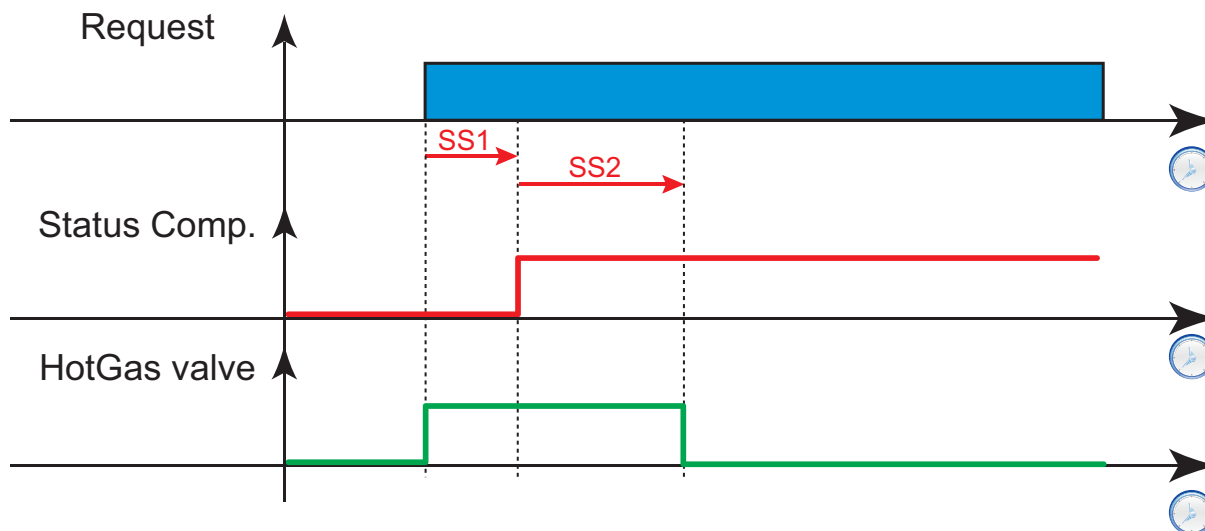
Soft Start requires the hot gas valve to open before compressor start-up to reduce the pressure differential. After compressor start-up the valve will be closed.

### Operating conditions

The parameters involved in regulation are **SS1** and **SS2**.

- **SS1**: sets the time (in seconds) between hot gas valve opening and compressor startup. This count starts as soon as all protection times relating to compressor power-on have elapsed.
- **SS2**: sets the time (in seconds) between compressor startup and hot gas valve closure.

### Regulation diagram



**Legend:** Request = Request cooling; Status Comp. = Compressor Status; HotGas valve = Hot Gas valve.

## Pump down (Pump out)

### Description

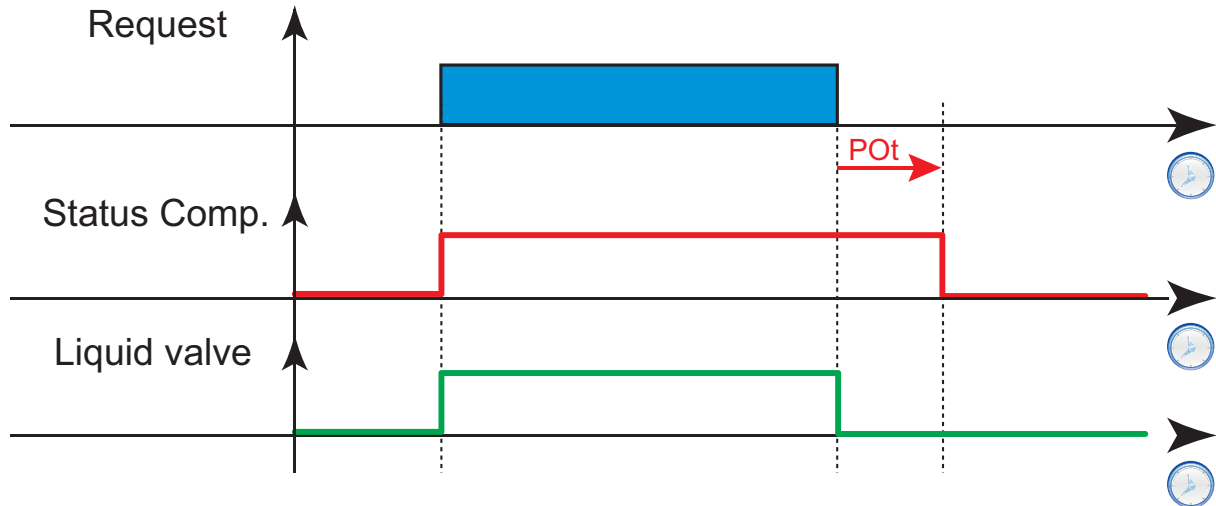
If parameter **Pot**≠0, the compressor will continue to run for a time period **Pot** (in seconds) after the evaporator valve closes.

### Operating conditions

The liquid valve and the compressor will be active at the same time except:

- during the pump down / pump out phase
- during defrost

### Regulation diagram



**Legend:** **Request** = Request cooling; **Status Comp.** = Compressor Status; **Liquid valve** = Liquid valve.



## Compressor oil heater

### Description

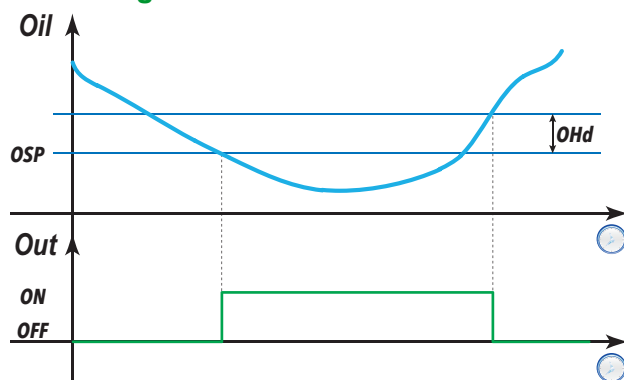
This is an ON-OFF type regulator. The heating element heating the compressor oil can be controlled with a dedicated thermostat and probe.

### Operating conditions

The output configured as compressor oil heater (**H2x** = 15) will be off:

- if there is a probe error or the probe is not configured
- when the machine is in stand-by
- during the delay countdown **OdO** at startup

### Regulation diagram



### Parameters

| Parameter  | Description                                     |
|------------|-------------------------------------------------|
| <b>OHP</b> | Sets the regulation probe used.                 |
| <b>OSP</b> | Sets the regulation setpoint.                   |
| <b>OHd</b> | Sets the regulation differential.               |
| <b>OHS</b> | Maximum value that can be set for the setpoint. |
| <b>OLS</b> | Minimum value that can be set for the setpoint. |

## Counter Cleaning Function

### Description

This function is used for counter maintenance and:

- to activate the function
- advance along "Clean status 1" and "Clean status 2" (**A** and **B**) by pressing the associated key (**H3x** = 9).

### Operating conditions

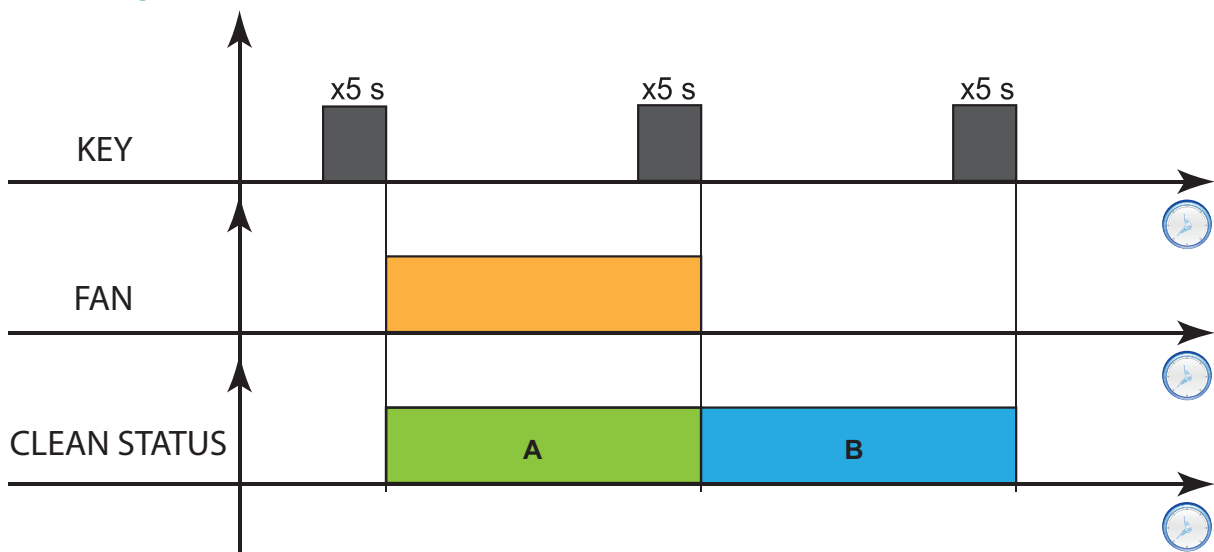
If activated, compressor 2 will use the same setpoint and differential as compressor 1. If offsets are applied to the setpoint and/or to the differential due to the energy saving function (or other conditions), the second compressor will also be influenced by these offsets.

During normal operation:

- Pressing the associated key (**KEY**) offers entry to "Clean status 1" mode (**A**) and:
  - fans on and all other loads deactivated
  - fan icon (**FAN**) on
  - display shows label **CLn**
- On pressing the associated key (**KEY**) a second time, the device switches to "Clean status 2" mode (**B**) and:
  - all loads are deactivated
  - display shows label **CLn**
- Pressing the associated key (**KEY**) a third time means the device exits the counter Cleaning Function and resumes normal operation.

**Note:** If there is no power, when the device is started up again it resumes normal operation (the function is canceled)

### Regulation diagram



**Legend:** KEY = Key; FAN = Fans; CLEAN STATUS = Counter cleaning function

---

# Practical examples

---

## Contents

This section includes the following topics:

|                                                           |     |
|-----------------------------------------------------------|-----|
| Floating suction for positive superheat $\geq 4$ K) ..... | 160 |
| Floating suction with low superheat ( $\sim 0$ K) .....   | 161 |

## Floating suction for positive superheat $\geq 4$ K)

### Application

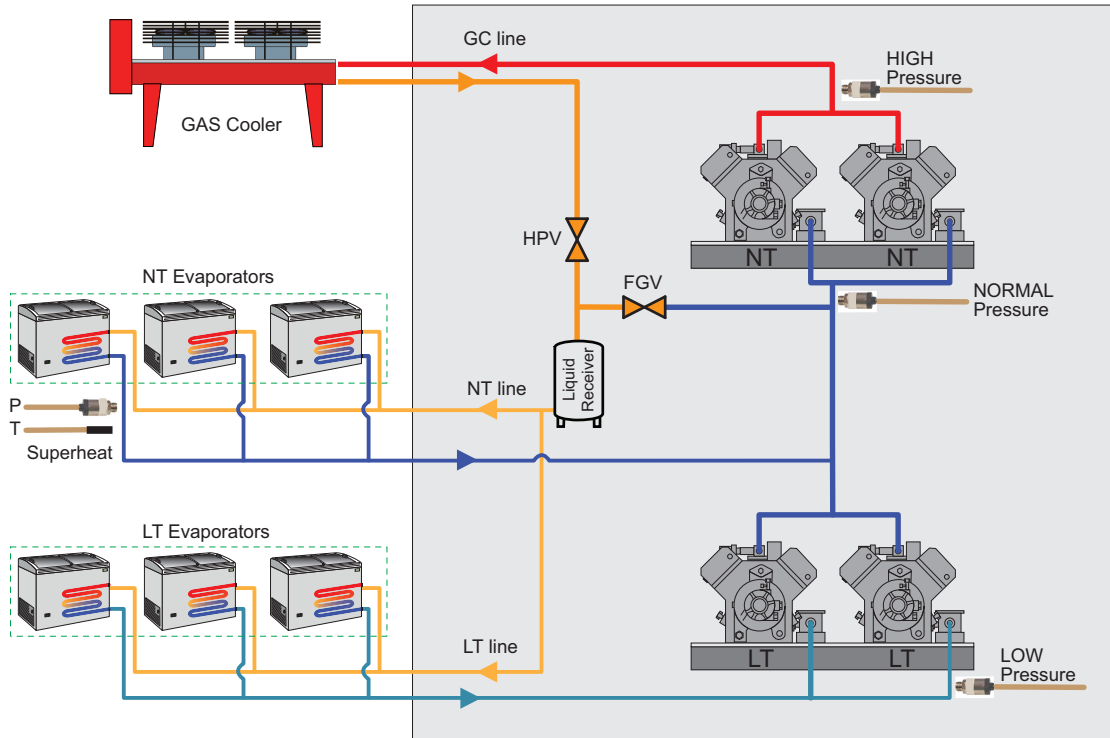
This example describes a “Floating suction for positive superheat” application.

If the device is connected to a TelevisGo and a **EWCM 9000 PRO DOMINO**, its “Floating Suction” control algorithm can be used (see relevant User Manual).

The TelevisGo will carry out the following steps:

- Reading the demand for all associated system evaporators originating from the device
- Calculating the increase / reduction in normal suction parameters within the limits
- Sending the normal suction pressure setpoint to the **EWCM 9000 PRO DOMINO** device

### Diagram



#### Legend:

- **Gas Cooler** = Gas Cooler
- **NT Evaporator** = Normal temperature evaporators
- **LT Evaporator** = Low temperature evaporators
- **Liquid Receiver** = Liquid receiver
- **Heat Exchanger** = Heat exchanger
- **HIGH Pressure** = High pressure transducer
- **NORMAL Pressure** = Normal temperature (NT) suction pressure transducer
- **LOW Pressure** = Low pressure transducer
- **Superheat** = Temperature sensor (T) and superheat pressure transducer (P)
- **GC** = Gas Cooler Line
- **NT line** = Normal temperature line
- **LT line** = Low temperature line
- **HPV** = High pressure valve
- **FGV** = Flash gas valve

## Floating suction with low superheat (~ 0 K)

### Application

This example describes a “Floating suction with low superheat and near-zero values” application.

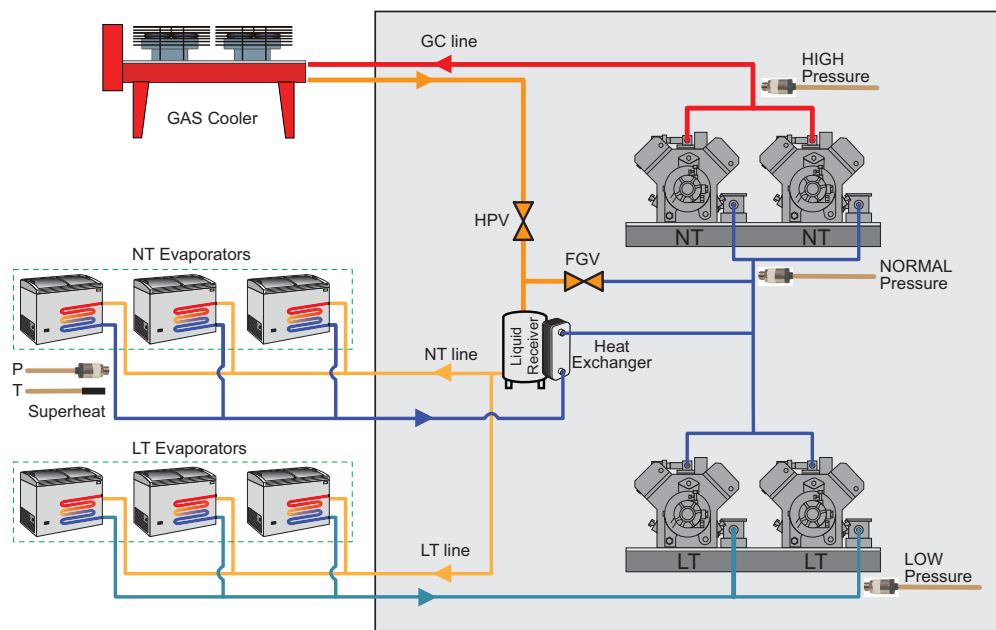
If the device is connected to a TelevisGo and a **EWCM 9000 PRO DOMINO**, its “Floating Suction” control algorithm can be used (see relevant User Note).

The TelevisGo will carry out the following steps:

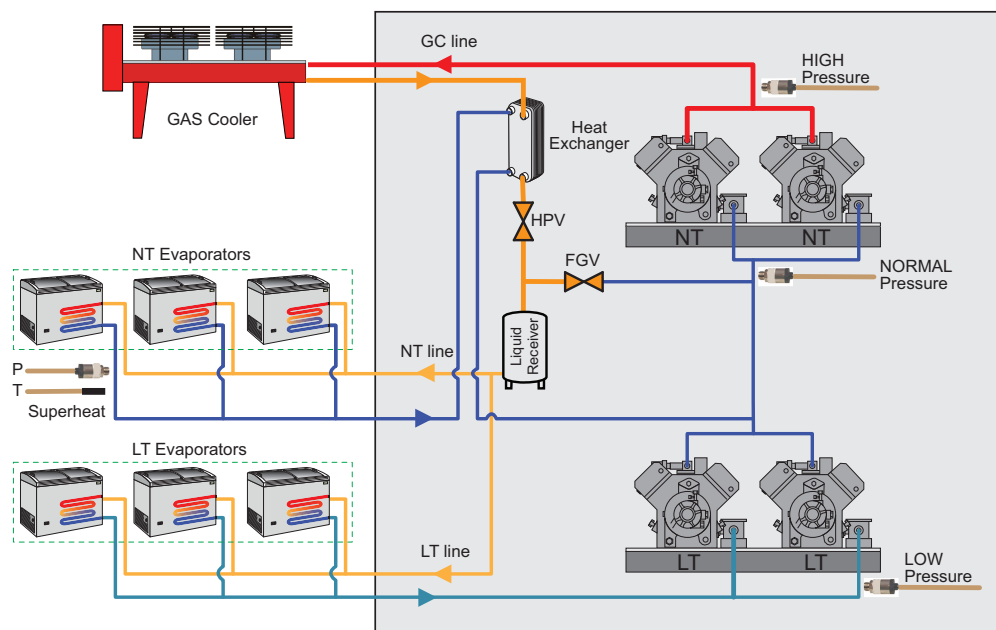
- Reading the demand for all associated system evaporators originating from the device
- Calculating the increase / reduction in normal suction parameters within the limits
- Sending the normal suction pressure setpoint to the **EWCM 9000 PRO** device

### Wiring diagrams

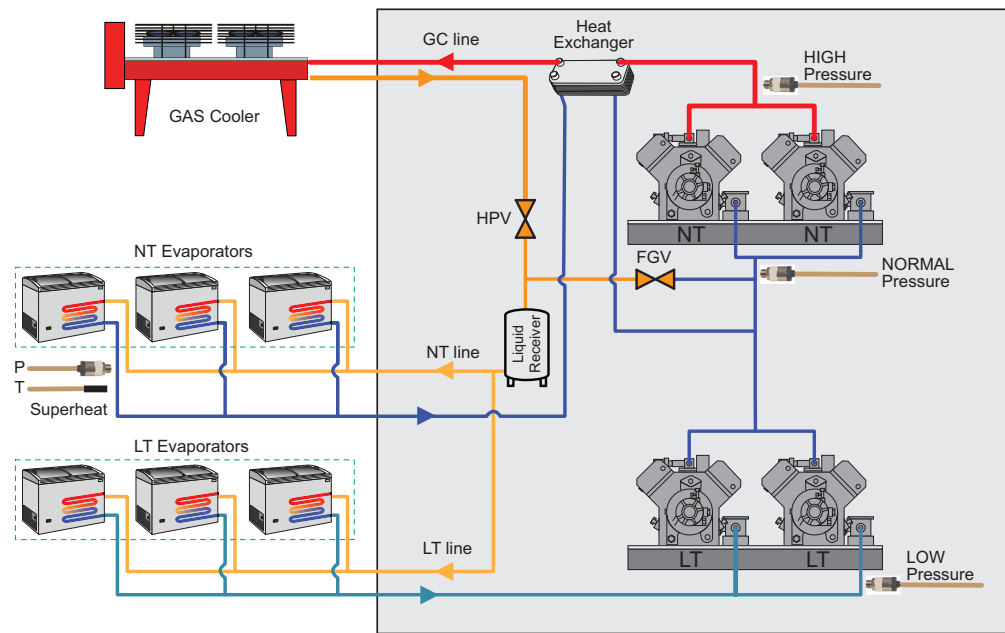
**Example 1: Regenerative exchanger in the liquid receiver.**



**Example 2: Regenerative exchanger in series with the Gas Cooler.**



### Example 3: Regenerative exchanger on the high pressure line.



#### Legend:

- **Gas Cooler** = Gas Cooler
- **NT Evaporator** = Normal temperature evaporators
- **LT Evaporator** = Low temperature evaporators
- **Liquid Receiver** = Liquid receiver
- **Heat Exchanger** = Heat exchanger
- **HIGH Pressure** = High pressure transducer
- **NORMAL Pressure** = Normal temperature (NT) suction pressure transducer
- **LOW Pressure** = Low pressure transducer
- **Superheat** = Temperature sensor (T) and superheat pressure transducer (P)
- **GC** = Gas Cooler Line
- **NT line** = Normal temperature line
- **LT line** = Low temperature line
- **HPV** = High pressure valve
- **FGV** = Flash gas valve

---

# Diagnostics

---

## Contents

This section includes the following topics:

|                                             |     |
|---------------------------------------------|-----|
| Alarms and indications .....                | 164 |
| Probe alarms .....                          | 167 |
| Minimum and maximum temperature alarm ..... | 168 |
| Defrost ended due to timeout alarm .....    | 170 |
| External alarm .....                        | 171 |
| Door open alarm .....                       | 172 |

## Alarms and indications

### Detecting an alarm condition

If there is an alarm condition, the alarm icon (●) comes on steadily. If present and enabled, the buzzer and alarm relay are also activated.

**Note:** If alarm exclusion timings are in progress, the alarm is not signaled.

All active alarms, except those relating to probe error, are listed in the **ALr** folder within the "Machine status" menu.

Alarms resulting from a probe error will be shown on the display by means of label E1...E8, EL or Ei depending on whether it concerns Pb1...Pb8, Link2 or the Virtual Probe respectively.

### Silencing the buzzer

Press any key or use the menu function: the buzzer is silenced, the alarm icon (●) flashes and the alarm relay is de-energized.

### Alarms legend

| Code      | Description                           | Cause                                                                                                                                                                      | Effects                                                                                            | Solutions                                                                                                                                          |
|-----------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>E1</b> | Probe Pb1 in error                    | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>E1</b> shown</li> <li>Steady alarm icon (●)</li> </ul>   | <ul style="list-style-type: none"> <li>Verify the probe type (<b>H00</b>).</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>    |
| <b>E2</b> | Probe Pb2 in error                    | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>E2</b> shown</li> <li>Steady alarm icon (●)</li> </ul>   | <ul style="list-style-type: none"> <li>Verify the probe type (<b>H00</b>).</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>    |
| <b>E3</b> | Probe Pb3 in error                    | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>E3</b> shown</li> <li>Steady alarm icon (●)</li> </ul>   | <ul style="list-style-type: none"> <li>Verify the probe type (<b>H00</b>).</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>    |
| <b>E4</b> | Probe Pb4 in error                    | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>E4</b> shown</li> <li>Steady alarm icon (●)</li> </ul>   | <ul style="list-style-type: none"> <li>Verify the probe type (<b>H00</b>).</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>    |
| <b>E5</b> | Probe Pb5 in error                    | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>E5</b> shown</li> <li>Steady alarm icon (●)</li> </ul>   | <ul style="list-style-type: none"> <li>Verify the probe type (<b>H00</b>).</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>    |
| <b>E6</b> | Probe Pb6 in error (4...20 mA)        | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>E6</b> shown</li> <li>Steady alarm icon (●)</li> </ul>   | <ul style="list-style-type: none"> <li>Verify the probe type.</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>                 |
| <b>E7</b> | Probe Pb7 in error (ratiometric)      | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>E7</b> shown</li> <li>Steady alarm icon (●)</li> </ul>   | <ul style="list-style-type: none"> <li>Verify the type of probe (<b>trA</b>).</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul> |
| <b>E8</b> | Probe Pb8 on KDX in error (4...20 mA) | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>E8</b> shown</li> <li>Steady alarm icon (●)</li> </ul>   | <ul style="list-style-type: none"> <li>Verify the probe type.</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>                 |
| <b>EL</b> | Link <sup>2</sup> probe in error      | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>EL</b> appears</li> <li>Steady alarm icon (●)</li> </ul> | <ul style="list-style-type: none"> <li>Verify the probe type.</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>                 |
| <b>Ei</b> | Virtual probe in error                | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>Ei</b> appears</li> <li>Steady alarm icon (●)</li> </ul> | <ul style="list-style-type: none"> <li>Verify the probe type.</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>                 |



| Code       | Description                                                 | Cause                                                                                                                                                 | Effects                                                                                                                                                                                                                                               | Solutions                                                                                                                                                                                                                                                         |
|------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AL1</b> | Low temperature alarm 1                                     | Value read by probe 1 < <b>LA1</b> after time equal to <b>tA1</b> (see section Minimum and maximum temperature alarm).                                | <ul style="list-style-type: none"> <li>Alarm <b>AL1</b> added to folder <b>ALr</b></li> <li>No effect on regulation</li> </ul>                                                                                                                        | Wait for the temperature read by the probe selected with <b>rA1</b> to rise above the alarm threshold ( <b>LA1+AFd</b> ).                                                                                                                                         |
| <b>AH1</b> | High temperature alarm 1                                    | Value read by probe 1 > <b>HA1</b> after time equal to <b>tA1</b> (see section Minimum and maximum temperature alarm).                                | <ul style="list-style-type: none"> <li>Alarm <b>AH1</b> added to folder <b>ALr</b></li> <li>No effect on regulation</li> </ul>                                                                                                                        | Wait for the temperature read by the probe selected with <b>rA1</b> to fall below the alarm threshold ( <b>HA1-AFd</b> ).                                                                                                                                         |
| <b>AL2</b> | Low temperature alarm 2                                     | Value read by probe 2 < <b>LA2</b> after time equal to <b>tA2</b> (see section Minimum and maximum temperature alarm).                                | <ul style="list-style-type: none"> <li>Alarm <b>AL2</b> added to folder <b>ALr</b></li> <li>No effect on regulation</li> </ul>                                                                                                                        | Wait for the temperature read by the probe selected with <b>rA2</b> to rise above the alarm threshold ( <b>LA2+AFd</b> ).                                                                                                                                         |
| <b>AH2</b> | High temperature alarm 2                                    | Value read by probe 2 > <b>HA2</b> after time equal to <b>tA2</b> (see section Minimum and maximum temperature alarm).                                | <ul style="list-style-type: none"> <li>Alarm <b>AH2</b> added to folder <b>ALr</b></li> <li>No effect on regulation</li> </ul>                                                                                                                        | Wait for the temperature read by the probe selected with <b>rA2</b> to fall below the alarm threshold ( <b>HA2-AFd</b> ).                                                                                                                                         |
| <b>OPd</b> | Door open alarm                                             | Digital input activation ( <b>H1x</b> = $\pm 8$ or <b>i0x</b> = $\pm 8$ ) for a time greater than <b>tDo</b> .                                        | <ul style="list-style-type: none"> <li>Alarm <b>OPd</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> <li>Regulator inhibited, on the basis of parameter <b>dod</b></li> </ul>                                                       | <ul style="list-style-type: none"> <li>Close the door</li> <li>Increase the value of parameter <b>OA0</b></li> </ul>                                                                                                                                              |
| <b>EA</b>  | External alarm                                              | Digital input activation ( <b>H1x</b> = $\pm 6$ or <b>i0x</b> = $\pm 6$ ).                                                                            | <ul style="list-style-type: none"> <li>Alarm <b>EA</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> <li>Regulation inhibited if <b>EAL</b> = y</li> </ul>                                                                           | Verify and remove the external cause that caused the alarm on the digital input.                                                                                                                                                                                  |
| <b>Prr</b> | Preheat alarm                                               | Preheat input regulator alarm active.                                                                                                                 | <ul style="list-style-type: none"> <li><b>Prr</b> shown</li> <li>Compressor icon flashing</li> <li>Regulation inhibited (compressor and fans)</li> </ul> <p><b>Note:</b> defrost will also be inhibited if it is cycle inversion or hot gas type.</p> | Preheat input regulator OFF.                                                                                                                                                                                                                                      |
| <b>Ad2</b> | Defrost end due to timeout                                  | End of defrost due to timeout, instead of the defrost end temperature being reached.                                                                  | <ul style="list-style-type: none"> <li>Alarm <b>Ad2</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> </ul>                                                                                                                          | Wait for the next defrost for automatic deactivation.                                                                                                                                                                                                             |
| <b>E10</b> | Clock alarm                                                 | <ul style="list-style-type: none"> <li>Clock (RTC) battery low</li> <li>RTC not working.</li> </ul>                                                   | <ul style="list-style-type: none"> <li>Alarm <b>E10</b> added to folder <b>ALr</b></li> <li>Functions connected to the clock not present or not synchronized with the current timings</li> </ul>                                                      | Set the correct time. If the error persists, replace the instrument (RTC battery low)                                                                                                                                                                             |
| <b>E11</b> | Power-Pack alarm                                            | <ul style="list-style-type: none"> <li>Power-Pack missing</li> <li>Insufficient voltage (Power-Pack charging)</li> </ul>                              | <ul style="list-style-type: none"> <li>Alarm <b>E11</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> <li>Valve closure not guaranteed</li> </ul>                                                                                    | <b>FOR EXPERT USERS</b> <ul style="list-style-type: none"> <li>Verify the Power-Pack is present (parameter <b>Ety</b>)</li> <li>Make sure the Power-Pack is inserted correctly</li> <li>wait for Power-Pack to charge/make sure it is properly charged</li> </ul> |
| <b>E13</b> | Valve driver protection enabled                             | <ul style="list-style-type: none"> <li>Incorrect valve connection</li> <li>Valve not working</li> <li>Overcurrent detected on valve inputs</li> </ul> | <ul style="list-style-type: none"> <li>Alarm <b>E13</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> <li>Regulation inhibited</li> </ul>                                                                                            | <ul style="list-style-type: none"> <li>Verify valve connection</li> <li>Make sure there are no short-circuits on the valve output.</li> </ul>                                                                                                                     |
| <b>E14</b> | Alarm signaling no communication between base and expansion | Internal communication alarm                                                                                                                          | <ul style="list-style-type: none"> <li>Alarm <b>E14</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> <li>Regulation inhibited</li> </ul>                                                                                            | <ul style="list-style-type: none"> <li>Verify communication with supervision is working</li> <li>Make sure nothing is connected to the UNICARD/MFK connector.</li> </ul>                                                                                          |

| Code       | Description                                  | Cause                                                                                                                                                                      | Effects                                                                                                                                                                                                                                                                                                                                                                                                | Solutions                                                                                                                                                                                                                                                                           |
|------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>E15</b> | Power-Pack alarm                             | Power-Pack module not working.                                                                                                                                             | <ul style="list-style-type: none"> <li>Alarm <b>E15</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> <li>Valve closure not guaranteed</li> </ul>                                                                                                                                                                                                                                     | <b>FOR EXPERT USERS</b> <ul style="list-style-type: none"> <li>Verify the Power-Pack is present (parameter <b>Ety</b>)</li> <li>Replace the Power-Pack, wait for it to charge (alarm <b>E11</b> reset) and close the valve by cutting off the power supply to the device</li> </ul> |
| <b>EEP</b> | Valve MOP alarm                              | The saturation temperature has exceeded the threshold value set by parameter <b>Hot</b> .                                                                                  | <ul style="list-style-type: none"> <li>Alarm <b>EEP</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> </ul>                                                                                                                                                                                                                                                                           | The temperature falls back below the value <b>Hot</b> .                                                                                                                                                                                                                             |
| <b>EEt</b> | Max valve output alarm                       | The output valve is fully open (see parameter <b>U02</b> ).                                                                                                                | <ul style="list-style-type: none"> <li>Alarm <b>EEt</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> </ul>                                                                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>Verify valve connection</li> <li>Verify superheat probe connection / operation.</li> </ul>                                                                                                                                                   |
| <b>EES</b> | Saturation probe in error                    | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul> | <ul style="list-style-type: none"> <li><b>EES</b> shown</li> <li>Steady alarm icon (●)</li> </ul>                                                                                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Verify the type of probe (<b>rSP</b>).</li> <li>Verify the probe wiring.</li> <li>Replace probe.</li> </ul>                                                                                                                                  |
| <b>LEL</b> | Low leak detection threshold                 | The value remains under the threshold <b>ALL</b> for a time period greater than AL1.                                                                                       | <ul style="list-style-type: none"> <li>Alarm <b>LEL</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> </ul>                                                                                                                                                                                                                                                                           | The temperature rises back above the value <b>ALL</b> .                                                                                                                                                                                                                             |
| <b>LEH</b> | High leak detection threshold                | The value remains over the threshold <b>ALH</b> for a time period greater than AL2.                                                                                        | <ul style="list-style-type: none"> <li>Alarm <b>LEH</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> </ul>                                                                                                                                                                                                                                                                           | The temperature falls back below the value <b>ALH</b> .                                                                                                                                                                                                                             |
| <b>PAn</b> | Panic alarm (only present with KDX terminal) | Activation of suitably configured digital input ( <b>H1x</b> = ±19 or <b>i0x</b> = ±19).                                                                                   | <ul style="list-style-type: none"> <li>Alarm <b>PAn</b> added to folder <b>ALr</b></li> <li>Steady alarm icon (●)</li> <li>Steady panic alarm icon (⚠)</li> <li>No effect on regulation</li> </ul>                                                                                                                                                                                                     | Verify and remove the external cause that caused the alarm on the digital input.                                                                                                                                                                                                    |
| <b>ELi</b> | Incorrect number of devices                  | The number of instruments detected within the Link2 network is different from the number set with <b>L11</b> .                                                             | <ul style="list-style-type: none"> <li><b>ELi</b> appears</li> <li>Steady alarm icon (●)</li> </ul>                                                                                                                                                                                                                                                                                                    | Align the number of devices in the Link2 network with the value of parameter <b>L11</b> .                                                                                                                                                                                           |
| <b>nPA</b> | Pressure switch alarm                        | Pressure switch alarm activation caused by the external pressure switch.                                                                                                   | If the number <b>n</b> of pressure switch activations is lower than <b>PEn</b> : <ul style="list-style-type: none"> <li><b>nPA</b> alarm is added to the folder <b>AL</b> with the number of pressure switch activations</li> <li>Compressor regulation inhibited</li> </ul>                                                                                                                           | Verify and remove the cause that triggered the alarm on the digital input (automatic reset) (see Pressure switch)                                                                                                                                                                   |
| <b>PAL</b> | Pressure switch alarm                        | Pressure switch alarm activation caused by the external pressure switch.                                                                                                   | If the number <b>N</b> of pressure switch activations is <b>N</b> = <b>PEn</b> in a time period < <b>PEi</b> : <ul style="list-style-type: none"> <li><b>PAL</b> is shown</li> <li>Alarm <b>PA</b> is added to the folder <b>AL</b> and alarm <b>nPA</b> is removed from the folder <b>AL</b></li> <li>Steady alarm icon (⚠)</li> <li>Compressor regulation, fans and defrost are inhibited</li> </ul> | <ul style="list-style-type: none"> <li>Switch the controller off and on again</li> <li>Select <b>rAP</b> (manual reset) in the functions folder to reset the alarms.</li> </ul>                                                                                                     |

**Note:** All alarms are deactivated automatically when the cause is removed.

## Probe alarms

### Description

When one of the probes is outside the nominal operating range or if the probe is open or short-circuited, an alarm is generated if this condition persists for around 10 seconds.

For all probes, the error condition causes the following actions:

- alarm code appears on the display (see table)
- alarm icon comes on steadily and alarm relay activated (if present)

When the probe error condition ceases, regulation resumes as normal. During the probe error condition, the defrost interval count continues as normal.

### Alarm acknowledgment

Codes **E1...E8**, **EL** and **Ei**, if simultaneous, are shown in the following sequence: E1 x 2 seconds, E2 x 2 seconds, E3 x 2 seconds, etc.

In alarm condition, press any key or use the menu function to acknowledge the relay configured as alarm (if present) while the alarm condition persists. The alarm icon will begin to flash.

**Note:** The probe error alarm is not stored by the device.

### Alarm codes

| Code      | Description                                    |
|-----------|------------------------------------------------|
| <b>E1</b> | Probe Pb1 in error                             |
| <b>E2</b> | Probe Pb2 in error                             |
| <b>E3</b> | Probe Pb3 in error                             |
| <b>E4</b> | Probe Pb4 in error                             |
| <b>E5</b> | Probe Pb5 in error                             |
| <b>E6</b> | Probe Pb6 (4...20 mA) in error                 |
| <b>E7</b> | Probe Pb7 (ratiometric) in error               |
| <b>E8</b> | Probe Pb8 (4...20 mA via KDX) in error         |
| <b>EL</b> | LINK <sup>2</sup> probe in error / not working |
| <b>Ei</b> | VIRTUAL probe not working                      |

### Parameters

| Parameter  | Description                                             |
|------------|---------------------------------------------------------|
| <b>Ont</b> | Compressor output on time if regulation probe in error  |
| <b>Oft</b> | Compressor output off time if regulation probe in error |

## Minimum and maximum temperature alarm

### Description

The alarms operate according to the temperature read by regulation probe 1/2. The accepted temperature interval limits are set using parameters **HA1/2** and **LA1/2**.

**Note:** High and low temperature alarms are excluded during a defrost. The triggering of these alarms does not have any effect on the regulation in progress.

### Alarm acknowledgment

In alarm condition, press any key or use the menu function to acknowledge the relay configured as alarm (if present) while the alarm condition persists.

The alarm icon (●) will begin to flash.

The probe error alarm is not stored by the device.

### Alarm codes

| Code       | Description                    |
|------------|--------------------------------|
| <b>AH1</b> | Probe 1 high temperature alarm |
| <b>AL1</b> | Probe 1 low temperature alarm  |
| <b>AH2</b> | Probe 2 high temperature alarm |
| <b>AL2</b> | Probe 2 low temperature alarm  |

### Absolute or relative temperature values

Depending on the value of parameter **Att**, the temperature is expressed as an absolute or relative value (differential in respect to the setpoint):

| Att value | Label     | Description                                                                 |
|-----------|-----------|-----------------------------------------------------------------------------|
| <b>0</b>  | <b>Ab</b> | Absolute values. The <b>HA1/2</b> and <b>LA1/2</b> values must have a sign. |
| <b>1</b>  | <b>rE</b> | Relative values. <b>HA1/2</b> > 0 and <b>LA1/2</b> < 0.                     |

### Alarm conditions

The maximum/minimum alarm is triggered when the temperature of probe 1/2 is:

- Maximum alarm:  $\geq \text{HA1/2}$  if Att = AbS(0) and  $\geq (\text{SP1/2} + \text{HA1/2})$  if Att = rEL(1)
- Minimum alarm:  $\leq \text{LA1/2}$  if Att = AbS(0) and  $\leq (\text{SP1/2} + \text{LA1/2})$  if Att = rEL(1)

If Att=AbS(0) set the values of **HA1/2** and **LA1/2** with a sign.

If Att=rEL(1) set **HA1/2** > 0 and **LA1/2** < 0.

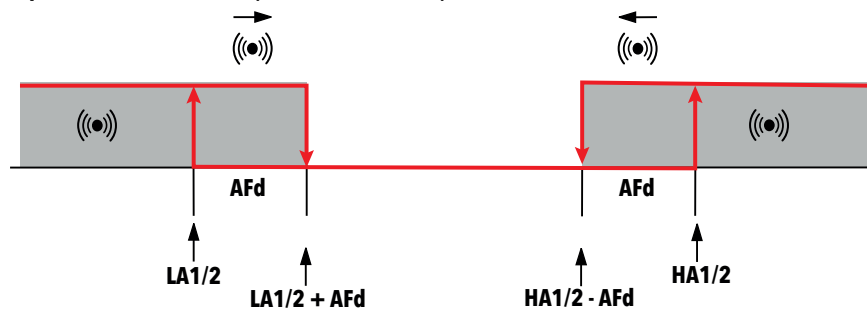
When one of the above conditions arises, if there are no alarm exclusion times applied (see alarm exclusion parameters), the alarm icon (●) comes on and the relay configured as alarm (if present) is activated.

The alarm reset takes place when the temperature of probe 1/2 is:

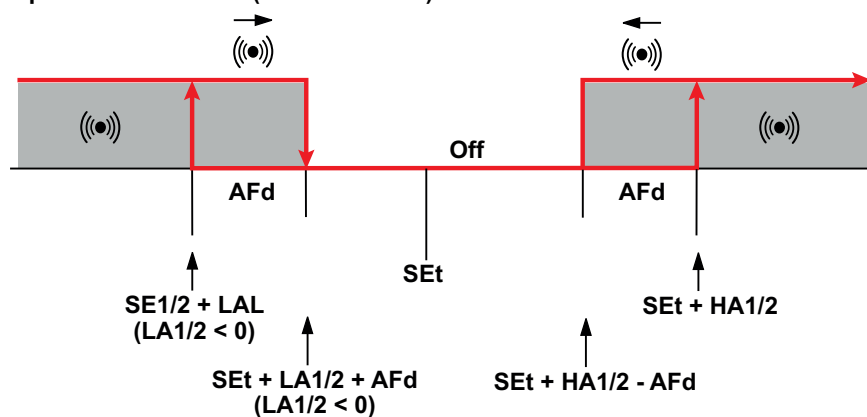
- Reset after maximum alarm:  
 $\leq (\text{HA1/2} - \text{AFd})$  if Att = AbS(0) and  $\leq (\text{SP1/2} + \text{HA1/2} - \text{AFd})$  if Att = rEL(1)
- Reset after minimum alarm:  
 $\geq (\text{LA1/2} + \text{AFd})$  if Att = AbS(0) and  $\geq (\text{SP1/2} + \text{LA1/2} + \text{AFd})$  if Att = rEL(1)

## Operating diagrams

Operation with Att=0 (absolute values)



Operation with Att=1 (relative values)



## Parameters

| Parameter  | Description                                                                 |
|------------|-----------------------------------------------------------------------------|
| <b>Att</b> | Expression mode for <b>HAL</b> and <b>LAL</b> values (absolute or relative) |
| <b>AFd</b> | Alarm activation differential                                               |
| <b>HA1</b> | Probe 1 maximum alarm threshold                                             |
| <b>LA1</b> | Probe 1 minimum alarm threshold                                             |
| <b>HA2</b> | Probe 2 maximum alarm threshold                                             |
| <b>LA2</b> | Probe 2 minimum alarm threshold                                             |
| <b>PAO</b> | Temperature alarm exclusion time from startup                               |
| <b>dAO</b> | Exclusion time for temperature alarms after a defrost cycle                 |
| <b>OAo</b> | Exclusion time for temperature alarms after closing the door                |
| <b>tA1</b> | Temperature alarm 1 signaling delay time                                    |
| <b>tA2</b> | Temperature alarm 2 signaling delay time                                    |

## Defrost ended due to timeout alarm

### Description

The alarm regulator is activated with no delay if the defrost ends due to timeout, instead of the defrost end temperature being reached by the second probe.

The action consists of:

- the alarm icon (🔔) coming on steadily
- recording Label Ad2 in the alarms menu

Automatic deactivation takes place when the next defrost begins.

It is therefore possible to switch off the alarm icon using the normal acknowledgment procedure, while to remove the alarm indication you will need to wait for the next defrost cycle to start.

### Alarm acknowledgment

In alarm condition, press any key or use the menu function to acknowledge the relay configured as alarm (if present) while the alarm condition persists. The alarm icon (🔔) will begin to flash.

### Alarm codes

| Code | Description          |
|------|----------------------|
| Ad2  | Defrost alarm on Pb2 |

### Parameters

| Parameter | Description                                  |
|-----------|----------------------------------------------|
| dE1       | Evaporator 1 defrost timeout                 |
| dE2       | Evaporator 2 defrost timeout                 |
| dAt       | Defrost ended due to timeout alarm signaling |

## External alarm

### Description

When activating the digital input, the alarm regulator will be activated with the delay set by parameter **dAd**, and this alarm remains until the next time the digital input is deactivated.

The action consists of:

- the alarm icon coming on steadily
- recording Label EA in the alarms menu
- activating the relay configured as alarm (if enabled)
- deactivating regulation if parameter **EAL** requires it.

The alarm relay can be unlocked but the regulators remain inhibited until the digital input is deactivated.

Parameter **EAL** can assume the following values:

- **EAL** = 0: an external alarm does not inhibit any resources
- **EAL** = 1: an external alarm inhibits the compressor and defrost
- **EAL** = 2: an external alarm inhibits the compressor, defrost and the fans.

### Alarm acknowledgment

In alarm condition, press any key or use the menu function to acknowledge the relay configured as alarm (if present) while the alarm condition persists. The alarm icon will begin to flash.

### Alarm codes

| Code      | Description    |
|-----------|----------------|
| <b>EA</b> | External alarm |

### Parameters

| Parameter  | Description                            |
|------------|----------------------------------------|
| <b>EAL</b> | External alarm inhibits the regulators |

## Door open alarm

### Description

The door switch alarm can be activated via a suitably configured digital input (**H1x**=± 8 or **i0x**=± 8).

When the digital input is activated (door opened), once delay **tdO** has elapsed, the door open alarm is indicated in the alarms folder and the alarm icon (☹) and alarm relay come on. The label **OPd** is shown.

The action consists of:

- the alarm icon (☹) coming on steadily
- recording Label **OPd** in the alarms menu
- activating the relay configured as alarm

As for the other alarms, the relay can be deactivated by pressing an acknowledgment key; the alarm icon will flash and label **OPd** remains in the menu until the door is closed.

If the door is opened, the regulator will work based on the value of parameter **dOd**.

It can assume the following values:

- **dOd** = 0: no resource inhibited
- **dOd** = 1: fans inhibited
- **dOd** = 2: compressor inhibited
- **dOd** = 3: fans and compressor inhibited

If the door open alarm inhibits the compressor, the latter can still be reactivated even if the door remains open by setting parameter **dCO**.

### Alarm acknowledgment

In alarm condition, press any key or use the menu function to acknowledge the relay configured as alarm (if present) while the alarm condition persists. The alarm icon will begin to flash.

### Alarm codes

| Code       | Description     |
|------------|-----------------|
| <b>OPd</b> | Door open alarm |

### Parameters

| Par.       | Description                                                             |
|------------|-------------------------------------------------------------------------|
| <b>dOd</b> | Digital input shuts off utilities.                                      |
| <b>dOA</b> | Behavior forced from digital input (if <b>PEA</b> ≠ 0).                 |
| <b>PEA</b> | Selection of digital input with resource inhibiting/unlocking function. |
| <b>dCO</b> | Compressor activation delay from acknowledgment.                        |
| <b>dFO</b> | Fan activation/switch-off delay after consent (DI activation).          |
| <b>tdO</b> | Door open alarm exclusion time                                          |



---

# Parameters

---

## Contents

This section includes the following topics:

|                                       |     |
|---------------------------------------|-----|
| User parameters RTX 600 /V .....      | 174 |
| Installer parameters RTX 600 /V ..... | 184 |

## User parameters RTX 600 /V

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Range                        | UM    |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------|
| <b>rP1</b> | Sets the probe used by thermostat 1.<br><ul style="list-style-type: none"> <li>• <b>diS</b> (0) = disabled</li> <li>• <b>Pb1</b> (1) = probe Pb1</li> <li>• <b>Pb2</b> (2) = probe Pb2</li> <li>• <b>Pb3</b> (3) = probe Pb3</li> <li>• <b>Pb4</b> (4) = probe Pb4</li> <li>• <b>Pb5</b> (5) = probe Pb5</li> <li>• <b>Pbi</b> (6) = virtual probe</li> <li>• <b>LP</b> (7) = remote probe</li> <li>• <b>PFi</b> (8) = filtered virtual probe</li> </ul>                     | diS, Pb1...Pb5, Pbi, LP, PFi | num   |
| <b>SP1</b> | Thermostat 1 regulation setpoint.                                                                                                                                                                                                                                                                                                                                                                                                                                            | LS1...HS1                    | °C/°F |
| <b>dF1</b> | Tripping differential for thermostat 1 (absolute or relative).<br><b>Note:</b> always a value other than 0.                                                                                                                                                                                                                                                                                                                                                                  | -58.0...302                  | °C/°F |
| <b>HS1</b> | Maximum value that can be attributed to setpoint SP1.<br><b>Note:</b> The two sets are interdependent: HS1 cannot be less than LS1 and vice versa.                                                                                                                                                                                                                                                                                                                           | LS1...HdL                    | °C/°F |
| <b>LS1</b> | Minimum value that can be attributed to setpoint SP1.<br><b>Note:</b> The two sets are interdependent: LS1 cannot be greater than HS1 and vice versa.                                                                                                                                                                                                                                                                                                                        | LdL...HS1                    | °C/°F |
| <b>Ont</b> | Regulator switch-on time for faulty probe:<br><ul style="list-style-type: none"> <li>• if <b>Ont</b> = 1 and <b>OFt</b> = 0 compressor always on</li> <li>• if <b>Ont</b> = 1 and <b>OFt</b> &gt; 0 compressor in duty cycle</li> </ul>                                                                                                                                                                                                                                      | 0...250                      | min   |
| <b>OFt</b> | Regulator switch-off time for faulty probe:<br><ul style="list-style-type: none"> <li>• if <b>OFt</b> = 1 and <b>Ont</b> = 0 compressor always off</li> <li>• if <b>OFt</b> = 1 and <b>Ont</b> &gt; 0 compressor in duty cycle</li> </ul>                                                                                                                                                                                                                                    | 0...250                      | min   |
| <b>OdO</b> | Output activation delay time from switching on the device or after a power outage.<br><b>0</b> = not active.                                                                                                                                                                                                                                                                                                                                                                 | 0...250                      | min   |
| <b>POt</b> | Pump down time. Sets the running time after evaporator valve closure.                                                                                                                                                                                                                                                                                                                                                                                                        | 0...250                      | s     |
| <b>dP1</b> | Sets the probe used by defrost 1 (only if <b>rE</b> ≠0).<br><ul style="list-style-type: none"> <li>• <b>diS</b> (0) = disabled</li> <li>• <b>Pb1</b> (1) = probe Pb1</li> <li>• <b>Pb2</b> (2) = probe Pb2</li> <li>• <b>Pb3</b> (3) = probe Pb3</li> <li>• <b>Pb4</b> (4) = probe Pb4</li> <li>• <b>Pb5</b> (5) = probe Pb5</li> <li>• <b>Pbi</b> (6) = virtual probe</li> <li>• <b>LP</b> (7) = remote probe</li> <li>• <b>PFi</b> (8) = filtered virtual probe</li> </ul> | diS, Pb1...Pb5, Pbi, LP, PFi | num   |
| <b>dtY</b> | Type of defrost.<br><ul style="list-style-type: none"> <li>• <b>0</b> = electric heater defrost</li> <li>• <b>1</b> = cycle inversion defrost</li> <li>• <b>2</b> = hot gas defrost for plug-in systems (with built-in compressor)</li> <li>• <b>3</b> = hot gas defrost for systems with remote group</li> <li>• <b>4</b> = modulated electric heater defrost (Smart Defrost).</li> </ul>                                                                                   | 0...4                        | num   |
| <b>dit</b> | Time interval between the start of two subsequent defrost operations.<br><b>0</b> = function disabled (defrost NEVER takes place).                                                                                                                                                                                                                                                                                                                                           | 0...250                      | hours |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Range       | UM    |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|
| <b>dCt</b> | <p>Selects defrost interval count mode.</p> <ul style="list-style-type: none"> <li>• <b>0</b> = defrost disabled</li> <li>• <b>1</b> = hours of compressor operation (DIGIFROST® method); defrosting active ONLY with compressor on</li> </ul> <p><b>Note:</b> the compressor run time is calculated independently of the evaporator probe (the calculation is active even if the evaporator probe is absent or not working).</p> <ul style="list-style-type: none"> <li>• <b>2</b> = hours of device operation; counting is always active when the machine is on and starts at every power-on</li> <li>• <b>3</b> = compressor stop. Each time the compressor stops, a defrosting cycle is performed in accordance with dtY</li> <li>• <b>4</b> = RTC</li> <li>• <b>5</b> = temperature.</li> </ul> | 0...5       | num   |
| <b>dE1</b> | Defrost 1 timeout. Sets the maximum duration of defrost 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1...250     | min   |
| <b>dS1</b> | Defrost 1 end temperature (only if <b>dP1</b> ≠diS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -58.0...302 | °C/°F |
| <b>dSS</b> | Defrost start temperature threshold (only if <b>dCt</b> =5).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -58.0...302 | °C/°F |
| <b>dPO</b> | <p>Determines whether, upon switching on, the device activates defrosting (providing that the temperature measured on the evaporator permits it).</p> <ul style="list-style-type: none"> <li>• <b>no</b> (0) = no, do not defrost at switch-on</li> <li>• <b>yES</b> (1) = yes, defrost at switch-on.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | no/yES      | flag  |
| <b>dPH</b> | <p>Regular defrost start hour (only if <b>dCt</b>=4).</p> <ul style="list-style-type: none"> <li>• <b>0...23</b> = start hour</li> <li>• <b>24</b> = disabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...24      | hours |
| <b>dPn</b> | Regular defrost start minutes (only if <b>dCt</b> =4).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0...59      | min   |
| <b>dPd</b> | Interval between one regular defrost and the next (only if <b>dCt</b> =4).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1...7       | days  |
| <b>Fd1</b> | <p>1st weekend/holiday day (only if <b>dCt</b>=4).</p> <ul style="list-style-type: none"> <li>• <b>0...6</b> = start day</li> <li>• <b>7</b> = disabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...7       | days  |
| <b>Fd2</b> | <p>2nd weekend/holiday day (only if <b>dCt</b>=4).</p> <ul style="list-style-type: none"> <li>• <b>0...6</b> = start day</li> <li>• <b>7</b> = disabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...7       | days  |
| <b>Fdn</b> | <p>Number of multiple defrosts during one weekday (only if <b>dCt</b>=4).</p> <p><b>0</b> = disabled.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...250     | num   |
| <b>FFn</b> | <p>Number of multiple defrosts during one weekend/holiday day (only if <b>dCt</b>=4).</p> <p><b>0</b> = disabled.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0...250     | num   |
| <b>PrH</b> | Basin heater pre-activation time before defrost begins.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0...255     | min   |
| <b>d1H</b> | <p>1st weekday defrost start hour (only if <b>dCt</b>=4).</p> <ul style="list-style-type: none"> <li>• <b>0...23</b> = start hour</li> <li>• <b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0...24      | hours |
| <b>d1n</b> | 1st weekday defrost start minutes (only if <b>dCt</b> =4).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0...59      | min   |
| <b>d2H</b> | <p>2nd weekday defrost start hour (only if <b>dCt</b>=4).</p> <ul style="list-style-type: none"> <li>• <b>d1H...23</b> = start hour</li> <li>• <b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | d1H...24    | hours |
| <b>d2n</b> | 2nd weekday defrost start minutes (only if <b>dCt</b> =4).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0...59      | min   |
| <b>d3H</b> | <p>3rd weekday defrost start hour (only if <b>dCt</b>=4).</p> <ul style="list-style-type: none"> <li>• <b>d2H...23</b> = start hour</li> <li>• <b>24</b> = disabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | d2H...24    | hours |
| <b>d3n</b> | 3rd weekday defrost start minutes (only if <b>dCt</b> =4).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0...59      | min   |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Range                        | UM    |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------|
| <b>d4H</b> | 4th weekday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>d3H...23</b> = start hour</li> <li><b>24</b> = disabled.</li> </ul>                                                                                                                                                                                                                                                                                               | d3H...24                     | hours |
| <b>d4n</b> | 4th weekday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                             | 0...59                       | min   |
| <b>d5H</b> | 5th weekday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>d4H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                                | d4H...24                     | hours |
| <b>d5n</b> | 5th weekday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                             | 0...59                       | min   |
| <b>d6H</b> | 6th weekday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>d5H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                                | d5H...24                     | hours |
| <b>d6n</b> | 6th weekday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                             | 0...59                       | min   |
| <b>F1H</b> | 1st weekend/holiday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>0...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                          | 0...24                       | hours |
| <b>F1n</b> | 1st weekend/holiday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                     | 0...59                       | min   |
| <b>F2H</b> | 2nd weekend/holiday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>F1H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                        | F1H...24                     | hours |
| <b>F2n</b> | 2nd weekend/holiday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                     | 0...59                       | min   |
| <b>F3H</b> | 3rd weekend/holiday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>F2H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                        | F2H...24                     | hours |
| <b>F3n</b> | 3rd weekend/holiday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                     | 0...59                       | min   |
| <b>F4H</b> | 4th weekend/holiday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>F3H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                        | F3H...24                     | hours |
| <b>F4n</b> | 4th weekend/holiday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                     | 0...59                       | min   |
| <b>F5H</b> | 5th weekend/holiday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>F4H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                        | F4H...24                     | hours |
| <b>F5n</b> | 5th weekend/holiday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                     | 0...59                       | min   |
| <b>F6H</b> | 6th weekend/holiday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>F5H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                        | F5H...24                     | hours |
| <b>F6n</b> | 6th weekend/holiday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                     | 0...59                       | min   |
| <b>FP1</b> | Sets the probe used by the evaporator fans during normal operation.<br><ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>LP</b> (7) = remote probe</li> <li><b>PFi</b> (8) = filtered virtual probe.</li> </ul> | diS, Pb1...Pb5, Pbi, LP, PFi | num   |

| PAR | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                              |     |     |     |       | Range       | UM    |         |     |  |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----|-----|-----|-------|-------------|-------|---------|-----|--|
| FSt | Fan disabling temperature. If the value read is greater than <b>FSt</b> , the fans will be stopped. The value is positive or negative (only if <b>FP1</b> ≠diS).                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                              |     |     |     |       | -58.0...302 | °C/°F |         |     |  |
| FAd | Evaporator fan activation differential (only if <b>FP1</b> ≠dis).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                              |     |     |     |       | 1.0...25.0  | °C/°F |         |     |  |
| dt  | Dripping time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                              |     |     |     |       | 0...250     | min   |         |     |  |
| dFd | Evaporator fan operating mode during a defrost. <ul style="list-style-type: none"><li><b>OFF</b>(0) = Fans off</li><li><b>On</b>(1) = Fans on</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                              |     |     |     |       | OFF/On      | flag  |         |     |  |
| FCO | Evaporator fan operating mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                              |     |     |     |       | 0...4       | num   |         |     |  |
|     | Pb2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | H42                                                                                          | FCo | day |     | night |             |       |         |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              |     | Cn  | Cf  | Cn    |             |       | Cf      |     |  |
|     | ok                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | y                                                                                            | 0   | T   | Off | T     |             |       | Off     |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 1   | T   | T   | T     |             |       | T       |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 2   | T   | T   | T     |             |       | T       |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 3   | T   | DCd | T     |             |       | DCn     |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 4   | T   | DCd | T     |             |       | DCn     |     |  |
|     | no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | n                                                                                            | 0   | On  | Off | On    |             |       | Off     |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 1   | On  | On  | On    |             |       | On      |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 2   | DCd | DCd | DCn   |             |       | DCn     |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 3   | On  | DCd | On    |             |       | DCn     |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 4   | On  | DCd | On    |             |       | DCn     |     |  |
|     | ko                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | y                                                                                            | 0   | DCd | Off | DCn   |             |       | Off     |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 1   | On  | Off | On    |             |       | Off     |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 2   | DCd | DCd | DCn   |             |       | DCn     |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 3   | DCd | DCd | DCn   |             |       | DCn     |     |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | 4   | DCd | DCd | DCn   |             |       | DCn     |     |  |
|     | <b>Headings legend:</b> <ul style="list-style-type: none"><li><b>Pb2</b> = probe Pb2 status</li><li><b>day</b> = day mode</li><li><b>night</b> = night mode</li><li><b>Cn</b> = compressor on</li><li><b>Cf</b> = compressor off.</li></ul> <b>Status legend:</b> <ul style="list-style-type: none"><li><b>ok</b> = probe present</li><li><b>ko</b> = probe in error E2</li><li><b>no</b> = no probe</li><li><b>T</b> = thermostat controlled fans</li><li><b>On</b> = fans on</li><li><b>Off</b> = fans off</li><li><b>DCd</b> = day duty cycle</li><li><b>DCn</b> = night duty cycle.</li></ul> |                                                                                              |     |     |     |       |             |       |         |     |  |
|     | FOn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Fan on time for day duty cycle. Applies when Duty cycle mode is active (see <b>FCO</b> ).    |     |     |     |       |             |       | 0...250 | min |  |
|     | FOF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Fan off time for day duty cycle. Applies when Duty cycle mode is active (see <b>FCO</b> ).   |     |     |     |       |             |       | 0...250 | min |  |
|     | Fnn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Fan on time for night duty cycle. Applies when Duty cycle mode is active (see <b>FCO</b> ).  |     |     |     |       |             |       | 0...250 | min |  |
|     | FnF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Fan off time for night duty cycle. Applies when Duty cycle mode is active (see <b>FCO</b> ). |     |     |     |       |             |       | 0...250 | min |  |
| FES | “Modulated fans” regulator inhibiting temperature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                              |     |     |     |       | -58.0...302 | °C/°F |         |     |  |
| FEd | Tripping differential for “modulated fans” regulator (absolute or relative).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                              |     |     |     |       | 0.1...50.0  | °C/°F |         |     |  |
| FEu | Threshold value (Cut-OFF) on “modulated fans” regulator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                              |     |     |     |       | 0.0...25.0  | °C/°F |         |     |  |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                        | Range                    | UM    |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------|
| <b>FEC</b> | Activation differential for the threshold value (Cut-OFF) on “modulated fans” regulator.                                                                                                                                                                                                                                                                                                                           | 0.1...25.0               | °C/°F |
| <b>rA1</b> | Sets probe 1 used for temperature alarms. <ul style="list-style-type: none"> <li>• <b>diS</b> (0) = disabled</li> <li>• <b>Pb1</b> (1) = probe Pb1</li> <li>• <b>Pb2</b> (2) = probe Pb2</li> <li>• <b>Pb3</b> (3) = probe Pb3</li> <li>• <b>Pb4</b> (4) = probe Pb4</li> <li>• <b>Pb5</b> (5) = probe Pb5</li> <li>• <b>Pbi</b> (6) = virtual probe</li> <li>• <b>PFi</b> (7) = filtered virtual probe</li> </ul> | diS, Pb1...Pb5, Pbi, PFi | num   |
| <b>Att</b> | Sets the absolute or relative value for parameters <b>HA1/HA2</b> and <b>LA1/LA2</b> . <ul style="list-style-type: none"> <li>• <b>AbS</b> (0) = absolute value</li> <li>• <b>rEL</b> (1) = relative value</li> </ul>                                                                                                                                                                                              | AbS/rEL                  | flag  |
| <b>AFd</b> | Alarm activation differential.                                                                                                                                                                                                                                                                                                                                                                                     | 0.1...25.0               | °C/°F |
| <b>HA1</b> | Probe 1 maximum alarm (only if <b>rA1</b> ≠dis). Temperature value ( <b>Att</b> function) which, when exceeded, will lead to the activation of alarm signaling.                                                                                                                                                                                                                                                    | LA1...302                | °C/°F |
| <b>LA1</b> | Probe 1 minimum alarm (only if <b>rA1</b> ≠diS). Temperature value ( <b>Att</b> function) which, when exceeded, will lead to the activation of alarm signaling.                                                                                                                                                                                                                                                    | -58.0...HA1              | °C/°F |
| <b>PAO</b> | Alarm exclusion time when switching on the device, after a power outage. Refers only to high and low temperature alarms.                                                                                                                                                                                                                                                                                           | 0...10                   | hours |
| <b>dAO</b> | Temperature alarm exclusion time after defrosting.                                                                                                                                                                                                                                                                                                                                                                 | 0...250                  | min   |
| <b>tA1</b> | Temperature alarm 1 signaling delay (only if <b>rA1</b> ≠diS). Refers only to high and low temperature alarms <b>LA1</b> and <b>HA1</b> .                                                                                                                                                                                                                                                                          | 0...250                  | min   |
| <b>dAt</b> | Defrost ended due to timeout alarm indication. <ul style="list-style-type: none"> <li>• <b>no</b>(0) = alarm not activated</li> <li>• <b>yES</b>(1) = alarm activated</li> </ul>                                                                                                                                                                                                                                   | no/yES                   | flag  |
| <b>ALL</b> | Low alarm threshold (warning).                                                                                                                                                                                                                                                                                                                                                                                     | 0.0...ALH                | num   |
| <b>ALH</b> | High alarm threshold (alarm).                                                                                                                                                                                                                                                                                                                                                                                      | ALL...100                | num   |
| <b>L00</b> | Probe shared via Link2: <ul style="list-style-type: none"> <li>• <b>diS</b> (0) = disabled</li> <li>• <b>Pb1</b> (1) = probe Pb1</li> <li>• <b>Pb2</b> (2) = probe Pb2</li> <li>• <b>Pb3</b> (3) = probe Pb3</li> <li>• <b>Pb4</b> (4) = probe Pb4</li> <li>• <b>Pb5</b> (5) = probe Pb5</li> <li>• <b>Pbi</b> (6) = virtual probe</li> <li>• <b>PFi</b> (7) = filtered virtual probe</li> </ul>                   | diS, Pb1...Pb5, Pbi, PFi | num   |
| <b>L01</b> | Shares the displayed value with the Link2 network. <ul style="list-style-type: none"> <li>• <b>0</b> = prevents sending the displayed value from the device to the Link2 network</li> <li>• <b>1</b> = enables sending the displayed value from the device to the Link2 network</li> <li>• <b>2</b> = displays the value of the device with setting <b>L01</b> = 1.</li> </ul>                                     | 0/1/2                    | num   |
| <b>L02</b> | Sends the Setpoint value to the Link2 network when it is changed. <ul style="list-style-type: none"> <li>• <b>no</b> (0) = no</li> <li>• <b>yES</b> (1) = yes.</li> </ul>                                                                                                                                                                                                                                          | no/yES                   | flag  |

| PAR             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Range        | UM    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------|
| L03             | Enables the sending of the defrost request to the Link2 network. <ul style="list-style-type: none"> <li>• <b>0</b> = send defrost request disabled</li> <li>• <b>1</b> = primary device for sending simultaneous defrost request</li> <li>• <b>2</b> = primary device for sending sequential defrost request</li> </ul>                                                                                                                                                                                                                                                                                    | 0/1/2        | num   |
| L04             | Defrost end method. <ul style="list-style-type: none"> <li>• <b>ind</b> (0) = independent</li> <li>• <b>dEP</b> (1) = dependent. Waits for all controllers to have finished defrosting.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                         | ind/dEP      | flag  |
| L05             | Enables Stand-by command synchronization <ul style="list-style-type: none"> <li>• <b>no</b> (0) = no</li> <li>• <b>yES</b> (1) = yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | no/yES       | flag  |
| L06             | Enables light command synchronization <ul style="list-style-type: none"> <li>• <b>no</b> (0) = no</li> <li>• <b>yES</b> (1) = yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                               | no/yES       | flag  |
| L07             | Enables Energy Saving command synchronization <ul style="list-style-type: none"> <li>• <b>no</b> (0) = no</li> <li>• <b>yES</b> (1) = yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | no/yES       | flag  |
| L08             | Enables AUX command synchronization <ul style="list-style-type: none"> <li>• <b>no</b> (0) = no</li> <li>• <b>yES</b> (1) = yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | no/yES       | flag  |
| L09             | Enables sharing of the saturation probe (pressure). <ul style="list-style-type: none"> <li>• <b>no</b> (0) = no</li> <li>• <b>yES</b> (1) = yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                 | no/yES       | flag  |
| L10             | Dependent defrost end timeout.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0...250      | min   |
| L11             | Number of devices connected to Link2. If the number of devices differs from the set value, a Link2 alarm will be activated ( <b>ELI</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0...8        | num   |
| L12             | Alarm relay sharing method via Link2: <ul style="list-style-type: none"> <li>• <b>0</b> = function disabled</li> <li>• <b>1</b> = primary alarm relay (The relay is activated from local alarm relay or secondary alarm relay)</li> <li>• <b>2</b> = secondary alarm relay</li> </ul>                                                                                                                                                                                                                                                                                                                      | 0/1/2        | num   |
| L15             | Share buzzer and alarm silenced command via Link2 <ul style="list-style-type: none"> <li>• <b>0</b> = function disabled</li> <li>• <b>1</b> = main board</li> <li>• <b>2</b> = remote board (shares buzzer and alarm silenced command with main board)</li> </ul>                                                                                                                                                                                                                                                                                                                                          | 0/1/2        | flag  |
| ES <sub>t</sub> | Type of event activated via RTC. <ul style="list-style-type: none"> <li>• <b>0</b> = disabled</li> <li>• <b>1</b> = Energy Saving</li> <li>• <b>2</b> = Energy Saving + Light off</li> <li>• <b>3</b> = Energy Saving + Light off + AUX output active</li> <li>• <b>4</b> = Device off</li> <li>• <b>5</b> = Energy saving + Terminal buzzer silencing</li> <li>• <b>6</b> = Energy saving + Light off + Terminal buzzer silencing</li> <li>• <b>7</b> = Energy Saving + Light off + AUX output active + Terminal buzzer silencing</li> <li>• <b>8</b> = Device off + Terminal buzzer silencing</li> </ul> | 0...8        | num   |
| ES <sub>F</sub> | Activates night mode (energy saving) for the fans. <ul style="list-style-type: none"> <li>• <b>no</b> (0) = disabled</li> <li>• <b>yES</b> (1) = enabled if energy saving mode is active (only if <b>ES<sub>t</sub></b>≠0 and <b>ES<sub>t</sub></b>≠4).</li> </ul>                                                                                                                                                                                                                                                                                                                                         | no/yES       | flag  |
| OS <sub>1</sub> | Offset on setpoint 1 (SP1) in energy saving mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -50.0...50.0 | °C/°F |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Range                             | UM    |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------|
| <b>dn1</b> | Differential on setpoint 1 (SP1) in energy saving mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -58.0...302                       | °C/°F |
| <b>EdH</b> | Weekday Energy Saving start hour.<br><ul style="list-style-type: none"> <li>• <b>0...23</b> = start hour</li> <li>• <b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                        | 0...24                            | hours |
| <b>Edn</b> | Weekday Energy Saving start minutes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0...59                            | min   |
| <b>Edd</b> | Weekday Energy Saving duration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1...72                            | hours |
| <b>EFH</b> | Weekend/holiday Energy Saving start hour.<br><ul style="list-style-type: none"> <li>• <b>0...23</b> = start hour</li> <li>• <b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                | 0...24                            | hours |
| <b>EFn</b> | Weekend/holiday Energy Saving start minutes.                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0...59                            | min   |
| <b>EFd</b> | Weekend/holiday Energy Saving duration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1...72                            | hours |
| <b>FH</b>  | Anti-sweater heaters probe (FH).<br><ul style="list-style-type: none"> <li>• <b>diS</b> (0) = disabled</li> <li>• <b>dc</b> (1) = duty cycle</li> <li>• <b>Pb1</b> (2) = probe Pb1</li> <li>• <b>Pb2</b> (3) = probe Pb2</li> <li>• <b>Pb3</b> (4) = probe Pb3</li> <li>• <b>Pb4</b> (5) = probe Pb4</li> <li>• <b>Pb5</b> (6) = probe Pb5</li> <li>• <b>Pbi</b> (7) = virtual probe</li> <li>• <b>Pfi</b> (8) = filtered virtual probe</li> <li>• <b>PbC</b> (9) = KDX terminal analogue input</li> </ul> | diS, dc, Pb1...Pb5, Pbi, Pfi, PbC | num   |
| <b>FHt</b> | Anti-sweater heaters operating period duration (FH), only used if the OC output is used with SSR relay.                                                                                                                                                                                                                                                                                                                                                                                                    | 1...250                           | s*10  |
| <b>FH0</b> | Setpoint corresponding to the anti-sweater heaters (only if <b>FH</b> ≠dis and <b>FH</b> ≠dc).                                                                                                                                                                                                                                                                                                                                                                                                             | -58.0...302                       | °C/°F |
| <b>FH1</b> | Offset corresponding to the anti-sweater heaters (only if <b>FH</b> ≠dis and <b>FH</b> ≠dc).                                                                                                                                                                                                                                                                                                                                                                                                               | 0.0...25.0                        | °C/°F |
| <b>FH2</b> | Band corresponding to the anti-sweater heaters (only if <b>FH</b> ≠dis and <b>FH</b> ≠dc).                                                                                                                                                                                                                                                                                                                                                                                                                 | -58.0...302                       | °C/°F |
| <b>FH3</b> | Minimum percentage for the anti-sweater heaters (only if <b>FH</b> ≠dis and <b>FH</b> ≠dc).                                                                                                                                                                                                                                                                                                                                                                                                                | 0...100                           | %     |
| <b>FH4</b> | Maximum percentage for the day Duty cycle.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0...100                           | %     |
| <b>FH5</b> | Maximum percentage for the night Duty cycle.                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0...100                           | %     |
| <b>FH6</b> | Anti-sweater heaters percentage during defrost.                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...100                           | %     |
| <b>Adr</b> | Modbus protocol controller address.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1...250                           | flag  |
| <b>Pty</b> | Modbus parity bit.<br><ul style="list-style-type: none"> <li>• <b>n</b>(0) = none</li> <li>• <b>E</b>(1) = even</li> <li>• <b>o</b>(2) = odd.</li> </ul>                                                                                                                                                                                                                                                                                                                                                   | n/E/o                             | num   |
| <b>LOC</b> | LOCK. Setpoint change lock. It is still possible to enter parameter programming and change them, including the status of this parameter in order to unlock the terminal.<br><ul style="list-style-type: none"> <li>• <b>no</b> (0) = no</li> <li>• <b>yES</b> (1) = yes</li> </ul>                                                                                                                                                                                                                         | no/yES                            | flag  |
| <b>ndt</b> | Display with decimal point.<br><ul style="list-style-type: none"> <li>• <b>no</b> (0) = no (integers only)</li> <li>• <b>yES</b> (1) = yes (display with decimal).</li> </ul>                                                                                                                                                                                                                                                                                                                              | no/yES                            | flag  |
| <b>CA1</b> | Calibration of probe Pb1 (only if <b>H41</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb1.<br>This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                                                          | -30.0...30.0                      | °C/°F |
| <b>CA2</b> | Calibration of probe Pb2 (only if <b>H42</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb2.<br>This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                                                          | -30.0...30.0                      | °C/°F |



| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Range                        | UM      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------|
| <b>CA3</b> | Calibration of probe Pb3 (only if <b>H43</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb3.<br>This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -30.0...30.0                 | °C/°F   |
| <b>CA4</b> | Calibration of probe Pb4 (only if <b>H44</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb4.<br>This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -30.0...30.0                 | °C/°F   |
| <b>CA5</b> | Calibration of probe Pb5 (only if <b>H45</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb5.<br>This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -30.0...30.0                 | °C/°F   |
| <b>CA6</b> | Calibration of pressure transducer Pb6 (4...20 mA) (only if <b>H46</b> =Pro). Positive or negative temperature values that are added to those read by pressure transducer Pb6 (4...20 mA). This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -30.0...30.0                 | bar/psi |
| <b>CA7</b> | Calibration of ratiometric transducer Pb7 (only if <b>H47</b> =Pro). Positive or negative temperature values that are added to those read by ratiometric transducer Pb7. This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -30.0...30.0                 | bar/psi |
| <b>LdL</b> | Minimum value that can be displayed by the device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -58.0...HdL                  | °C/°F   |
| <b>HdL</b> | Maximum value that can be displayed by the device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | LdL...302                    | °C/°F   |
| <b>ddL</b> | Display mode during defrosting. <ul style="list-style-type: none"> <li><b>0</b> = display the temperature read by the probe or the setpoint (see <b>ddd</b>)</li> <li><b>1</b> = locks the reading at the temperature value read by the probe at the start of defrost until reaching SEt (or until the expiration of <b>Ldd</b>)</li> <li><b>2</b> = displays label dEF during defrost until reaching SEt (or until the expiration of <b>Ldd</b>).</li> </ul>                                                                                                                                                                                                                                                                                                          | 0/1/2                        | num     |
| <b>Ldd</b> | Display unlocking timeout value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0...250                      | min     |
| <b>ddd</b> | Sets the value to show on the display. <ul style="list-style-type: none"> <li><b>SP1</b> (0) = setpoint SP1</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>LP</b> (7) = remote probe</li> <li><b>PFi</b> (8) = filtered virtual probe</li> </ul>                                                                                                                                                                                                                                                                                                                              | SP1, Pb1...Pb5, Pbi, LP, PFi | num     |
| <b>trA</b> | Selects the model of ratiometric transducer used. <ul style="list-style-type: none"> <li><b>USE</b> (0) = Generic Probe Set by customer</li> <li><b>rA1</b> (1) = EWPA 010 R 0/5 V 0/10 BAR FEMALE</li> <li><b>rA2</b> (2) = EWPA 030 R 0/5 V 0/30 BAR FEMALE</li> <li><b>rA3</b> (3) = EWPA 050 R 0/5 V 0/50 BAR FEMALE</li> <li><b>rA4</b> (4) = AKS 32R -1 ...6 BAR</li> <li><b>rA5</b> (5) = AKS 32R -1 ...12 BAR</li> <li><b>rA6</b> (6) = AKS 32R -1 ...20 BAR</li> <li><b>rA7</b> (7) = AKS 32R -1 ...34 BAR</li> <li><b>rA8</b> (8) = Reserved.</li> </ul> <p><b>Note:</b> The upper and lower limits of probes rA1...rA8 are pre-set (and cannot be changed), while if you select USE you will need to set them via parameters <b>H05</b> and <b>H06</b>.</p> | USE, rA1...rA8               | num     |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                     | Range                  | UM   |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------|
| <b>H00</b> | Select probe type used (Pb1...Pb5). <ul style="list-style-type: none"> <li>• <b>ntc</b> (0) = NTC</li> <li>• <b>Ptc</b> (1) = PTC</li> <li>• <b>Pt1</b> (2) = Pt1000</li> </ul>                                                                                                                                                                                                 | ntc, PTC, Pt1          | num  |
| <b>H08</b> | Stand-by operating mode <ul style="list-style-type: none"> <li>• <b>0</b> = display off; the regulators are active and the device signals possible alarms by reactivating the display</li> <li>• <b>1</b> = display off; the regulators and the alarms are blocked</li> <li>• <b>2</b> = the display shows the label "OFF"; the regulators and alarms are inhibited.</li> </ul> | 0/1/2                  | num  |
| <b>H16</b> | Configuration of digital input 6/polarity (Pb6) (only if <b>H46=di</b> ). Same as <b>H11</b> .                                                                                                                                                                                                                                                                                  | -19...+19              | num  |
| <b>H18</b> | Digital input 8/polarity (DI) configuration. Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                               | -19...+19              | num  |
| <b>d16</b> | Digital input 6 activation delay (Pb6) (only if <b>H46=di</b> ).                                                                                                                                                                                                                                                                                                                | 0...255                | min  |
| <b>d18</b> | Digital input 8 (DI) activation delay.                                                                                                                                                                                                                                                                                                                                          | 0...255                | min  |
| <b>H24</b> | Digital output 4 configuration ( <b>OUT4</b> ). Same as <b>H21</b> .                                                                                                                                                                                                                                                                                                            | 0...19                 | num  |
| <b>H27</b> | Configuration of digital output 7 ( <b>Open Collector</b> ). Same as <b>H21</b> .                                                                                                                                                                                                                                                                                               | 0...19                 | num  |
| <b>H33</b> | Configuration of the ESC key. Same as <b>H31</b> .                                                                                                                                                                                                                                                                                                                              | 0...9                  | num  |
| <b>H60</b> | Display selected application. <ul style="list-style-type: none"> <li>• <b>0</b> = disabled</li> <li>• <b>1</b> = AP1</li> <li>• <b>2</b> = AP2</li> <li>• <b>3</b> = AP3</li> <li>• <b>4</b> = AP4</li> <li>• <b>5</b> = AP5</li> <li>• <b>6</b> = AP6</li> <li>• <b>7</b> = AP7</li> <li>• <b>8</b> = AP8</li> </ul>                                                           | 0...8                  | num  |
| <b>rSP</b> | Saturation probe. <ul style="list-style-type: none"> <li>• <b>diS</b> (0) = disabled</li> <li>• <b>Pb6</b> (1) = pressure transducer 4...20 mA</li> <li>• <b>Pb7</b> (2) = ratiometric transducer</li> <li>• <b>LSP</b> (3) = remote probe (shared within the Link2 network)</li> <li>• <b>rP</b> (4) = remote probe (from supervisor).</li> </ul>                              | diS, Pb6, Pb7, LSP, rP | num  |
| <b>rSS</b> | Superheat probe. <ul style="list-style-type: none"> <li>• <b>diS</b> (0) = disabled</li> <li>• <b>Pb1</b> (1) = probe Pb1</li> <li>• <b>Pb2</b> (2) = probe Pb2</li> <li>• <b>Pb3</b> (3) = probe Pb3</li> <li>• <b>Pb4</b> (4) = probe Pb4</li> <li>• <b>Pb5</b> (5) = probe Pb5</li> </ul>                                                                                    | diS, Pb1...Pb5         | num  |
| <b>EPd</b> | Saturation value display mode. <ul style="list-style-type: none"> <li>• <b>t</b> (0) = temperature</li> <li>• <b>P</b> (1) = pressure</li> </ul>                                                                                                                                                                                                                                | t/P                    | flag |

| PAR                                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Range                                                                             | UM    |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| <b>Ert</b>                                                               | Type of refrigerant. <ul style="list-style-type: none"> <li>• <b>404</b> (0) = R404A</li> <li>• <b>r22</b> (1) = R22</li> <li>• <b>410</b> (2) = R410A</li> <li>• <b>134</b> (3) = R134a</li> <li>• <b>744</b>(4) = R744 (CO2)</li> <li>• <b>507</b> (5) = R507A</li> <li>• <b>717</b> (6) = R717 (NH3)</li> <li>• <b>290</b> (7) = reserved</li> <li>• <b>407</b> (8) = R407A</li> <li>• <b>448</b> (9) = R448A</li> <li>• <b>449</b> (10) = R449A</li> <li>• <b>450</b> (11) = R450</li> <li>• <b>513</b> (12) = R513A</li> <li>• <b>PAr_1</b> (13) = customizable 1</li> <li>• <b>PAr_2</b> (14) = customizable 2</li> <li>• <b>PAr_3</b> (15) = customizable 3</li> <li>• <b>PAr_4</b> (16) = customizable 4</li> <li>• <b>PAr_5</b> (17) = customizable 5</li> <li>• <b>PAr_6</b> (18) = customizable 6</li> <li>• <b>455</b> (19) = reserved</li> </ul> <b>Note:</b> Contact Eliwell representative for customizable refrigerants. | 404, r22, 410 134, 744, 507, 717, 290, 407, 448, 449 450, 513, PAr_1...PAr_6, 455 | num   |
| <b>U06</b>                                                               | Minimum useful valve opening percentage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0...100                                                                           | %     |
| <b>OLt</b>                                                               | Minimum superheat threshold.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0...999.9                                                                       | °C/°F |
| (*) Parameters visible at level 2 only if <b>E00</b> = 0 (custom valve). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                   |       |

**Note:** the controller must be rebooted after changing **CnF** folder parameters.

**Note:** the "User" menu parameters also include **PA2**, which allows access to the "Installer" menu.

**Note:** for the full list of parameters, see the section "**Installer parameters**".

## Installer parameters RTX 600 /V

| PAR                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Range                             | UM    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------|
| <b>CP (Compressor)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                   |       |
| <b>rE</b>              | Sets the temperature control type to perform. <ul style="list-style-type: none"> <li><b>0</b>: single thermostat</li> <li><b>1</b>: dual thermostat in series</li> <li><b>2</b>: dual thermostat in parallel</li> <li><b>3</b>: reserved</li> <li><b>4</b>: two independent regulators</li> <li><b>5</b>: continuous modulation, single thermostat</li> <li><b>6</b>: continuous modulation, dual thermostat in series.</li> </ul>                                                                               | 0...6                             | num   |
| <b>rP1</b>             | Sets the probe used by thermostat 1. <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>LP</b> (7) = remote probe</li> <li><b>PFI</b> (8) = filtered virtual probe</li> </ul>                                                                              | diS, Pb1...Pb5, Pbi, LP, PFI      | num   |
| <b>rP2</b>             | Sets the probe used by thermostat 2 (only if <b>rE</b> ≠0). <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>LP</b> (7) = remote probe</li> <li><b>PFI</b> (8) = filtered virtual probe</li> <li><b>PbC</b> (9) = KDX terminal analogue input</li> </ul> | diS, Pb1...Pb5, Pbi, LP, PFI, PbC | num   |
| <b>SP1</b>             | Thermostat 1 regulation setpoint.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | LS1...HS1                         | °C/°F |
| <b>dF1</b>             | Tripping differential for thermostat 1 (absolute or relative).<br><b>Note:</b> always a value other than 0.                                                                                                                                                                                                                                                                                                                                                                                                      | -58.0...302                       | °C/°F |
| <b>SP2</b>             | Thermostat 2 regulation setpoint (only if <b>rE</b> ≠0).                                                                                                                                                                                                                                                                                                                                                                                                                                                         | LS2...HS2                         | °C/°F |
| <b>dF2</b>             | Tripping differential for thermostat 2 (absolute or relative) (only if <b>rE</b> ≠0).<br><b>Note:</b> always a value other than 0.                                                                                                                                                                                                                                                                                                                                                                               | -58.0...302                       | °C/°F |
| <b>Stt</b>             | Management mode for differentials <b>dF1</b> and <b>dF2</b> . <ul style="list-style-type: none"> <li><b>AbS</b> (0) = absolute value</li> <li><b>rEL</b> (1) = relative value</li> </ul>                                                                                                                                                                                                                                                                                                                         | AbS/rEL                           | flag  |
| <b>HS1</b>             | Maximum value that can be attributed to setpoint SP1.<br><b>Note:</b> The two sets are interdependent: HS1 cannot be less than LS1 and vice versa.                                                                                                                                                                                                                                                                                                                                                               | LS1...HdL                         | °C/°F |
| <b>LS1</b>             | Minimum value that can be attributed to setpoint SP1.<br><b>Note:</b> The two sets are interdependent: LS1 cannot be greater than HS1 and vice versa.                                                                                                                                                                                                                                                                                                                                                            | LdL...HS1                         | °C/°F |
| <b>HS2</b>             | Maximum value that can be attributed to setpoint SP2 (only if <b>rE</b> ≠0).<br><b>Note:</b> The two sets are interdependent: HS2 cannot be less than LS2 and vice versa.                                                                                                                                                                                                                                                                                                                                        | LS2...HdL                         | °C/°F |
| <b>LS2</b>             | Minimum value that can be attributed to setpoint SP2 (only if <b>rE</b> ≠0).<br><b>Note:</b> The two sets are interdependent: LS2 cannot be greater than HS2 and vice versa.                                                                                                                                                                                                                                                                                                                                     | LdL...HS2                         | °C/°F |
| <b>HC1</b>             | Selects thermostat 1 regulation mode. <ul style="list-style-type: none"> <li><b>C</b>(0) = Cool</li> <li><b>H</b>(1) = Heat</li> </ul>                                                                                                                                                                                                                                                                                                                                                                           | C/H                               | flag  |
| <b>HC2</b>             | Selects thermostat 2 regulation mode (only if <b>rE</b> ≠0). Same as <b>HC1</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                | C/H                               | flag  |
| <b>Cit</b>             | Minimum compressor activation time.<br>If <b>Cit</b> = 0 it is not active.                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0...250                           | min   |

| PAR                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                             | Range                        | UM    |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------|
| <b>CAt</b>           | Maximum compressor activation time.<br>If <b>CAt</b> = 0 it is not active.                                                                                                                                                                                                                                                                                                                                                                              | 0...250                      | min   |
| <b>Ont</b>           | Regulator switch-on time for faulty probe: <ul style="list-style-type: none"> <li>if <b>Ont</b> = 1 and <b>OFt</b> = 0 compressor always on</li> <li>if <b>Ont</b> = 1 and <b>OFt</b> &gt; 0 compressor in duty cycle</li> </ul>                                                                                                                                                                                                                        | 0...250                      | min   |
| <b>OFt</b>           | Regulator switch-off time for faulty probe: <ul style="list-style-type: none"> <li>if <b>OFt</b> = 1 and <b>Ont</b> = 0 compressor always off</li> <li>if <b>OFt</b> = 1 and <b>Ont</b> &gt; 0 compressor in duty cycle</li> </ul>                                                                                                                                                                                                                      | 0...250                      | min   |
| <b>dOn</b>           | Compressor output activation delay time from call.                                                                                                                                                                                                                                                                                                                                                                                                      | 0...250                      | s     |
| <b>dOF</b>           | Compressor output activation delay time from the previous switch-off.                                                                                                                                                                                                                                                                                                                                                                                   | 0...250                      | min   |
| <b>dbi</b>           | Delay time between two consecutive compressor switch-ons.                                                                                                                                                                                                                                                                                                                                                                                               | 0...250                      | min   |
| <b>OdO</b>           | Output activation delay time from switching on the device or after a power outage.<br><b>0</b> = not active.                                                                                                                                                                                                                                                                                                                                            | 0...250                      | min   |
| <b>CFP</b>           | Condenser fan pre-ventilation time in Heat/Cool.                                                                                                                                                                                                                                                                                                                                                                                                        | 0...255                      | s     |
| <b>CFd</b>           | Condenser fan operating mode during a defrost. <ul style="list-style-type: none"> <li><b>OFF</b> (0) = fans off</li> <li><b>On</b> (1) = fans on</li> </ul>                                                                                                                                                                                                                                                                                             | OFF/On                       | flag  |
| <b>OF1</b>           | Represents the value (Offset) which will be added to or subtracted from SP1 in the presence of remote commands. <ul style="list-style-type: none"> <li><b>nOS</b>= Activate setpoint offset forcing (SEt = SP1+OF1)</li> <li><b>oOS</b>= Deactivate setpoint offset forcing (SEt = SP1).</li> </ul>                                                                                                                                                     | -50.0...50.0                 | °C/°F |
| <b>POt</b>           | Pump down time. Sets the running time after evaporator valve closure.                                                                                                                                                                                                                                                                                                                                                                                   | 0...250                      | s     |
| <b>SS1</b>           | Compressor soft start: advance hot gas valve opening. Sets the delay time between hot gas valve opening and compressor startup.                                                                                                                                                                                                                                                                                                                         | 0...250                      | s     |
| <b>SS2</b>           | Compressor soft start: hot gas valve closure delay. Sets the delay time between compressor startup and hot gas valve closure.                                                                                                                                                                                                                                                                                                                           | 0...250                      | s     |
| <b>dEF (Defrost)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |       |
| <b>dP1</b>           | Sets the probe used by defrost 1 (only if <b>rE</b> ≠0). <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>LP</b> (7) = remote probe</li> <li><b>PFI</b> (8) = filtered virtual probe</li> </ul> | diS, Pb1...Pb5, Pbi, LP, PFI | num   |
| <b>dP2</b>           | Sets the probe used by defrost 2. Same as <b>dP1</b> .                                                                                                                                                                                                                                                                                                                                                                                                  | diS, Pb1...Pb5, Pbi, LP, PFI | num   |
| <b>dtY</b>           | Type of defrost. <ul style="list-style-type: none"> <li><b>0</b> = electric heater defrost</li> <li><b>1</b> = cycle inversion defrost</li> <li><b>2</b> = hot gas defrost for plug-in systems (with built-in compressor)</li> <li><b>3</b> = hot gas defrost for systems with remote group</li> <li><b>4</b> = modulated electric heater defrost (Smart Defrost).</li> </ul>                                                                           | 0...4                        | num   |
| <b>dFt</b>           | Defrost activation mode using two probes. <ul style="list-style-type: none"> <li><b>0</b> = activation only linked to probe 1</li> <li><b>1</b> = activation on a call from at least one of the two probes</li> <li><b>2</b> = activation on a call from both probes</li> </ul>                                                                                                                                                                         | 0/1/2                        | num   |
| <b>dit</b>           | Time interval between the start of two subsequent defrost operations.<br><b>0</b> = function disabled (defrost NEVER takes place).                                                                                                                                                                                                                                                                                                                      | 0...250                      | hours |
| <b>dt1</b>           | Unit of measure for defrost interval ( <b>dit</b> ). <ul style="list-style-type: none"> <li><b>0</b> = hours</li> <li><b>1</b> = minutes</li> <li><b>2</b> = seconds</li> </ul>                                                                                                                                                                                                                                                                         | 0/1/2                        | num   |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Range       | UM    |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|
| <b>dt2</b> | Unit of measure for defrost duration ( <b>dE1/dE2</b> ) (only if <b>dFt</b> ≠0).<br><ul style="list-style-type: none"> <li>• <b>0</b> = hours</li> <li>• <b>1</b> = minutes</li> <li>• <b>2</b> = seconds</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0/1/2       | num   |
| <b>dCt</b> | Selects defrost interval count mode.<br><ul style="list-style-type: none"> <li>• <b>0</b> = defrost disabled</li> <li>• <b>1</b> = hours of compressor operation (DIGIFROST® method); defrosting active ONLY with compressor on</li> </ul> <p><b>Note:</b> the compressor run time is calculated independently of the evaporator probe (the calculation is active even if the evaporator probe is absent or not working).</p> <ul style="list-style-type: none"> <li>• <b>2</b> = hours of device operation; counting is always active when the machine is on and starts at every power-on</li> <li>• <b>3</b> = compressor stop. Each time the compressor stops, a defrosting cycle is performed in accordance with <b>dtY</b></li> <li>• <b>4</b> = RTC</li> <li>• <b>5</b> = temperature.</li> </ul> | 0...5       | num   |
| <b>dOH</b> | Defrost cycle activation delay from the call                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...250     | min   |
| <b>dE1</b> | Defrost 1 timeout. Sets the maximum duration of defrost 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1...250     | min   |
| <b>dE2</b> | Defrost 2 timeout (only if <b>dFt</b> ≠0). Sets the maximum duration of defrost 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1...250     | min   |
| <b>dS1</b> | Defrost 1 end temperature (only if <b>dP1</b> ≠diS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -58.0...302 | °C/°F |
| <b>dS2</b> | Defrost 2 end temperature (only if <b>dP2</b> ≠diS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -58.0...302 | °C/°F |
| <b>dSS</b> | Defrost start temperature threshold (only if <b>dCt</b> =5).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -58.0...302 | °C/°F |
| <b>dPO</b> | Determines whether, upon switching on, the device activates defrosting (providing that the temperature measured on the evaporator permits it).<br><ul style="list-style-type: none"> <li>• <b>no</b> (0) = no, do not defrost at switch-on</li> <li>• <b>yES</b> (1) = yes, defrost at switch-on.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | no/yES      | flag  |
| <b>tCd</b> | Minimum period of time with the compressor ON or OFF before defrost is activated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -60...60    | min   |
| <b>ndE</b> | Minimum defrost duration.<br><b>Note:</b> if <b>dtY</b> =0, <b>dtY</b> =1 or <b>dtY</b> =4, set <b>ndE</b> =0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0...250     | min   |
| <b>PdC</b> | Hot gas extraction time at the end of the defrost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0...250     | min   |
| <b>tPd</b> | Minimum pump down time before defrost is activated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0...255     | min   |
| <b>dPH</b> | Regular defrost start hour (only if <b>dCt</b> =4).<br><ul style="list-style-type: none"> <li>• <b>0...23</b> = start hour</li> <li>• <b>24</b> = disabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...24      | hours |
| <b>dPn</b> | Regular defrost start minutes (only if <b>dCt</b> =4).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...59      | min   |
| <b>dPd</b> | Interval between one regular defrost and the next (only if <b>dCt</b> =4).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1...7       | days  |
| <b>Fd1</b> | 1st weekend/holiday day (only if <b>dCt</b> =4).<br><ul style="list-style-type: none"> <li>• <b>0...6</b> = start day</li> <li>• <b>7</b> = disabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0...7       | days  |
| <b>Fd2</b> | 2nd weekend/holiday day (only if <b>dCt</b> =4).<br><ul style="list-style-type: none"> <li>• <b>0...6</b> = start day</li> <li>• <b>7</b> = disabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0...7       | days  |
| <b>Edt</b> | Sets whether you want to enter a duration and defrost end temperature for each event (only if <b>dCt</b> =4).<br><ul style="list-style-type: none"> <li>• <b>no</b> (0) = values all the same</li> <li>• <b>yES</b> (1) = custom values for each event.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | no/yES      | flag  |
| <b>Fdn</b> | Number of multiple defrosts during one weekday (only if <b>dCt</b> =4).<br><b>0</b> = disabled.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0...250     | num   |
| <b>FFn</b> | Number of multiple defrosts during one weekend/holiday day (only if <b>dCt</b> =4).<br><b>0</b> = disabled.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0...250     | num   |
| <b>PrH</b> | Basin heater pre-activation time before defrost begins.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0...255     | min   |
| <b>d1H</b> | 1st weekday defrost start hour (only if <b>dCt</b> =4).<br><ul style="list-style-type: none"> <li>• <b>0...23</b> = start hour</li> <li>• <b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0...24      | hours |

| PAR | Description                                                                                           | Range       | UM    |
|-----|-------------------------------------------------------------------------------------------------------|-------------|-------|
| d1n | 1st weekday defrost start minutes (only if dCt=4).                                                    | 0...59      | min   |
| d1t | 1st weekday defrost duration (only if dCt=4).                                                         | 0...250     | min   |
| d1S | 1st weekday defrost end temperature (only if dCt=4).                                                  | -58.0...302 | °C/°F |
| d2H | 2nd weekday defrost start hour (only if dCt=4).<br>• d1H...23 = start hour<br>• 24 = disabled         | d1H...24    | hours |
| d2n | 2nd weekday defrost start minutes (only if dCt=4).                                                    | 0...59      | min   |
| d2t | 2nd weekday defrost duration (only if dCt=4).                                                         | 0...250     | min   |
| d2S | 2nd weekday defrost end temperature (only if dCt=4).                                                  | -58.0...302 | °C/°F |
| d3H | 3rd weekday defrost start hour (only if dCt=4).<br>• d2H...23 = start hour<br>• 24 = disabled.        | d2H...24    | hours |
| d3n | 3rd weekday defrost start minutes (only if dCt=4).                                                    | 0...59      | min   |
| d3t | 3rd weekday defrost duration (only if dCt=4).                                                         | 0...250     | min   |
| d3S | 3rd weekday defrost end temperature (only if dCt=4).                                                  | -58.0...302 | °C/°F |
| d4H | 4th weekday defrost start hour (only if dCt=4).<br>• d3H...23 = start hour<br>• 24 = disabled.        | d3H...24    | hours |
| d4n | 4th weekday defrost start minutes (only if dCt=4).                                                    | 0...59      | min   |
| d4t | 4th weekday defrost duration (only if dCt=4).                                                         | 0...250     | min   |
| d4S | 4th weekday defrost end temperature (only if dCt=4).                                                  | -58.0...302 | °C/°F |
| d5H | 5th weekday defrost start hour (only if dCt=4).<br>• d4H...23 = start hour<br>• 24 = disabled         | d4H...24    | hours |
| d5n | 5th weekday defrost start minutes (only if dCt=4).                                                    | 0...59      | min   |
| d5t | 5th weekday defrost duration (only if dCt=4).                                                         | 0...250     | min   |
| d5S | 5th weekday defrost end temperature (only if dCt=4).                                                  | -58.0...302 | °C/°F |
| d6H | 6th weekday defrost start hour (only if dCt=4).<br>• d5H...23 = start hour<br>• 24 = disabled         | d5H...24    | hours |
| d6n | 6th weekday defrost start minutes (only if dCt=4).                                                    | 0...59      | min   |
| d6t | 6th weekday defrost duration (only if dCt=4).                                                         | 0...250     | min   |
| d6S | 6th weekday defrost end temperature (only if dCt=4).                                                  | -58.0...302 | °C/°F |
| F1H | 1st weekend/holiday defrost start hour (only if dCt=4).<br>• 0...23 = start hour<br>• 24 = disabled   | 0...24      | hours |
| F1n | 1st weekend/holiday defrost start minutes (only if dCt=4).                                            | 0...59      | min   |
| F1t | 1st weekend/holiday defrost duration (only if dCt=4).                                                 | 0...250     | min   |
| F1S | 1st weekend/holiday defrost end temperature (only if dCt=4).                                          | -58.0...302 | °C/°F |
| F2H | 2nd weekend/holiday defrost start hour (only if dCt=4).<br>• F1H...23 = start hour<br>• 24 = disabled | F1H...24    | hours |
| F2n | 2nd weekend/holiday defrost start minutes (only if dCt=4).                                            | 0...59      | min   |
| F2t | 2nd weekend/holiday defrost duration (only if dCt=4).                                                 | 0...250     | min   |
| F2S | 2nd weekend/holiday defrost end temperature (only if dCt=4).                                          | -58.0...302 | °C/°F |
| F3H | 3rd weekend/holiday defrost start hour (only if dCt=4).<br>• F2H...23 = start hour<br>• 24 = disabled | F2H...24    | hours |
| F3n | 3rd weekend/holiday defrost start minutes (only if dCt=4).                                            | 0...59      | min   |
| F3t | 3rd weekend/holiday defrost duration (only if dCt=4).                                                 | 0...250     | min   |
| F3S | 3rd weekend/holiday defrost end temperature (only if dCt=4).                                          | -58.0...302 | °C/°F |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Range                        | UM    |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------|
| <b>F4H</b> | 4th weekend/holiday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>F3H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                        | F3H...24                     | hours |
| <b>F4n</b> | 4th weekend/holiday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                     | 0...59                       | min   |
| <b>F4t</b> | 4th weekend/holiday defrost duration (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                          | 0...250                      | min   |
| <b>F4S</b> | 4th weekend/holiday defrost end temperature (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                   | -58.0...302                  | °C/°F |
| <b>F5H</b> | 5th weekend/holiday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>F4H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                        | F4H...24                     | hours |
| <b>F5n</b> | 5th weekend/holiday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                     | 0...59                       | min   |
| <b>F5t</b> | 5th weekend/holiday defrost duration (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                          | 0...250                      | min   |
| <b>F5S</b> | 5th weekend/holiday defrost end temperature (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                   | -58.0...302                  | °C/°F |
| <b>F6H</b> | 6th weekend/holiday defrost start hour (only if <b>dCt=4</b> ).<br><ul style="list-style-type: none"> <li><b>F5H...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                        | F5H...24                     | hours |
| <b>F6n</b> | 6th weekend/holiday defrost start minutes (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                     | 0...59                       | min   |
| <b>F6t</b> | 6th weekend/holiday defrost duration (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                          | 0...250                      | min   |
| <b>F6S</b> | 6th weekend/holiday defrost end temperature (only if <b>dCt=4</b> ).                                                                                                                                                                                                                                                                                                                                                                                                   | -58.0...302                  | °C/°F |
| <b>Fan</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |       |
| <b>FP1</b> | Sets the probe used by the evaporator fans during normal operation.<br><ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>LP</b> (7) = remote probe</li> <li><b>PFi</b> (8) = filtered virtual probe.</li> </ul> | diS, Pb1...Pb5, Pbi, LP, PFi | num   |
| <b>FP2</b> | Sets the probe used by the evaporator fans during defrost. Same as <b>FP1</b> .                                                                                                                                                                                                                                                                                                                                                                                        | diS, Pb1...Pb5, Pbi, LP, PFi | num   |
| <b>FPt</b> | Parameter <b>Fst</b> management mode.<br><ul style="list-style-type: none"> <li><b>AbS</b> (0) = absolute value</li> <li><b>rEL</b> (1) = relative value</li> </ul>                                                                                                                                                                                                                                                                                                    | AbS/rEL                      | flag  |
| <b>FSt</b> | Fan disabling temperature. If the value read is greater than <b>FSt</b> , the fans will be stopped.<br>The value is positive or negative (only if <b>FP1</b> ≠diS).                                                                                                                                                                                                                                                                                                    | -58.0...302                  | °C/°F |
| <b>FAd</b> | Evaporator fan activation differential (only if <b>FP1</b> ≠dis).                                                                                                                                                                                                                                                                                                                                                                                                      | 1.0...25.0                   | °C/°F |
| <b>Fdt</b> | Evaporator fan activation delay after a defrost.                                                                                                                                                                                                                                                                                                                                                                                                                       | 0...250                      | min   |
| <b>dt</b>  | Dripping time.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0...250                      | min   |
| <b>dFd</b> | Evaporator fan operating mode during a defrost.<br><ul style="list-style-type: none"> <li><b>OFF</b>(0) = Fans off</li> <li><b>On</b>(1) = Fans on</li> </ul>                                                                                                                                                                                                                                                                                                          | OFF/On                       | flag  |



| PAR                 | Description                                                                                                                                                                                                                                                                                                                                                           | Range   | UM  |                                                                                                                                                   |         |      |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|---------|------|-----|-------|-----|----|-------|----|----|----|---|---|---|-----|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|-----|---|-----|---|---|-----|---|-----|----|---|---|----|-----|----|-----|---|----|----|----|----|---|-----|-----|-----|-----|---|----|-----|----|-----|---|----|-----|----|-----|----|---|---|-----|-----|-----|-----|---|----|-----|----|-----|---|-----|-----|-----|-----|---|-----|-----|-----|-----|---|-----|-----|-----|-----|
| FCO                 | Evaporator fan operating mode.                                                                                                                                                                                                                                                                                                                                        | 0...4   | num |                                                                                                                                                   |         |      |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     | Pb2                                                                                                                                                                                                                                                                                                                                                                   |         |     | H42                                                                                                                                               | FCo     | day  |     | night |     | Cn | Cf    | Cn | Cf | ok | y | 0 | T | Off | T | Off | 1 | T | T | T | T | 2 | T | T | T | T | 3 | T | DCd | T | DCn | 4 | T | DCd | T | DCn | no | n | 0 | On | Off | On | Off | 1 | On | On | On | On | 2 | DCd | DCd | DCn | DCn | 3 | On | DCd | On | DCn | 4 | On | DCd | On | DCn | ko | y | 0 | DCd | Off | DCn | Off | 1 | On | Off | On | Off | 2 | DCd | DCd | DCn | DCn | 3 | DCd | DCd | DCn | DCn | 4 | DCd | DCd | DCn | DCn |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   |         | Pb2  | H42 | FCo   | day |    | night |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     | Cn                                                                                                                                                                                                                                                                                                                                                                    |         |     | Cf                                                                                                                                                | Cn      |      |     |       | Cf  |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     | ok                                                                                                                                                                                                                                                                                                                                                                    |         |     | y                                                                                                                                                 | 0       | T    | Off | T     | Off |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 1       | T    | T   | T     | T   |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 2       | T    | T   | T     | T   |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 3       | T    | DCd | T     | DCn |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 4       | T    | DCd | T     | DCn |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     | no                                                                                                                                                                                                                                                                                                                                                                    |         |     | n                                                                                                                                                 | 0       | On   | Off | On    | Off |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 1       | On   | On  | On    | On  |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 2       | DCd  | DCd | DCn   | DCn |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 3       | On   | DCd | On    | DCn |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 4       | On   | DCd | On    | DCn |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     | ko                                                                                                                                                                                                                                                                                                                                                                    |         |     | y                                                                                                                                                 | 0       | DCd  | Off | DCn   | Off |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 1       | On   | Off | On    | Off |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 2       | DCd  | DCd | DCn   | DCn |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 3       | DCd  | DCd | DCn   | DCn |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   | 4       | DCd  | DCd | DCn   | DCn |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     | <b>Headings legend:</b> <ul style="list-style-type: none"><li>• <b>Pb2</b> = probe Pb2 status</li><li>• <b>day</b> = day mode</li><li>• <b>night</b> = night mode</li><li>• <b>Cn</b> = compressor on</li><li>• <b>Cf</b> = compressor off.</li></ul>                                                                                                                 |         |     |                                                                                                                                                   |         |      |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     | <b>Status legend:</b> <ul style="list-style-type: none"><li>• <b>ok</b> = probe present</li><li>• <b>ko</b> = probe in error E2</li><li>• <b>no</b> = no probe</li><li>• <b>T</b> = thermostat controlled fans</li><li>• <b>On</b> = fans on</li><li>• <b>Off</b> = fans off</li><li>• <b>DCd</b> = day duty cycle</li><li>• <b>DCn</b> = night duty cycle.</li></ul> |         |     |                                                                                                                                                   |         |      |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     | FOd                                                                                                                                                                                                                                                                                                                                                                   |         |     | Evaporator fan status with door open. <ul style="list-style-type: none"><li>• <b>OFF</b>(0) = Fans off</li><li>• <b>On</b>(1) = Fans on</li></ul> | OFF/On  | flag |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
|                     | FdC                                                                                                                                                                                                                                                                                                                                                                   |         |     | Evaporator fan shutoff delay after compressor deactivation.                                                                                       | 0...250 | min  |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
| FOn                 | Fan on time for day duty cycle. Applies when Duty cycle mode is active (see <b>FCO</b> ).                                                                                                                                                                                                                                                                             | 0...250 | min |                                                                                                                                                   |         |      |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
| FOF                 | Fan off time for day duty cycle. Applies when Duty cycle mode is active (see <b>FCO</b> ).                                                                                                                                                                                                                                                                            | 0...250 | min |                                                                                                                                                   |         |      |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
| Fnn                 | Fan on time for night duty cycle. Applies when Duty cycle mode is active (see <b>FCO</b> ).                                                                                                                                                                                                                                                                           | 0...250 | min |                                                                                                                                                   |         |      |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
| FnF                 | Fan off time for night duty cycle. Applies when Duty cycle mode is active (see <b>FCO</b> ).                                                                                                                                                                                                                                                                          | 0...250 | min |                                                                                                                                                   |         |      |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |
| FE (Modulated Fans) |                                                                                                                                                                                                                                                                                                                                                                       |         |     |                                                                                                                                                   |         |      |     |       |     |    |       |    |    |    |   |   |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |   |     |   |     |   |   |     |   |     |    |   |   |    |     |    |     |   |    |    |    |    |   |     |     |     |     |   |    |     |    |     |   |    |     |    |     |    |   |   |     |     |     |     |   |    |     |    |     |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |

| PAR                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Range                                 | UM    |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-------|
| <b>FE1</b>         | Sets the probe used by the modulated fans. <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pb6</b> (6) = probe Pb6</li> <li><b>Pb7</b> (7) = probe Pb7</li> <li><b>LP</b> (8) = remote probe (Link<sup>2</sup>)</li> <li><b>rP</b> (9) = remote probe</li> <li><b>Pbi</b> (10) = virtual probe</li> <li><b>PFi</b> (11) = filtered virtual probe</li> <li><b>PbC</b> (12) = KDX terminal analogue input</li> </ul> | diS, Pb1...Pb7, LP, rP, Pbi, PFi, PbC | num   |
| <b>FEt</b>         | <b>FES</b> differential management mode. <ul style="list-style-type: none"> <li><b>AbS</b> (0) = absolute value</li> <li><b>rEL</b> (1) = relative value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | AbS/rEL                               | flag  |
| <b>FES</b>         | "Modulated fans" regulator inhibiting temperature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -58.0...302                           | °C/°F |
| <b>FEd</b>         | Tripping differential for "modulated fans" regulator (absolute or relative).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.1...50.0                            | °C/°F |
| <b>FEu</b>         | Threshold value (Cut-OFF) on "modulated fans" regulator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.0...25.0                            | °C/°F |
| <b>FEC</b>         | Activation differential for the threshold value (Cut-OFF) on "modulated fans" regulator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.1...25.0                            | °C/°F |
| <b>FEr</b>         | Fan deactivation delay time from compressor stoppage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0...250                               | min   |
| <b>FE2</b>         | Minimum implementation percentage applied to the analog output in day mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0...100                               | %     |
| <b>FE3</b>         | Maximum implementation percentage applied to the analog output in day mode with the compressor running.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0...100                               | %     |
| <b>FE4</b>         | Maximum implementation percentage applied to the analog output in day mode with the compressor off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0...100                               | %     |
| <b>FE5</b>         | Minimum implementation percentage applied to the analog output in night mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0...100                               | %     |
| <b>FE6</b>         | Maximum implementation percentage applied to the analog output in night mode with the compressor running.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0...100                               | %     |
| <b>FE7</b>         | Maximum implementation percentage applied to the analog output in night mode with the compressor off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0...100                               | %     |
| <b>FE8</b>         | Implementation percentage applied to the analog output during defrosting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0...100                               | %     |
| <b>FE9</b>         | Implementation percentage applied to the analog output in the event of a probe error.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0...100                               | %     |
| <b>FEA</b>         | Modulated fans pick-up percentage. Used to overcome thermal inertia of the fans in the event of extended usage at low speed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0...100                               | %     |
| <b>FEb</b>         | Modulated fans pick-up time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0...250                               | s     |
| <b>FEP</b>         | Fan forcing procedure duration at pick-up speed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0...250                               | min   |
| <b>AL (Alarms)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                       |       |
| <b>rA1</b>         | Sets probe 1 used for temperature alarms. <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>PFi</b> (7) = filtered virtual probe</li> </ul>                                                                                                                                                                                                                                  | diS, Pb1...Pb5, Pbi, PFi              | num   |
| <b>rA2</b>         | Sets probe 2 used for temperature alarms. Same as <b>rA1</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | diS, Pb1...Pb5, Pbi, PFi              | num   |
| <b>Att</b>         | Sets the absolute or relative value for parameters <b>HA1/HA2</b> and <b>LA1/LA2</b> . <ul style="list-style-type: none"> <li><b>AbS</b> (0) = absolute value</li> <li><b>rEL</b> (1) = relative value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                   | AbS/rEL                               | flag  |
| <b>AFd</b>         | Alarm activation differential.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1...25.0                            | °C/°F |

| PAR                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Range                         | UM     |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------|
| HA1                                    | Probe 1 maximum alarm (only if <b>rA1</b> ≠diS). Temperature value ( <b>Att</b> function) which, when exceeded, will lead to the activation of alarm signaling.                                                                                                                                                                                                                                                                                                                 | LA1...302                     | °C/°F  |
| LA1                                    | Probe 1 minimum alarm (only if <b>rA1</b> ≠diS). Temperature value ( <b>Att</b> function) which, when exceeded, will lead to the activation of alarm signaling.                                                                                                                                                                                                                                                                                                                 | -58.0...HA1                   | °C/°F  |
| HA2                                    | Probe 2 maximum alarm (only if <b>rA2</b> ≠dis). Temperature value ( <b>Att</b> function) which, when exceeded, will lead to the activation of alarm signaling.                                                                                                                                                                                                                                                                                                                 | LA2...302                     | °C/°F  |
| LA2                                    | Probe 2 minimum alarm (only if <b>rA2</b> ≠dis). Temperature value ( <b>Att</b> function) which, when exceeded, will lead to the activation of alarm signaling.                                                                                                                                                                                                                                                                                                                 | -58.0...HA2                   | °C/°F  |
| PAO                                    | Alarm exclusion time when switching on the device, after a power outage. Refers only to high and low temperature alarms.                                                                                                                                                                                                                                                                                                                                                        | 0...10                        | hours  |
| dAO                                    | Temperature alarm exclusion time after defrosting.                                                                                                                                                                                                                                                                                                                                                                                                                              | 0...250                       | min    |
| OAO                                    | Alarm signaling delay (for high and low temperature) after deactivation of the digital input (door closure).                                                                                                                                                                                                                                                                                                                                                                    | 0...10                        | hours  |
| tdO                                    | Door open alarm activation delay time.                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0...250                       | min    |
| tA1                                    | Temperature alarm 1 signaling delay (only if <b>rA1</b> ≠diS). Refers only to high and low temperature alarms <b>LA1</b> and <b>HA1</b> .                                                                                                                                                                                                                                                                                                                                       | 0...250                       | min    |
| tA2                                    | Temperature alarm 2 signaling delay (only if <b>rA2</b> ≠diS). Refers only to high and low temperature alarms <b>LA2</b> and <b>HA2</b> .                                                                                                                                                                                                                                                                                                                                       | 0...250                       | min    |
| dAt                                    | Defrost ended due to timeout alarm indication.<br><ul style="list-style-type: none"> <li><b>no</b>(0) = alarm not activated</li> <li><b>yES</b>(1) = alarm activated</li> </ul>                                                                                                                                                                                                                                                                                                 | no/yES                        | flag   |
| EAL                                    | An external alarm inhibits the regulators.<br><ul style="list-style-type: none"> <li><b>0</b> = does not inhibit the regulators</li> <li><b>1</b> = compressor and defrost inhibited</li> <li><b>2</b> = fans, compressor and defrost inhibited;</li> </ul>                                                                                                                                                                                                                     | 0/1/2                         | num    |
| rA3                                    | Sets the input used by the two threshold/LKD alarm regulator.<br><ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>PFi</b> (7) = filtered virtual probe</li> <li><b>PbC</b> (8) = KDX terminal analogue input</li> </ul> | diS, Pb1...Pb5, Pbi, PFi, PbC | num    |
| ALL                                    | Low alarm threshold (warning).                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0...ALH                     | num    |
| ALH                                    | High alarm threshold (alarm).                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ALL...100                     | num    |
| dAL                                    | Leak detector alarm activation differential.                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.1...100                     | °C/°F  |
| AL1                                    | Minimum persistence time above the <b>ALL</b> threshold.                                                                                                                                                                                                                                                                                                                                                                                                                        | 0...250                       | min    |
| AL2                                    | Minimum persistence time above the <b>ALH</b> threshold.                                                                                                                                                                                                                                                                                                                                                                                                                        | 0...250                       | min    |
| tP                                     | Alarm acknowledgment with any key.<br><ul style="list-style-type: none"> <li><b>no</b> (0) = silencing disabled</li> <li><b>yES</b> (1) = silencing enabled.</li> </ul>                                                                                                                                                                                                                                                                                                         | no/yES                        | flag   |
| Art                                    | Link2 supervision alarm activation period. Sets the time period for verifying network operation. The <b>AtS</b> alarm is not shown on the display:<br><ul style="list-style-type: none"> <li>if <b>Art</b>=0 it is disabled</li> <li>if <b>Art</b>=1 it is reset automatically after 5 minutes</li> <li>if <b>Art</b>≥2 it is reset automatically after 10 minutes.</li> </ul>                                                                                                  | 0...250                       | min*10 |
| <b>Lit (Lights and Digital Inputs)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |        |
| dSd                                    | Enable light relay from door switch.<br><ul style="list-style-type: none"> <li><b>no</b> (0) = door opening does not switch on the light</li> <li><b>yES</b> (1) = door opening switches on the light (if it was off).</li> </ul>                                                                                                                                                                                                                                               | no/yES                        | flag   |
| dLt                                    | Light relay (cold room light) deactivation (switch-off) delay. The cold room light remains on for <b>dLt</b> minutes after the door is closed (only if <b>dSd</b> =yES).                                                                                                                                                                                                                                                                                                        | 0...250                       | min    |

| PAR                | Description                                                                                                                                                                                                                                                                                                                                                                      | Range                    | UM   |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------|
| OFL                | Enables cold room light switch-off via key, even if the delay <b>dLt</b> is enabled. <ul style="list-style-type: none"> <li><b>no</b> (0) = no</li> <li><b>yES</b> (1) = yes</li> </ul>                                                                                                                                                                                          | no/yES                   | flag |
| dOd                | Digital input shuts off utilities. <ul style="list-style-type: none"> <li><b>0</b> = disabled</li> <li><b>1</b> = disables fans</li> <li><b>2</b> = disables compressor</li> <li><b>3</b> = disables fans and compressor.</li> </ul>                                                                                                                                             | 0...3                    | num  |
| dOA                | Behavior forced from digital input (only if <b>PEA</b> ≠0). <ul style="list-style-type: none"> <li><b>0</b> = compressor activation</li> <li><b>1</b> = fan activation</li> <li><b>2</b> = compressor and fan activation</li> <li><b>3</b> = compressor deactivation</li> <li><b>4</b> = fan deactivation</li> <li><b>5</b> = compressor and fan deactivation.</li> </ul>        | 0...5                    | num  |
| PEA                | Selection of digital input with resource inhibiting/unlocking function. <ul style="list-style-type: none"> <li><b>0</b> = function disabled</li> <li><b>1</b> = associated with door switch</li> <li><b>2</b> = associated with external alarm</li> <li><b>3</b> = associated with external alarm and door switch.</li> </ul>                                                    | 0...3                    | num  |
| dCO                | Compressor activation/switch-off delay after consent (DI activation).                                                                                                                                                                                                                                                                                                            | 0...250                  | min  |
| dFO                | Fan activation/switch-off delay after consent (DI activation).                                                                                                                                                                                                                                                                                                                   | 0...250                  | min  |
| ASb                | Sets whether the light key and light enabling when door opened function can be activated even while the controller is OFF. <ul style="list-style-type: none"> <li><b>no</b> (0) = disables the relay until stand-by mode has been exited</li> <li><b>yES</b> (1) = the relay status does not change and it can be activated/disabled via key.</li> </ul>                         | no/yES                   | flag |
| <b>Lin (Link2)</b> |                                                                                                                                                                                                                                                                                                                                                                                  |                          |      |
| L00                | Probe shared via Link2: <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>PFi</b> (7) = filtered virtual probe</li> </ul> | diS, Pb1...Pb5, Pbi, PFi | num  |
| L01                | Shares the displayed value with the Link2 network. <ul style="list-style-type: none"> <li><b>0</b> = prevents sending the displayed value from the device to the Link2 network</li> <li><b>1</b> = enables sending the displayed value from the device to the Link2 network</li> <li><b>2</b> = displays the value of the device with setting <b>L01</b> = 1.</li> </ul>         | 0/1/2                    | num  |
| L02                | Sends the Setpoint value to the Link2 network when it is changed. <ul style="list-style-type: none"> <li><b>no</b> (0) = no</li> <li><b>yES</b> (1) = yes.</li> </ul>                                                                                                                                                                                                            | no/yES                   | flag |
| L03                | Enables the sending of the defrost request to the Link2 network. <ul style="list-style-type: none"> <li><b>0</b> = send defrost request disabled</li> <li><b>1</b> = primary device for sending simultaneous defrost request</li> <li><b>2</b> = primary device for sending sequential defrost request</li> </ul>                                                                | 0/1/2                    | num  |
| L04                | Defrost end method. <ul style="list-style-type: none"> <li><b>ind</b> (0) = independent</li> <li><b>dEP</b> (1) = dependent. Waits for all controllers to have finished defrosting.</li> </ul>                                                                                                                                                                                   | ind/dEP                  | flag |
| L05                | Enables Stand-by command synchronization <ul style="list-style-type: none"> <li><b>no</b> (0) = no</li> <li><b>yES</b> (1) = yes</li> </ul>                                                                                                                                                                                                                                      | no/yES                   | flag |

| PAR                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Range        | UM     |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|
| L06                             | Enables light command synchronization <ul style="list-style-type: none"> <li>no (0) = no</li> <li>yES (1) = yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                | no/yES       | flag   |
| L07                             | Enables Energy Saving command synchronization <ul style="list-style-type: none"> <li>no (0) = no</li> <li>yES (1) = yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                        | no/yES       | flag   |
| L08                             | Enables AUX command synchronization <ul style="list-style-type: none"> <li>no (0) = no</li> <li>yES (1) = yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                  | no/yES       | flag   |
| L09                             | Enables sharing of the saturation probe (pressure). <ul style="list-style-type: none"> <li>no (0) = no</li> <li>yES (1) = yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                  | no/yES       | flag   |
| L10                             | Dependent defrost end timeout.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...250      | min    |
| L11                             | Number of devices connected to Link2. If the number of devices differs from the set value, a Link2 alarm will be activated (ELi).                                                                                                                                                                                                                                                                                                                                                                                         | 0...8        | num    |
| L12                             | Alarm relay sharing method via Link2: <ul style="list-style-type: none"> <li>0 = function disabled</li> <li>1 = primary alarm relay (The relay is activated from local alarm relay or secondary alarm relay)</li> <li>2 = secondary alarm relay</li> </ul>                                                                                                                                                                                                                                                                | 0/1/2        | num    |
| L13                             | Link2 serial frame configuration <ul style="list-style-type: none"> <li>0 = DOMINO ZERO operation</li> <li>1 = standard operation (with non-DOMINO ZERO device)</li> </ul>                                                                                                                                                                                                                                                                                                                                                | 0/1          | flag   |
| L14                             | Force cooling mode <ul style="list-style-type: none"> <li>0 = disabled</li> <li>1 = force cooling mode when at least one device in a Link2 network is in defrost</li> </ul>                                                                                                                                                                                                                                                                                                                                               | 0/1          | flag   |
| L15                             | Share buzzer and alarm silenced command via Link2 <ul style="list-style-type: none"> <li>0 = function disabled</li> <li>1 = main board</li> <li>2 = remote board (shares buzzer and alarm silenced command with main board)</li> </ul>                                                                                                                                                                                                                                                                                    | 0/1/2        | flag   |
| <b>dEC (Deep cooling cycle)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |        |
| dCS                             | Deep cooling cycle setpoint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -58.0...302  | °C/°F  |
| tdC                             | Deep cooling cycle duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0...250      | min    |
| dCC                             | Defrost delay after a deep cooling cycle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...250      | min    |
| <b>EnS (Energy Saving)</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |        |
| ESt                             | Type of event activated via RTC. <ul style="list-style-type: none"> <li>0 = disabled</li> <li>1 = Energy Saving</li> <li>2 = Energy Saving + Light off</li> <li>3 = Energy Saving + Light off + AUX output active</li> <li>4 = Device off</li> <li>5 = Energy saving + Terminal buzzer silencing</li> <li>6 = Energy saving + Light off + Terminal buzzer silencing</li> <li>7 = Energy Saving + Light off + AUX output active + Terminal buzzer silencing</li> <li>8 = Device off + Terminal buzzer silencing</li> </ul> | 0...8        | num    |
| ESF                             | Activates night mode (energy saving) for the fans. <ul style="list-style-type: none"> <li>no (0) = disabled</li> <li>yES (1) = enabled if energy saving mode is active (only if ES<sub>t</sub>≠0 and ES<sub>t</sub>≠4).</li> </ul>                                                                                                                                                                                                                                                                                        | no/yES       | flag   |
| Cdt                             | Door closure time due to dynamic setpoint activation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0...255      | min*10 |
| ESO                             | Cumulative door open time due to dynamic setpoint disabling.                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0...10       | num    |
| OS1                             | Offset on setpoint 1 (SP1) in energy saving mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -50.0...50.0 | °C/°F  |
| OS2                             | Offset on setpoint 2 (SP2) in energy saving mode (only if rE≠0).                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -50.0...50.0 | °C/°F  |
| Od1                             | Energy saving offset 1 for refrigerated display cabinets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -50.0...50.0 | °C/°F  |

| PAR                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Range                             | UM    |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------|
| Od2                        | Energy saving offset 2 for refrigerated display cabinets (only if <b>rE</b> ≠0).                                                                                                                                                                                                                                                                                                                                                                                                       | -50.0...50.0                      | °C/°F |
| dn1                        | Differential on setpoint 1 (SP1) in energy saving mode.                                                                                                                                                                                                                                                                                                                                                                                                                                | -58.0...302                       | °C/°F |
| dn2                        | Differential on setpoint 2 (SP2) in energy saving mode (only if <b>rE</b> ≠0).                                                                                                                                                                                                                                                                                                                                                                                                         | -58.0...302                       | °C/°F |
| EdH                        | Weekday Energy Saving start hour.<br><ul style="list-style-type: none"> <li><b>0...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                        | 0...24                            | hours |
| Edn                        | Weekday Energy Saving start minutes.                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0...59                            | min   |
| Edd                        | Weekday Energy Saving duration.                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1...72                            | hours |
| EFH                        | Weekend/holiday Energy Saving start hour.<br><ul style="list-style-type: none"> <li><b>0...23</b> = start hour</li> <li><b>24</b> = disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                | 0...24                            | hours |
| EFn                        | Weekend/holiday Energy Saving start minutes.                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0...59                            | min   |
| EFd                        | Weekend/holiday Energy Saving duration.                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1...72                            | hours |
| <b>FrH (Frame Heater)</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                   |       |
| FH                         | Anti-sweater heaters probe (FH).<br><ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>dc</b> (1) = duty cycle</li> <li><b>Pb1</b> (2) = probe Pb1</li> <li><b>Pb2</b> (3) = probe Pb2</li> <li><b>Pb3</b> (4) = probe Pb3</li> <li><b>Pb4</b> (5) = probe Pb4</li> <li><b>Pb5</b> (6) = probe Pb5</li> <li><b>Pbi</b> (7) = virtual probe</li> <li><b>Pfi</b> (8) = filtered virtual probe</li> <li><b>PbC</b> (9) = KDX terminal analogue input</li> </ul> | diS, dc, Pb1...Pb5, Pbi, Pfi, PbC | num   |
| FHt                        | Anti-sweater heaters operating period duration (FH), only used if the OC output is used with SSR relay.                                                                                                                                                                                                                                                                                                                                                                                | 1...250                           | s*10  |
| FH0                        | Setpoint corresponding to the anti-sweater heaters (only if <b>FH</b> ≠dis and <b>FH</b> ≠dc).                                                                                                                                                                                                                                                                                                                                                                                         | -58.0...302                       | °C/°F |
| FH1                        | Offset corresponding to the anti-sweater heaters (only if <b>FH</b> ≠dis and <b>FH</b> ≠dc).                                                                                                                                                                                                                                                                                                                                                                                           | 0.0...25.0                        | °C/°F |
| FH2                        | Band corresponding to the anti-sweater heaters (only if <b>FH</b> ≠dis and <b>FH</b> ≠dc).                                                                                                                                                                                                                                                                                                                                                                                             | -58.0...302                       | °C/°F |
| FH3                        | Minimum percentage for the anti-sweater heaters (only if <b>FH</b> ≠dis and <b>FH</b> ≠dc).                                                                                                                                                                                                                                                                                                                                                                                            | 0...100                           | %     |
| FH4                        | Maximum percentage for the day Duty cycle.                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0...100                           | %     |
| FH5                        | Maximum percentage for the night Duty cycle.                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0...100                           | %     |
| FH6                        | Anti-sweater heaters percentage during defrost.                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0...100                           | %     |
| <b>Add (Communication)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                   |       |
| Adr                        | Modbus protocol controller address.                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1...250                           | flag  |
| bAU                        | Modbus Baudrate selection.<br><ul style="list-style-type: none"> <li><b>96</b> (0) = 9600</li> <li><b>192</b> (1) = 19200</li> <li><b>384</b> (2) = 38400</li> </ul>                                                                                                                                                                                                                                                                                                                   | 96/192/384                        | num   |
| Pty                        | Modbus parity bit.<br><ul style="list-style-type: none"> <li><b>n</b>(0) = none</li> <li><b>E</b>(1) = even</li> <li><b>o</b>(2) = odd.</li> </ul>                                                                                                                                                                                                                                                                                                                                     | n/E/o                             | num   |
| <b>diS (Display)</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                   |       |
| LOC                        | LOCK. Setpoint change lock. It is still possible to enter parameter programming and change them, including the status of this parameter in order to unlock the terminal.<br><ul style="list-style-type: none"> <li><b>no</b> (0) = no</li> <li><b>yES</b> (1) = yes</li> </ul>                                                                                                                                                                                                         | no/yES                            | flag  |
| PS1                        | PAssword 1. When enabled ( <b>PS1</b> ≠0) this is the access key for level 1 parameters ( <b>User</b> ).                                                                                                                                                                                                                                                                                                                                                                               | 0...250                           | num   |
| PS2                        | PAssword 2. When enabled ( <b>PS2</b> ≠0) this is the access key for level 2 parameters ( <b>Installer</b> ).                                                                                                                                                                                                                                                                                                                                                                          | 0...250                           | num   |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Range                        | UM      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------|
| <b>ndt</b> | Display with decimal point.<br><ul style="list-style-type: none"> <li><b>no</b> (0) = no (integers only)</li> <li><b>yES</b> (1) = yes (display with decimal).</li> </ul>                                                                                                                                                                                                                                                                                        | no/yES                       | flag    |
| <b>CA1</b> | Calibration of probe Pb1 (only if <b>H41</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb1. This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                   | -30.0...30.0                 | °C/°F   |
| <b>CA2</b> | Calibration of probe Pb2 (only if <b>H42</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb2. This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                   | -30.0...30.0                 | °C/°F   |
| <b>CA3</b> | Calibration of probe Pb3 (only if <b>H43</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb3. This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                   | -30.0...30.0                 | °C/°F   |
| <b>CA4</b> | Calibration of probe Pb4 (only if <b>H44</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb4. This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                   | -30.0...30.0                 | °C/°F   |
| <b>CA5</b> | Calibration of probe Pb5 (only if <b>H45</b> ≠Pro). Positive or negative temperature values that are added to those read by Pb5. This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                                                                   | -30.0...30.0                 | °C/°F   |
| <b>CA6</b> | Calibration of pressure transducer Pb6 (4...20 mA) (only if <b>H46</b> =Pro). Positive or negative temperature values that are added to those read by pressure transducer Pb6 (4...20 mA). This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                         | -30.0...30.0                 | bar/psi |
| <b>CA7</b> | Calibration of ratiometric transducer Pb7 (only if <b>H47</b> =Pro). Positive or negative temperature values that are added to those read by ratiometric transducer Pb7. This sum is used for the displayed temperature as well as for the regulation.                                                                                                                                                                                                           | -30.0...30.0                 | bar/psi |
| <b>LdL</b> | Minimum value that can be displayed by the device.                                                                                                                                                                                                                                                                                                                                                                                                               | -58.0...HdL                  | °C/°F   |
| <b>HdL</b> | Maximum value that can be displayed by the device.                                                                                                                                                                                                                                                                                                                                                                                                               | LdL...302                    | °C/°F   |
| <b>ddl</b> | Display mode during defrosting.<br><ul style="list-style-type: none"> <li><b>0</b> = display the temperature read by the probe or the setpoint (see <b>ddd</b>)</li> <li><b>1</b> = locks the reading at the temperature value read by the probe at the start of defrost until reaching SEt (or until the expiration of <b>Ldd</b>)</li> <li><b>2</b> = displays label dEF during defrost until reaching SEt (or until the expiration of <b>Ldd</b>).</li> </ul> | 0/1/2                        | num     |
| <b>Ldd</b> | Display unlocking timeout value.                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0...250                      | min     |
| <b>drO</b> | Selects the unit of measure used when displaying the temperature read by the probes.<br><ul style="list-style-type: none"> <li><b>C</b> (0) = °C</li> <li><b>F</b> (1) = °F</li> </ul>                                                                                                                                                                                                                                                                           | C/F                          | flag    |
| <b>SbP</b> | Selects the unit of measure for displaying the value read by the pressure sensors 4...20 mA (Pb6) and ratiometric sensors (Pb7).<br><ul style="list-style-type: none"> <li><b>bar</b> (0) = bar</li> <li><b>psi</b> (1) = psi.</li> </ul>                                                                                                                                                                                                                        | bar/psi                      | flag    |
| <b>rEP</b> | Selects relative/absolute pressure.<br><ul style="list-style-type: none"> <li><b>0</b> = relative pressure</li> <li><b>1</b> = absolute pressure</li> </ul>                                                                                                                                                                                                                                                                                                      | 0/1                          | flag    |
| <b>ddd</b> | Sets the value to show on the display.<br><ul style="list-style-type: none"> <li><b>SP1</b> (0) = setpoint SP1</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>LP</b> (7) = remote probe</li> <li><b>PFi</b> (8) = filtered virtual probe</li> </ul>                     | SP1, Pb1...Pb5, Pbi, LP, PFi | num     |

| PAR                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Range                                       | UM  |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----|
| <b>ddE</b>                 | Sets the value to show on the display of the Echo module. <ul style="list-style-type: none"> <li><b>SP1</b> (0) = setpoint SP1</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>LP</b> (7) = remote probe</li> <li><b>PFi</b> (8) = filtered virtual probe</li> <li><b>PbC</b> (9) = KDX terminal analogue input</li> <li><b>PHr</b> (10) = KDX terminal analogue input with HR icon</li> <li><b>rtC</b> (11) = hours and minutes (KDX terminal only)</li> </ul>                                                                                                                   | SP1, Pb1...Pb5, Pbi, LP, PFi, PbC, PHr, rtC | num |
| <b>HCP (HACCP)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |     |
| <b>rPH</b>                 | Sets which probe the HACCP alarms will use. <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                               | diS, Pb1...Pb5                              | num |
| <b>CnF (Configuration)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |     |
| <b>trA</b>                 | Selects the model of ratiometric transducer used. <ul style="list-style-type: none"> <li><b>USE</b> (0) = Generic Probe Set by customer</li> <li><b>rA1</b> (1) = EWPA 010 R 0/5 V 0/10 BAR FEMALE</li> <li><b>rA2</b> (2) = EWPA 030 R 0/5 V 0/30 BAR FEMALE</li> <li><b>rA3</b> (3) = EWPA 050 R 0/5 V 0/50 BAR FEMALE</li> <li><b>rA4</b> (4) = AKS 32R -1 ...6 BAR</li> <li><b>rA5</b> (5) = AKS 32R -1 ...12 BAR</li> <li><b>rA6</b> (6) = AKS 32R -1 ... 20 BAR</li> <li><b>rA7</b> (7) = AKS 32R -1 ... 34 BAR</li> <li><b>rA8</b> (8) = Reserved.</li> </ul> <p><b>Note:</b> The upper and lower limits of probes rA1... rA8 are pre-set (and cannot be changed), while if you select USE you will need to set them via parameters <b>H05</b> and <b>H06</b>.</p> | USE, rA1...rA8                              | num |
| <b>H00</b>                 | Select probe type used (Pb1...Pb5). <ul style="list-style-type: none"> <li><b>ntc</b> (0) = NTC</li> <li><b>Ptc</b> (1) = PTC</li> <li><b>Pt1</b> (2) = Pt1000</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ntc, PTC, Pt1                               | num |
| <b>H02</b>                 | Key activation time, when configured with a second function.<br>For the ESC, UP and DOWN keys configured with a second function (defrost, AUX, etc.), this sets the time for quick activation of that function. AUX and LIGHT are not included in this, as they have a fixed time of 0.5 seconds.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0...250                                     | s   |
| <b>H03</b>                 | Lower limit for pressure transducer Pb6 4-20 mA (relative pressure).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -1.0...H04                                  | bar |
| <b>H04</b>                 | Upper limit for pressure transducer Pb6 4-20 mA (relative pressure).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | H03...150                                   | bar |
| <b>H05</b>                 | Lower limit for ratiometric transducer Pb7 (relative pressure).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -1.0...H06                                  | bar |
| <b>H06</b>                 | Upper limit for ratiometric transducer Pb7 (relative pressure).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | H05...150                                   | bar |
| <b>08L</b>                 | KDX analog input lower limit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0...100.0                                 | num |
| <b>08H</b>                 | KDX analog input upper limit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0...100.0                                 | num |
| <b>08P</b>                 | Sets how show the value on the display of the <b>ECPlus</b> : <ul style="list-style-type: none"> <li><b>0</b> = value with decimal point</li> <li><b>1</b> = value without decimal point</li> <li><b>2</b> = value * 10</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0/1/2                                       | num |
| <b>08U</b>                 | Unit of measure of the KDX terminal analogue input. <ul style="list-style-type: none"> <li><b>0</b> = disabled</li> <li><b>1</b> = %RH (humidity)</li> <li><b>2</b> = ppm</li> <li><b>3</b> = % (valve opening)</li> <li><b>4</b> = °C</li> <li><b>5</b> = °F</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...5                                       | num |



| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Range     | UM             |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|
| <b>H08</b> | Stand-by operating mode <ul style="list-style-type: none"> <li><b>0</b> = display off; the regulators are active and the device signals possible alarms by reactivating the display</li> <li><b>1</b> = display off; the regulators and the alarms are blocked</li> <li><b>2</b> = the display shows the label "OFF"; the regulators and alarms are inhibited.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0/1/2     | num            |
| <b>H11</b> | Configuration of digital input 1/polarity (Pb1) (only if <b>H41=di</b> ). <ul style="list-style-type: none"> <li><b>0</b> = disabled</li> <li><b>±1</b> = start of defrost</li> <li><b>±2</b> = end of defrost</li> <li><b>±3</b> = light</li> <li><b>±4</b> = energy saving</li> <li><b>±5</b> = AUX</li> <li><b>±6</b> = external alarm</li> <li><b>±7</b> = stand-by</li> <li><b>±8</b> = door switch</li> <li><b>±9</b> = preheat alarm</li> <li><b>±10</b> = reserved</li> <li><b>±11</b> = reserved</li> <li><b>±12</b> = reserved</li> <li><b>±13</b> = deep cooling cycle (DCC)</li> <li><b>±14</b> = force EEV deactivation</li> <li><b>±15</b> = force fan activation</li> <li><b>±16</b> = force <b>OF1</b> (remote offset)</li> <li><b>±17</b> = general input</li> <li><b>±18</b> = force cooling</li> <li><b>±19</b> = panic alarm</li> </ul> <b>Note:</b> <ul style="list-style-type: none"> <li>the + sign indicates that the input is active if the contact is closed.</li> <li>the - sign indicates that the input is active if the contact is open.</li> </ul> | -19...+19 | num            |
| <b>H12</b> | Configuration of digital input 2/polarity (Pb2) (only if <b>H42=di</b> ). Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -19...+19 | num            |
| <b>H13</b> | Configuration of digital input 3/polarity (Pb3) (only if <b>H43=di</b> ). Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -19...+19 | num            |
| <b>H14</b> | Configuration of digital input 4/polarity (Pb4) (only if <b>H44=di</b> ). Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -19...+19 | num            |
| <b>H15</b> | Configuration of digital input 5/polarity (Pb5) (only if <b>H45=di</b> ). Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -19...+19 | num            |
| <b>H16</b> | Configuration of digital input 6/polarity (Pb6) (only if <b>H46=di</b> ). Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -19...+19 | num            |
| <b>H17</b> | Configuration of digital input 7/polarity (Pb7) (only if <b>H47=di</b> ). Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -19...+19 | num            |
| <b>H18</b> | Digital input 8/polarity (DI) configuration. Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -19...+19 | num            |
| <b>i01</b> | Digital input 9/polarity (DI1 KDX) configuration. Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -19...+19 | num            |
| <b>i02</b> | Digital input 10/polarity (DI2 KDX) configuration. Same as <b>H11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -19...+19 | num            |
| <b>dti</b> | Unit of measure for digital inputs DI1 (Pb1), DI2 (Pb2), DI, i01 (DI1 KDX) and i02 (DI2 KDX). If one of the digital inputs indicated is configured as DI, the unit of measure can be set. <ul style="list-style-type: none"> <li><b>0</b> = minutes</li> <li><b>1</b> = seconds.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0/1       | flag           |
| <b>d11</b> | Digital input 1 activation delay (Pb1) (only if <b>H41=di</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...255   | see <b>dti</b> |
| <b>d12</b> | Digital input 2 activation delay (Pb2) (only if <b>H42=di</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...255   | see <b>dti</b> |
| <b>d13</b> | Digital input 3 activation delay (Pb3) (only if <b>H43=di</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...255   | min            |
| <b>d14</b> | Digital input 4 activation delay (Pb4) (only if <b>H44=di</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...255   | min            |
| <b>d15</b> | Digital input 5 activation delay (Pb5) (only if <b>H45=di</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...255   | min            |
| <b>d16</b> | Digital input 6 activation delay (Pb6) (only if <b>H46=di</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...255   | min            |
| <b>d17</b> | Digital input 7 activation delay (Pb7) (only if <b>H47=di</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...255   | min            |
| <b>d18</b> | Digital input 8 (DI) activation delay.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...255   | min            |
| <b>01i</b> | Digital input 9 (DI1 KDX) activation delay.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0...255   | min            |
| <b>02i</b> | Digital input 10 (DI2 KDX) activation delay.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0...255   | min            |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Range        | UM   |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------|
| <b>H21</b> | Digital output 1 configuration ( <b>OUT1</b> ): <ul style="list-style-type: none"> <li>• <b>0</b> = disabled</li> <li>• <b>1</b> = compressor</li> <li>• <b>2</b> = defrost 1 / hot gas valve</li> <li>• <b>3</b> = evaporator fans</li> <li>• <b>4</b> = alarm</li> <li>• <b>5</b> = AUX</li> <li>• <b>6</b> = stand-by</li> <li>• <b>7</b> = light</li> <li>• <b>8</b> = anti-sweater heaters</li> <li>• <b>9</b> = defrost 2</li> <li>• <b>10</b> = reserved</li> <li>• <b>11</b> = condenser fans</li> <li>• <b>12</b> = General purpose regulator</li> <li>• <b>13</b> = hot gas: evaporator suction valve</li> <li>• <b>14</b> = alarm with inverted polarity</li> <li>• <b>15</b> = casing heater</li> <li>• <b>16</b> = condensation collection heater</li> <li>• <b>17</b> = liquid valve</li> <li>• <b>18</b> = leak detector alarm</li> <li>• <b>19</b> = PAn alarm</li> </ul> | 0...19       | num  |
| <b>H22</b> | Digital output 2 configuration ( <b>OUT2</b> ). Same as <b>H21</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0...19       | num  |
| <b>H23</b> | Digital output 3 configuration ( <b>OUT3</b> ). Same as <b>H21</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0...19       | num  |
| <b>H24</b> | Digital output 4 configuration ( <b>OUT4</b> ). Same as <b>H21</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0...19       | num  |
| <b>H25</b> | Digital output 5 configuration ( <b>OUT5</b> ). Same as <b>H21</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0...19       | num  |
| <b>H27</b> | Configuration of digital output 7 ( <b>Open Collector</b> ). Same as <b>H21</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0...19       | num  |
| <b>H29</b> | Enables buzzer on the terminal. <ul style="list-style-type: none"> <li>• <b>diS</b> (0) = buzzer disabled</li> <li>• <b>En</b> (1) = buzzer enabled.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | diS/En       | flag |
| <b>d01</b> | Digital output 8 configuration ( <b>OUT5 KDX</b> ). Same as <b>H21</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...19       | num  |
| <b>d02</b> | Digital output 9 configuration ( <b>OUT4 KDX</b> ). Same as <b>H21</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...19       | num  |
| <b>H31</b> | Configuration of the UP key. <ul style="list-style-type: none"> <li>• <b>0</b> = Disabled</li> <li>• <b>1</b> = Defrost</li> <li>• <b>2</b> = Reduced set</li> <li>• <b>3</b> = Light</li> <li>• <b>4</b> = Energy saving</li> <li>• <b>5</b> = AUX</li> <li>• <b>6</b> = Stand-by</li> <li>• <b>7</b> = Deep cooling cycle (DCC)</li> <li>• <b>8</b> = Defrost start/stop</li> <li>• <b>9</b> = Cabinet cleaning function</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0...9        | num  |
| <b>H32</b> | Configuration of the DOWN key. Same as <b>H31</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0...9        | num  |
| <b>H33</b> | Configuration of the ESC key. Same as <b>H31</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0...9        | num  |
| <b>H34</b> | Configuration of the Free 1 key. Same as <b>H31</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0...9        | num  |
| <b>H35</b> | Configuration of the Free 2 key. Same as <b>H31</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0...9        | num  |
| <b>H36</b> | Configuration of the Free 3 key. Same as <b>H31</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0...9        | num  |
| <b>H37</b> | Configuration of the Free 4 key. Same as <b>H31</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0...9        | num  |
| <b>H41</b> | Configuration of analog input 1 type (Pb1). <ul style="list-style-type: none"> <li>• <b>diS</b> (0) = disabled</li> <li>• <b>di</b> (1) = digital input</li> <li>• <b>Pro</b> (2) = probe input</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | diS, di, Pro | num  |
| <b>H42</b> | Configuration of analog input 2 type (Pb2). Same as <b>H41</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | diS, di, Pro | num  |
| <b>H43</b> | Configuration of analog input 3 type (Pb3). Same as <b>H41</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | diS, di, Pro | num  |
| <b>H44</b> | Configuration of analog input 4 type (Pb4). Same as <b>H41</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | diS, di, Pro | num  |
| <b>H45</b> | Configuration of analog input 5 type (Pb5). Same as <b>H41</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | diS, di, Pro | num  |
| <b>H46</b> | Configuration of analog input 6 type (Pb6 = 4...20 mA). Same as <b>H41</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | diS, di, Pro | num  |
| <b>H47</b> | Configuration of analog input 7 type (Pb7). Same as <b>H41</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | diS, di, Pro | num  |

| PAR                                     | Description                                                                                                                                                                                                                                                                                                                                                  | Range                  | UM   |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------|
| H48                                     | Configuration of analog input 8 type (KDX probe). <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>nu</b> (1) = reserved</li> <li><b>Pro</b> (2) = probe input</li> </ul>                                                                                                                                                        | diS, nu, Pro           | num  |
| H50                                     | Configuration of analog output type. <ul style="list-style-type: none"> <li><b>010</b> (0) = 0...10 V output</li> <li><b>420</b> (1) = 4...20 mA output</li> </ul>                                                                                                                                                                                           | 010/420                | flag |
| H51                                     | Regulator associated with analog output. <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>FH</b> (1) = Anti-sweater heaters (Frame Heater)</li> <li><b>PEr</b> (2) = Valve output opening percentage</li> <li><b>FAn</b> (3) = Fan modulation</li> </ul>                                                                         | diS, FH, PEr, FAn      | num  |
| H60                                     | Display selected application. <ul style="list-style-type: none"> <li><b>0</b> = disabled</li> <li><b>1</b> = AP1</li> <li><b>2</b> = AP2</li> <li><b>3</b> = AP3</li> <li><b>4</b> = AP4</li> <li><b>5</b> = AP5</li> <li><b>6</b> = AP6</li> <li><b>7</b> = AP7</li> <li><b>8</b> = AP8</li> </ul>                                                          | 0...8                  | num  |
| H68                                     | RTC present. <ul style="list-style-type: none"> <li><b>no</b> (0) = RTC not present</li> <li><b>yES</b> (1) = RTC present</li> </ul>                                                                                                                                                                                                                         | no/yES                 | flag |
| H70                                     | Sets 1st probe to use as a virtual probe. <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> </ul>                                                    | diS, Pb1...Pb5         | num  |
| H71                                     | Sets 2nd probe to use as a virtual probe. Same as <b>H70</b> .                                                                                                                                                                                                                                                                                               | diS, Pb1...Pb5         | num  |
| H72                                     | % calculation used by the virtual probe for daytime.                                                                                                                                                                                                                                                                                                         | 0...100                | num  |
| H73                                     | % calculation used by the virtual probe for night-time (Energy Saving mode).                                                                                                                                                                                                                                                                                 | 0...100                | num  |
| H74                                     | Sets the probe used as filtered virtual probe (PFi). <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> </ul> | diS, Pb1...Pb5, Pbi    | num  |
| H75                                     | Alpha filter constant to use when calculating the value displayed by the filtered virtual probe (value in thousandths).                                                                                                                                                                                                                                      | 1...1000               | num  |
| H76                                     | Offset value to use when calculating the value displayed by the filtered virtual probe.                                                                                                                                                                                                                                                                      | -999.9...999.9         | num  |
| <b>EE0 (Electronic Expansion Valve)</b> |                                                                                                                                                                                                                                                                                                                                                              |                        |      |
| Ety                                     | Selects the type of driver for the electronic valve. <ul style="list-style-type: none"> <li><b>0</b> = disabled</li> <li><b>1</b> = pulse driver.</li> </ul>                                                                                                                                                                                                 | 0/1                    | num  |
| rSP                                     | Saturation probe. <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb6</b> (1) = pressure transducer 4...20 mA</li> <li><b>Pb7</b> (2) = ratiometric transducer</li> <li><b>LSP</b> (3) = remote probe (shared within the Link2 network)</li> <li><b>rP</b> (4) = remote probe (from supervisor).</li> </ul>                     | diS, Pb6, Pb7, LSP, rP | num  |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Range                                                                             | UM    |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| <b>rSS</b> | Superheat probe.<br><ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | diS, Pb1...Pb5                                                                    | num   |
| <b>rbu</b> | Sets the saturation probe to use as a backup.<br><ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>LSP</b> (1) = backup saturation probe</li> <li><b>rP</b> (2) = remote probe (from supervisor)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | diS, LSP, rP                                                                      | num   |
| <b>EPd</b> | Saturation value display mode.<br><ul style="list-style-type: none"> <li><b>t</b> (0) = temperature</li> <li><b>P</b> (1) = pressure</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | t/P                                                                               | flag  |
| <b>Ert</b> | Type of refrigerant.<br><ul style="list-style-type: none"> <li><b>404</b> (0) = R404A</li> <li><b>r22</b> (1) = R22</li> <li><b>410</b> (2) = R410A</li> <li><b>134</b> (3) = R134a</li> <li><b>744</b> (4) = R744 (CO2)</li> <li><b>507</b> (5) = R507A</li> <li><b>717</b> (6) = R717 (NH3)</li> <li><b>290</b> (7) = reserved</li> <li><b>407</b> (8) = R407A</li> <li><b>448</b> (9) = R448A</li> <li><b>449</b> (10) = R449A</li> <li><b>450</b> (11) = R450</li> <li><b>513</b> (12) = R513A</li> <li><b>PAr_1</b> (13) = customizable 1</li> <li><b>PAr_2</b> (14) = customizable 2</li> <li><b>PAr_3</b> (15) = customizable 3</li> <li><b>PAr_4</b> (16) = customizable 4</li> <li><b>PAr_5</b> (17) = customizable 5</li> <li><b>PAr_6</b> (18) = customizable 6</li> <li><b>455</b> (19) = reserved</li> </ul> <b>Note:</b> Contact Eliwell representative for customizable refrigerants. | 404, r22, 410 134, 744, 507, 717, 290, 407, 448, 449 450, 513, PAr_1...PAr_6, 455 | num   |
| <b>U02</b> | Maximum valve opening percentage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0...100                                                                           | %     |
| <b>U05</b> | Operating time at maximum opening before an alarm signal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...255                                                                           | min   |
| <b>U06</b> | Minimum useful valve opening percentage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0...100                                                                           | %     |
| <b>U07</b> | Maximum useful valve opening percentage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0...100                                                                           | %     |
| <b>U08</b> | Sets the fixed opening percentage for the valve if the pressure sensor is not working ( <b>U22</b> =diS).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...100                                                                           | %     |
| <b>U09</b> | Minimum time needed to evaluate predictive filter parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0...3276.7                                                                      | s     |
| <b>U10</b> | Expired time predictive filter parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...32767                                                                         | s     |
| <b>U11</b> | Minimum superheat temperature speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -999.9...999.9                                                                    | °C/s  |
| <b>U12</b> | Minimum superheat to consider the evaporator empty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0...999.9                                                                         | °C/°F |
| <b>U13</b> | Indicates the updating frequency for values relating to the thermodynamic cycle.<br><ul style="list-style-type: none"> <li>if <b>U13</b> is decreased, updating will be more frequent</li> <li>if <b>U13</b> is increased, updating will be less frequent</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0...3600                                                                          | s     |

| PAR        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Range          | UM    |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------|
| <b>U14</b> | <p>Type of superheat control for the thermodynamic cycle of the refrigerated cabinet.</p> <ul style="list-style-type: none"> <li>if <b>U14</b> is decreased, the refrigerated cabinet superheat temperature tends towards the value of parameter <b>OLt</b> (Minimum superheat threshold), becoming more reactive</li> <li>if <b>U14</b> is increased, the refrigerated cabinet superheat temperature tends to greater regulation stability approaching parameter <b>OLt</b> (Minimum superheat threshold)</li> </ul> <p><b>OPERATING PROCEDURE</b></p> <p>To optimize cabinet performance:</p> <ul style="list-style-type: none"> <li>if the superheat temperature &gt; <b>OLt</b>, decrease <b>U14</b> value</li> <li>if the superheat temperature &lt; <b>OLt</b>, increase <b>U14</b> value</li> </ul>                                                        | 0.0...U15      | °C/°F |
| <b>U15</b> | Maximum superheat pass band                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0...999.9    | °C/°F |
| <b>U16</b> | Default superheat pass band                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0...999.9    | °C/°F |
| <b>U17</b> | Upper threshold multiplier continuous modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0...999.9    | num   |
| <b>U18</b> | Lower threshold multiplier continuous modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0...999.9    | num   |
| <b>U20</b> | Continuous modulation differential gain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.0...999.9    | num   |
| <b>U21</b> | Maximum valve open speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.0...999.9    | %/s   |
| <b>U22</b> | <p>Type of controller behavior in the event that the pressure transducer is not working.</p> <ul style="list-style-type: none"> <li><b>diS</b> (0) = Fixed opening percentage. Refer to <b>U08</b></li> <li><b>En</b> (1) = Backup saturation temperature. Refer to <b>U23</b>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | diS/En         | flag  |
| <b>U23</b> | Saturation temperature backup value in the event that the pressure transducer is not working.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -999.9...999.9 | °C/°F |
| <b>U25</b> | <p>Loads to be disabled in the event of a inoperable compressor.</p> <ul style="list-style-type: none"> <li><b>0</b> = Disabled</li> <li><b>1</b> = Defrost</li> <li><b>2</b> = Lights</li> <li><b>3</b> = Defrost and lights</li> <li><b>4</b> = Anti-sweater heaters</li> <li><b>5</b> = Defrost and anti-sweater heaters</li> <li><b>6</b> = Lights and anti-sweater heaters</li> <li><b>7</b> = Defrost, Lights and anti-sweater heaters</li> <li><b>8</b> = Evaporator fans</li> <li><b>9</b> = Defrost and fans</li> <li><b>10</b> = Lights and fans</li> <li><b>11</b> = Defrost, Lights and fans</li> <li><b>12</b> = Anti-sweater heaters and fans</li> <li><b>13</b> = Defrost, anti-sweater heaters and fans</li> <li><b>14</b> = Lights, anti-sweater heaters and fans</li> <li><b>15</b> = Defrost, lights, anti-sweater heaters and fans</li> </ul> | 0...15         | num   |
| <b>U26</b> | Saturation temperature threshold for detecting the faulty compressor in addition to disabling the loads.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -999.9...999.9 | °C/°F |
| <b>U27</b> | Minimum valve opening percentage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0...100      | %     |
| <b>U51</b> | Superheat filter calculation coefficient.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0...999        | num   |
| <b>U52</b> | Superheat offset integral time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0...999        | s     |
| <b>U53</b> | Pump out time. Valve closure time period.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0...600        | s     |
| <b>U54</b> | Pump in time. Valve opening time period at 100%.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0...600        | s     |
| <b>U55</b> | Pump out/in period. Time interval between the start of two subsequent pump out periods.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0...900        | s*10  |
| <b>U56</b> | If <b>U56</b> ≠ 0, allows a dynamic time recalculation of the gain refresh time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0...10.0     | °C/°F |
| <b>U57</b> | Superheat offset maximum value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.0...10.0     | °C/°F |
| <b>U58</b> | <p>Sets if the controller consider also air temperature.</p> <ul style="list-style-type: none"> <li><b>0</b> = No</li> <li><b>1</b> = Yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0/1            | flag  |
| <b>U60</b> | Minimum superheat filter threshold.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -99.9...0.0    | °C/°F |
| <b>U61</b> | Maximum superheat filter threshold.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.0...99.9     | °C/°F |

| PAR                                                                                                                                                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Range                        | UM    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------|
| U64                                                                                                                                                                     | Minimum superheat percentage - forced mode.                                                                                                                                                                                                                                                                                                                                                                                                                 | 0...100                      | %     |
| U65                                                                                                                                                                     | Activation time of minimum superheat percentage.                                                                                                                                                                                                                                                                                                                                                                                                            | 0...999                      | s     |
| U66                                                                                                                                                                     | Selects the superheat regulation method. <ul style="list-style-type: none"> <li>0 = Regulation for systems with remote group</li> <li>1 = Regulation for plug-in</li> </ul>                                                                                                                                                                                                                                                                                 | 0/1                          | flag  |
| U67                                                                                                                                                                     | Superheat lower threshold.                                                                                                                                                                                                                                                                                                                                                                                                                                  | -99.9...OLt                  | °C/°F |
| U68                                                                                                                                                                     | Time spent under the superheat lower threshold. 0 = threshold disabled.                                                                                                                                                                                                                                                                                                                                                                                     | 0...600                      | s     |
| OLt                                                                                                                                                                     | Minimum superheat threshold.                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.0...999.9                  | °C/°F |
| A_F                                                                                                                                                                     | Select PID automatic or manual mode. <ul style="list-style-type: none"> <li>0 = automatic</li> <li>1 = manual</li> </ul>                                                                                                                                                                                                                                                                                                                                    | 0/1                          | flag  |
| dUt                                                                                                                                                                     | PID duty cycle in manual mode.                                                                                                                                                                                                                                                                                                                                                                                                                              | 0...100                      | %     |
| HOE                                                                                                                                                                     | Enable MOP <ul style="list-style-type: none"> <li>0 = disabled</li> <li>1 = enabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                              | 0/1                          | flag  |
| tAP                                                                                                                                                                     | Minimum time maximum temperature threshold for alarm activation exceeded.                                                                                                                                                                                                                                                                                                                                                                                   | 0...255                      | min   |
| Hot                                                                                                                                                                     | Maximum evaporator temperature threshold.                                                                                                                                                                                                                                                                                                                                                                                                                   | -999.9...999.9               | °C/°F |
| HdP                                                                                                                                                                     | MOP disable duration at startup.                                                                                                                                                                                                                                                                                                                                                                                                                            | 0...999                      | min   |
| HPb                                                                                                                                                                     | MOP proportional band.                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1...999.9                  | K     |
| (*) Parameters visible at level 2 only if E00 = 0 (custom valve).                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |       |
| <b>FPr (UNICARD)</b>                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |       |
| UL                                                                                                                                                                      | Transfer of the programming parameters from the controller to the UNICARD/MFK.                                                                                                                                                                                                                                                                                                                                                                              | /                            | /     |
| dL                                                                                                                                                                      | Transfer of the programming parameters from the UNICARD/MFK to the controller.                                                                                                                                                                                                                                                                                                                                                                              | /                            | /     |
| Fr                                                                                                                                                                      | UNICARD formatting. Deletes all data on the UNICARD.<br><b>Note:</b> the use of parameter <b>Fr</b> results in the loss of all data entered. This operation cannot be reversed.                                                                                                                                                                                                                                                                             | /                            | /     |
| <b>FnC (Functions) - Note :</b> If the device is switched off the function labels will revert to default status (inactive). To change their status, press the "set" key |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |       |
| dEF                                                                                                                                                                     | Manual defrost activation. <ul style="list-style-type: none"> <li>Function active: <b>dEF</b> label and flashing icon</li> <li>Function inactive: <b>dEF</b> label</li> <li>Indication: Defrost icon flashing</li> </ul>                                                                                                                                                                                                                                    | /                            | /     |
| AUX                                                                                                                                                                     | Manual auxiliary output activation. <ul style="list-style-type: none"> <li>Function active: <b>Aon</b> label</li> <li>Function inactive: <b>AoF</b> label</li> <li>Indication: AUX icon steadily lit</li> </ul>                                                                                                                                                                                                                                             | /                            | /     |
| rAP                                                                                                                                                                     | Reset pressure switch alarms                                                                                                                                                                                                                                                                                                                                                                                                                                | /                            | /     |
| Stand-by                                                                                                                                                                | Manual stand-by activation. <ul style="list-style-type: none"> <li>Function active: <b>ON</b> label</li> <li>Function inactive: <b>OFF</b> label</li> <li>Indication: Stand-by LED lit steadily (only <b>KDWPlus</b>)</li> </ul>                                                                                                                                                                                                                            | /                            | /     |
| <b>Oil (Compressor oil heater)</b>                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |       |
| OHP                                                                                                                                                                     | Sets the regulation probe used by the compressor oil heater. <ul style="list-style-type: none"> <li><b>diS</b> (0) = disabled</li> <li><b>Pb1</b> (1) = probe Pb1</li> <li><b>Pb2</b> (2) = probe Pb2</li> <li><b>Pb3</b> (3) = probe Pb3</li> <li><b>Pb4</b> (4) = probe Pb4</li> <li><b>Pb5</b> (5) = probe Pb5</li> <li><b>Pbi</b> (6) = virtual probe</li> <li><b>LP</b> (7) = remote probe</li> <li><b>PFi</b> (8) = filtered virtual probe</li> </ul> | diS, Pb1...Pb5, Pbi, LP, PFi | num   |
| OSP                                                                                                                                                                     | Sets the regulation setpoint used by the compressor oil heater.                                                                                                                                                                                                                                                                                                                                                                                             | OLS...OHS                    | °C/°F |
| OHd                                                                                                                                                                     | Sets the regulation differential used by the compressor oil heater.                                                                                                                                                                                                                                                                                                                                                                                         | 0.1...25.0                   | °C/°F |

| PAR | Description                                                           | Range       | UM    |
|-----|-----------------------------------------------------------------------|-------------|-------|
| OHS | Maximum value that can be set for the compressor oil heater setpoint. | OLS...302   | °C/°F |
| OLS | Minimum value that can be set for the compressor oil heater setpoint. | -58.0...OHS | °C/°F |

**Note:** the controller must be rebooted after changing **CnF** folder parameters.





---

# Modbus MSK 756 functions and resources

---

## Contents

This section includes the following topics:

|                                     |     |
|-------------------------------------|-----|
| Setting parameters via Modbus ..... | 206 |
| Modbus table content .....          | 207 |
| Table of Modbus Parameters .....    | 209 |
| Folder Visibility Table .....       | 307 |
| Table of Modbus Resources .....     | 311 |

## Setting parameters via Modbus

### Introduction

Modbus is a client/server protocol for communication between devices connected in a network. Modbus devices communicate using a client-server technique in which only one device (primary) can send messages. The other devices in the network (secondary) respond, returning the data requested by the primary device or executing the action contained in the message sent. A secondary device is a device connected to a network that processes information and sends the results to the primary device using the Modbus protocol.

The primary device can send messages to individual secondary devices, or to the entire network (broadcast), whilst secondary devices can only respond to messages individually and to the primary device. The Modbus standard used by Eliwell employs the RTU code for data transmission.

### Data format (RTU)

The coding type used defines the structure of messages transmitted on the network and the way in which this information is deciphered. The coding type is usually chosen according to specific parameters (baudrate, parity, stop), plus certain devices only support specific coding types. Use the same coding type for all devices connected to a Modbus network.

The protocol uses the RTU binary method with the serial frame configured as follows:

- 8 bits for data
- parity bits NONE (configurable)

Parameters can be changed via:

- Device terminal
- UNICARD / DMI
- Send data via Modbus protocol directly to an individual device or in a broadcast using the address 0 (broadcast)

### Modbus commands available and data areas

The following commands are implemented:

| Modbus command       | Description                                                                                                                                                                                                |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>03</b> (hex 0x03) | Read resources                                                                                                                                                                                             |
| <b>16</b> (hex 0x10) | Write resources                                                                                                                                                                                            |
| <b>43</b> (hex 0x2B) | Read device ID.<br>The following 3 fields can be read: <ul style="list-style-type: none"> <li>• 0 = Manufacturer ID</li> <li>• 1 = Model ID</li> <li>• 2 = Family ID (MSK 756) / device version</li> </ul> |

**Note:** Maximum length of transmitted/received messages equal to 50 bytes.

### Address configuration

The **TTL** serial port may be used to configure the device, parameters, statuses, variables with Modbus using the Modbus protocol.

The address of a device within a Modbus message is set via parameter **Adr**.

The address **0** is used for broadcast messages that all secondary devices recognize. Secondary devices do not respond to a broadcast type request.

The device configuration parameters are as follows:

| Parameter  | Description                                                                                                                                                                                    |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Adr</b> | Modbus protocol controller address                                                                                                                                                             |
| <b>bAU</b> | Baudrate selection                                                                                                                                                                             |
| <b>Pty</b> | Sets the Modbus protocol parity BIT. <ul style="list-style-type: none"> <li>• <b>n</b> = parity bit NONE</li> <li>• <b>E</b> = parity bit EVEN</li> <li>• <b>o</b> = parity bit ODD</li> </ul> |

**Note:** Switch the controller off and on again after changing **Pty**.

## Parameter values and visibility

Below are several notes relating to the value and visibility of the parameters.

### Notes:

- Unless otherwise indicated, the parameter should be considered as visible and able to be changed unless the user applies custom settings via the serial port.
- If the visibility of the folder is changed all the parameters in that folder will assume the new setting.

## Modbus table content

### Introduction

The tables below contain the information required to access the resources properly.

There are 3 tables:

- **Modbus Parameters Table:** contains all the device configuration parameters including visibility
- **Folder Visibility Table:** contains the visibility of the folders containing the parameters
- **Modbus Resource Table:** contains all status (I/O) and alarm resources available in the volatile memory of the device.

### Description of the columns

#### FOLDER

Indicates the name of the folder containing the parameter in question.

#### LABEL

Indicates the name with which the parameter appears in the menu.

#### DESCRIPTION

Description of the parameter's meaning.

#### VAL. PAR. ADDRESS

Represents the Modbus register address which contains the read or write value of the resource in the device.

#### VAL. FILTER

Represents the position of the most significant data bit inside the register. This information is always provided when the register contains more than one piece of information and it is necessary to distinguish which bits actually represent the data (the useful size of the data, indicated in the DATA SIZE column, should also be taken into account).

#### VIS. PAR. ADDRESS

Contains the Modbus register address which contains the visibility value of the resource to read or write in the device.

#### VIS. FILTER

Mask representing the position of the data inside the register (it has BITS set to 1 in correspondence with the register BITS effectively associated with the resource). It assumes values from 0 to 65535.

**Note:** in binary representation the least significant is furthest to the right.

Visibility:

- Value **3** = parameter or folder always visible
- Value **2** = manufacturer level; these parameters and folders are only visible when the manufacturer password (**PS2**) is entered (with this password you will be able to see all parameters declared as always visible; level **1** parameters will not be visible)
- Value **1** = installer level; these parameters and folders are only visible when the installer password (**PS1**) is entered (with this password you will be able to see all parameters declared as always visible; level **2** parameters will not be visible)
- Value **0** = parameter or folder NOT visible

**Note:** the size of the piece of visibility data is 2 BIT.

**R/W**

Indicates the option of reading or writing the resource:

- R = the resource is read-only
- W = the resource is write-only
- R/W = the resource can be both read and written

**DATA SIZE**

Indicates the size of the piece of data (in bit):

- WORD = 16 bit
- Byte = 8 bit
- "n" bit = 0...15 bit based on the value of "n"

**CPL**

When the field indicates **Y**, the value read by the register needs to be converted because the value represents a number with a sign. In the other cases the value is always positive or null.

To convert it, proceed as follows:

| If the register value falls between... | Then the result is...                                               |
|----------------------------------------|---------------------------------------------------------------------|
| 0 and 32767                            | the same value (zero and positive values).                          |
| 32768 and 65535                        | the register value, from which to subtract 65536 (negative values). |

**RANGE**

Describes the interval of values that can be assigned to the parameter. This range can be correlated to the value of other parameters.

**MU**

Unit of measure for the values.

## Table of Modbus Parameters

| Folders | Label | Description                                               | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range        | MU    |
|---------|-------|-----------------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|--------------|-------|
| CP      | rE    | Regulation type                                           | 32892             | 0           | 38144             | 3           | RW  | Word      |     | 0...6        | num   |
| CP      | rP1   | Thermostat regulation probe 1                             | 32893             | 0           | 38144             | 12          | RW  | Word      |     | 0...8        | num   |
| CP      | rP2   | Thermostat regulation probe 2                             | 32894             | 0           | 38144             | 48          | RW  | Word      |     | 0...9        | num   |
| CP      | SP1   | Regulation setpoint 1                                     | 32895             | 0           | 38144             | 192         | RW  | Word      | Y   | LS1...HS1    | °C/°F |
| CP      | dF1   | Setpoint differential 1                                   | 32896             | 0           | 38144             | 768         | RW  | Word      | Y   | -58.0...302  | °C/°F |
| CP      | SP2   | Regulation setpoint 2                                     | 32897             | 0           | 38144             | 3072        | RW  | Word      | Y   | LS2...HS2    | °C/°F |
| CP      | dF2   | Setpoint differential 2                                   | 32898             | 0           | 38144             | 12288       | RW  | Word      | Y   | -58.0...302  | °C/°F |
| CP      | Stt   | Differential management mode                              | 32901             | 0           | 38144             | 49152       | RW  | Word      |     | 0...1        | flag  |
| CP      | HS1   | Maximum value that can be set for Setpoint 1              | 32904             | 0           | 38145             | 3           | RW  | Word      | Y   | LS1...HdL    | °C/°F |
| CP      | LS1   | Minimum value that can be set for Setpoint 1              | 32905             | 0           | 38145             | 12          | RW  | Word      | Y   | LdL...HS1    | °C/°F |
| CP      | HS2   | Maximum value that can be set for Setpoint 2              | 32906             | 0           | 38145             | 48          | RW  | Word      | Y   | LS2...HdL    | °C/°F |
| CP      | LS2   | Minimum value that can be set for Setpoint 2              | 32907             | 0           | 38145             | 192         | RW  | Word      | Y   | LdL...HS2    | °C/°F |
| CP      | HC1   | Setpoint 1 operating mode (Heating/Cooling)               | 32902             | 0           | 38145             | 768         | RW  | Word      |     | 0...1        | flag  |
| CP      | HC2   | Setpoint 2 operating mode (Heating/Cooling)               | 32903             | 0           | 38145             | 3072        | RW  | Word      |     | 0...1        | flag  |
| CP      | Cit   | Minimum compressor output activation time                 | 32912             | 0           | 38145             | 49152       | RW  | Word      |     | 0...250      | min   |
| CP      | CAt   | Maximum compressor output activation time                 | 32913             | 0           | 38146             | 3           | RW  | Word      |     | 0...250      | min   |
| CP      | Ont   | Compressor output ON time if regulation probe is faulty   | 32918             | 0           | 38146             | 12          | RW  | Word      |     | 0...250      | min   |
| CP      | OFt   | Compressor output OFF time if regulation probe is faulty  | 32919             | 0           | 38146             | 48          | RW  | Word      |     | 0...250      | min   |
| CP      | dOn   | Compressor output activation delay from call              | 32914             | 0           | 38146             | 192         | RW  | Word      |     | 0...250      | s     |
| CP      | dOF   | Compressor output activation delay from switch-off        | 32915             | 0           | 38146             | 768         | RW  | Word      |     | 0...250      | min   |
| CP      | dbi   | Delay between two consecutive compressor output power-ons | 32916             | 0           | 38146             | 3072        | RW  | Word      |     | 0...250      | min   |
| CP      | OdO   | Output activation delay at startup                        | 32917             | 0           | 38146             | 12288       | RW  | Word      |     | 0...250      | min   |
| CP      | CFP   | Condenser pre-ventilation time in Heat/Cool               | 33001             | 0           | 38147             | 12          | RW  | Word      |     | 0...255      | s     |
| CP      | CFd   | Condenser fan cut-out during defrosting.                  | 33002             | 0           | 38147             | 48          | RW  | Word      |     | 0...1        | flag  |
| CP      | OF1   | Remote offset                                             | 32923             | 0           | 38147             | 192         | RW  | Word      | Y   | -50.0...50.0 | °C/°F |
| CP      | Pot   | Pump down time                                            | 33029             | 0           | 38178             | 192         | RW  | Word      |     | 0...250      | s     |

| Folders | Label | Description                                                     | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range       | MU    |
|---------|-------|-----------------------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|-------------|-------|
| CP      | SS1   | Compressor softstart: advance hotgas valve opening              | 33030             | 0           | 38178             | 768         | RW  | Word      |     | 0...250     | s     |
| CP      | SS2   | Compressor softstart: delay hotgas valve closing                | 33031             | 0           | 38178             | 3072        | RW  | Word      |     | 0...250     | s     |
| dEF     | dP1   | Select defrost probe 1                                          | 32924             | 0           | 38147             | 768         | RW  | Word      |     | 0...8       | num   |
| dEF     | dP2   | Defrost probe 2 selection                                       | 32925             | 0           | 38147             | 3072        | RW  | Word      |     | 0...8       | num   |
| dEF     | dtY   | Type of defrost                                                 | 32928             | 0           | 38147             | 12288       | RW  | Word      |     | 0...4       | num   |
| dEF     | dFt   | Dual evaporator defrost activation mode                         | 32926             | 0           | 38147             | 49152       | RW  | Word      |     | 0...2       | num   |
| dEF     | dit   | Interval between defrosts                                       | 32929             | 0           | 38148             | 3           | RW  | Word      |     | 0...250     | hours |
| dEF     | dt1   | Unit of measure for defrost intervals                           | 32932             | 0           | 38148             | 12          | RW  | Word      |     | 0...2       | num   |
| dEF     | dt2   | Unit of measure for defrost duration                            | 32933             | 0           | 38148             | 48          | RW  | Word      |     | 0...2       | num   |
| dEF     | dCt   | Defrost interval count mode                                     | 32927             | 0           | 38148             | 192         | RW  | Word      |     | 0...5       | num   |
| dEF     | dOH   | Defrost cycle activation delay from the call                    | 32934             | 0           | 38148             | 768         | RW  | Word      |     | 0...250     | min   |
| dEF     | dE1   | Evaporator 1 defrost maximum duration                           | 32930             | 0           | 38148             | 3072        | RW  | Word      |     | 1...250     | min   |
| dEF     | dE2   | Evaporator 2 defrost maximum duration                           | 32931             | 0           | 38148             | 12288       | RW  | Word      |     | 1...250     | min   |
| dEF     | dS1   | Evaporator 1 defrost end temperature                            | 32936             | 0           | 38148             | 49152       | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | dS2   | Evaporator 2 defrost end temperature                            | 32937             | 0           | 38149             | 3           | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | dSS   | Temperature threshold for starting defrost                      | 32935             | 0           | 38149             | 12          | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | dPO   | Defrost activation request at power-on                          | 32938             | 0           | 38149             | 48          | RW  | Word      |     | 0...1       | flag  |
| dEF     | tCd   | Compressor output activation/deactivation time before a defrost | 32939             | 0           | 38149             | 192         | RW  | Word      | Y   | -60...60    | min   |
| dEF     | ndE   | minimum defrost duration time                                   | 32940             | 0           | 38149             | 768         | RW  | Word      |     | 0...250     | min   |
| dEF     | PdC   | Hot gas extraction time at the end of the defrost               | 32941             | 0           | 38149             | 3072        | RW  | Word      |     | 0...250     | min   |
| dEF     | tPd   | Pump down time before defrost start                             | 32943             | 0           | 38149             | 12288       | RW  | Word      |     | 0...255     | min   |
| dEF     | dPH   | Regular defrost start hour                                      | 32882             | 0           | 38149             | 49152       | RW  | Word      |     | 0...24      | hours |
| dEF     | dPn   | Regular defrost start minutes                                   | 32883             | 0           | 38150             | 3           | RW  | Word      |     | 0...59      | min   |
| dEF     | dPd   | Regular defrost interval duration                               | 32884             | 0           | 38150             | 12          | RW  | Word      |     | 1...7       | day   |
| dEF     | Fd1   | 1st weekend/holiday day                                         | 32831             | 0           | 38150             | 48          | RW  | Word      |     | 0...7       | num   |
| dEF     | Fd2   | 2nd weekend/holiday day                                         | 32832             | 0           | 38150             | 192         | RW  | Word      |     | 0...7       | num   |
| dEF     | Edt   | Timeout and defrost end temperature specific to each event      | 32833             | 0           | 38150             | 768         | RW  | Word      |     | 0...1       | num   |
| dEF     | Fdn   | Weekday defrost number                                          | 32781             | 0           | 38184             | 3           | RW  | Word      |     | 0...250     | num   |
| dEF     | FFn   | Weekend/holiday defrost number                                  | 32782             | 0           | 38184             | 12          | RW  | Word      |     | 0...250     | num   |

| Folders | Label | Description                                 | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range       | MU    |
|---------|-------|---------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|-------------|-------|
| dEF     | PrH   | Basin heater pre-activation time            | 33038             | 0           | 38179             | 3072        | RW  | Word      |     | 0...255     | min   |
| dEF     | d1H   | Weekday defrost no. 1 start hour            | 32834             | 0           | 38150             | 3072        | RW  | Word      |     | 0...24      | hours |
| dEF     | d1n   | Weekday defrost no. 1 start minute          | 32835             | 0           | 38150             | 12288       | RW  | Word      |     | 0...59      | min   |
| dEF     | d1t   | 1st weekday defrost duration                | 32836             | 0           | 38150             | 49152       | RW  | Word      |     | 0...250     | min   |
| dEF     | d1S   | 1st weekday defrost end temperature         | 32837             | 0           | 38151             | 3           | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | d2H   | Weekday defrost no. 2 start hour            | 32838             | 0           | 38151             | 12          | RW  | Word      |     | d1H...24    | hours |
| dEF     | d2n   | Weekday defrost no. 2 start minutes         | 32839             | 0           | 38151             | 48          | RW  | Word      |     | 0...59      | min   |
| dEF     | d2t   | 2nd weekday defrost duration                | 32840             | 0           | 38151             | 192         | RW  | Word      |     | 0...250     | min   |
| dEF     | d2S   | 2nd weekday defrost end temperature         | 32841             | 0           | 38151             | 768         | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | d3H   | Weekday defrost no. 3 start hour            | 32842             | 0           | 38151             | 3072        | RW  | Word      |     | d2H...24    | hours |
| dEF     | d3n   | Weekday defrost no. 3 start minutes         | 32843             | 0           | 38151             | 12288       | RW  | Word      |     | 0...59      | min   |
| dEF     | d3t   | 3rd weekday defrost duration                | 32844             | 0           | 38151             | 49152       | RW  | Word      |     | 0...250     | min   |
| dEF     | d3S   | 3rd weekday defrost end temperature         | 32845             | 0           | 38152             | 3           | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | d4H   | Weekday defrost no. 4 start hour            | 32846             | 0           | 38152             | 12          | RW  | Word      |     | d3H...24    | hours |
| dEF     | d4n   | Weekday defrost no. 4 start minutes         | 32847             | 0           | 38152             | 48          | RW  | Word      |     | 0...59      | min   |
| dEF     | d4t   | 4th weekday defrost duration                | 32848             | 0           | 38152             | 192         | RW  | Word      |     | 0...250     | min   |
| dEF     | d4S   | 4th weekday defrost end temperature         | 32849             | 0           | 38152             | 768         | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | d5H   | Weekday defrost no. 5 start hour            | 32850             | 0           | 38152             | 3072        | RW  | Word      |     | d4H...24    | hours |
| dEF     | d5n   | Weekday defrost no. 5 start minutes         | 32851             | 0           | 38152             | 12288       | RW  | Word      |     | 0...59      | min   |
| dEF     | d5t   | 5th weekday defrost duration                | 32852             | 0           | 38152             | 49152       | RW  | Word      |     | 0...250     | min   |
| dEF     | d5S   | 5th weekday defrost end temperature         | 32853             | 0           | 38153             | 3           | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | d6H   | Weekday defrost no. 6 start hour            | 32854             | 0           | 38153             | 12          | RW  | Word      |     | d5H...24    | hours |
| dEF     | d6n   | Weekday defrost no. 6 start minutes         | 32855             | 0           | 38153             | 48          | RW  | Word      |     | 0...59      | min   |
| dEF     | d6t   | 6th weekday defrost duration                | 32856             | 0           | 38153             | 192         | RW  | Word      |     | 0...250     | min   |
| dEF     | d6S   | 6th weekday defrost end temperature         | 32857             | 0           | 38153             | 768         | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | F1H   | Weekend/holiday defrost no. 1 start hour    | 32858             | 0           | 38153             | 3072        | RW  | Word      |     | 0...24      | hours |
| dEF     | F1n   | Weekend/holiday defrost no. 1 start minute  | 32859             | 0           | 38153             | 12288       | RW  | Word      |     | 0...59      | min   |
| dEF     | F1t   | 1st weekend/holiday defrost duration        | 32860             | 0           | 38153             | 49152       | RW  | Word      |     | 0...250     | min   |
| dEF     | F1S   | 1st weekend/holiday defrost end temperature | 32861             | 0           | 38154             | 3           | RW  | Word      | Y   | -58.0...302 | °C/°F |

| Folders | Label | Description                                      | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range       | MU    |
|---------|-------|--------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|-------------|-------|
| dEF     | F2H   | Weekend/holiday defrost no. 2 start hour         | 32862             | 0           | 38154             | 12          | RW  | Word      |     | F1H...24    | hours |
| dEF     | F2n   | Weekend/holiday defrost no. 2 start minutes      | 32863             | 0           | 38154             | 48          | RW  | Word      |     | 0...59      | min   |
| dEF     | F2t   | 2nd weekend/holiday defrost duration             | 32864             | 0           | 38154             | 192         | RW  | Word      |     | 0...250     | min   |
| dEF     | F2S   | 2nd weekend/holiday defrost end temperature      | 32865             | 0           | 38154             | 768         | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | F3H   | Weekend/holiday defrost no. 3 start hour         | 32866             | 0           | 38154             | 3072        | RW  | Word      |     | F2H...24    | hours |
| dEF     | F3n   | Weekend/holiday defrost no. 3 start minutes      | 32867             | 0           | 38154             | 12288       | RW  | Word      |     | 0...59      | min   |
| dEF     | F3t   | 3rd weekend/holiday defrost duration             | 32868             | 0           | 38154             | 49152       | RW  | Word      |     | 0...250     | min   |
| dEF     | F3S   | 3rd weekend/holiday defrost end temperature      | 32869             | 0           | 38155             | 3           | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | F4H   | Weekend/holiday defrost no. 4 start hour         | 32870             | 0           | 38155             | 12          | RW  | Word      |     | F3H...24    | hours |
| dEF     | F4n   | Weekend/holiday defrost no. 4 start minutes      | 32871             | 0           | 38155             | 48          | RW  | Word      |     | 0...59      | min   |
| dEF     | F4t   | 4th weekend/holiday defrost duration             | 32872             | 0           | 38155             | 192         | RW  | Word      |     | 0...250     | min   |
| dEF     | F4S   | 4th weekend/holiday defrost end temperature      | 32873             | 0           | 38155             | 768         | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | F5H   | Weekend/holiday defrost no. 5 start hour         | 32874             | 0           | 38155             | 3072        | RW  | Word      |     | F4H...24    | hours |
| dEF     | F5n   | Weekend/holiday defrost no. 5 start minutes      | 32875             | 0           | 38155             | 12288       | RW  | Word      |     | 0...59      | min   |
| dEF     | F5t   | 5th weekend/holiday defrost duration             | 32876             | 0           | 38155             | 49152       | RW  | Word      |     | 0...250     | min   |
| dEF     | F5S   | 5th weekend/holiday defrost end temperature      | 32877             | 0           | 38156             | 3           | RW  | Word      | Y   | -58.0...302 | °C/°F |
| dEF     | F6H   | Weekend/holiday defrost no. 6 start hour         | 32878             | 0           | 38156             | 12          | RW  | Word      |     | F5H...24    | hours |
| dEF     | F6n   | Weekend/holiday defrost no. 6 start minutes      | 32879             | 0           | 38156             | 48          | RW  | Word      |     | 0...59      | min   |
| dEF     | F6t   | 6th weekend/holiday defrost duration             | 32880             | 0           | 38156             | 192         | RW  | Word      |     | 0...250     | min   |
| dEF     | F6S   | 6th weekend/holiday defrost end temperature      | 32881             | 0           | 38156             | 768         | RW  | Word      | Y   | -58.0...302 | °C/°F |
| Fan     | FP1   | Selection of evaporator fan probe in normal mode | 32944             | 0           | 38156             | 3072        | RW  | Word      |     | 0...8       | num   |
| Fan     | FP2   | Selection of evaporator fan probe in defrost     | 32945             | 0           | 38156             | 12288       | RW  | Word      |     | 0...8       | num   |
| Fan     | FPt   | FSt parameter mode (absolute or relative)        | 32946             | 0           | 38156             | 49152       | RW  | Word      |     | 0...1       | flag  |
| Fan     | FSt   | Evaporator fan disabling temperature             | 32947             | 0           | 38157             | 3           | RW  | Word      | Y   | -58.0...302 | °C/°F |
| Fan     | FAd   | Evaporator fan trigger differential              | 32948             | 0           | 38157             | 12          | RW  | Word      |     | 0.1...25.0  | °C/°F |



| Folders | Label | Description                                                | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range       | MU    |
|---------|-------|------------------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|-------------|-------|
| Fan     | Fdt   | Evaporator fan activation delay time after a defrost cycle | 32949             | 0           | 38157             | 48          | RW  | Word      |     | 0...250     | min   |
| Fan     | dt    | Dripping time                                              | 32954             | 0           | 38157             | 192         | RW  | Word      |     | 0...250     | min   |
| Fan     | dFd   | Evaporator fan cut-out during defrost                      | 32952             | 0           | 38157             | 768         | RW  | Word      |     | 0...1       | flag  |
| Fan     | FCO   | Evaporator fan status with compressor output Off           | 32951             | 0           | 38157             | 3072        | RW  | Word      |     | 0...4       | num   |
| Fan     | FOd   | Evaporator fan status with door open                       | 32953             | 0           | 38157             | 12288       | RW  | Word      |     | 0...1       | flag  |
| Fan     | FdC   | Evaporator fan shutoff delay after compressor deactivation | 32950             | 0           | 38157             | 49152       | RW  | Word      |     | 0...250     | min   |
| Fan     | FOn   | Evaporator fan On time in cyclical regulator mode          | 32955             | 0           | 38158             | 3           | RW  | Word      |     | 0...250     | min   |
| Fan     | FOF   | Evaporator fan Off time in cyclical regulator mode         | 32956             | 0           | 38158             | 12          | RW  | Word      |     | 0...250     | min   |
| Fan     | Fnn   | Evaporator fan ON time in night mode (duty cycle)          | 32957             | 0           | 38158             | 48          | RW  | Word      |     | 0...250     | min   |
| Fan     | FnF   | Evaporator fan OFF time in night mode (duty cycle)         | 32958             | 0           | 38158             | 192         | RW  | Word      |     | 0...250     | min   |
| FE      | FE1   | Variable speed fan probe selection                         | 33057             | 0           | 38182             | 48          | RW  | Word      |     | 0...12      | num   |
| FE      | FEt   | Setpoint mode                                              | 33058             | 0           | 38182             | 192         | RW  | Word      |     | 0...1       | flag  |
| FE      | FES   | Setpoint                                                   | 33059             | 0           | 38182             | 768         | RW  | Word      | Y   | -58.0...302 | °C/°F |
| FE      | FEd   | Band                                                       | 33060             | 0           | 38182             | 3072        | RW  | Word      |     | 0.1...50.0  | °C/°F |
| FE      | FEu   | Cut-off band                                               | 33061             | 0           | 38182             | 12288       | RW  | Word      |     | 0.0...25.0  | °C/°F |
| FE      | FEC   | Cut-off differential                                       | 33062             | 0           | 38182             | 49152       | RW  | Word      |     | 0.1...25.0  | °C/°F |
| FE      | FEr   | Fan shutoff delay after compressor deactivation            | 33063             | 0           | 38183             | 3           | RW  | Word      |     | 0...250     | min   |
| FE      | FE2   | Minimum day percentage                                     | 33064             | 0           | 38183             | 12          | RW  | Word      |     | 0...100     | %     |
| FE      | FE3   | Maximum day percentage with compressor on                  | 33065             | 0           | 38183             | 48          | RW  | Word      |     | 0...100     | %     |
| FE      | FE4   | Maximum day percentage with compressor off                 | 33066             | 0           | 38183             | 192         | RW  | Word      |     | 0...100     | %     |
| FE      | FE5   | Minimum night percentage                                   | 33067             | 0           | 38183             | 768         | RW  | Word      |     | 0...100     | %     |
| FE      | FE6   | Maximum night percentage with compressor on                | 33068             | 0           | 38183             | 3072        | RW  | Word      |     | 0...100     | %     |
| FE      | FE7   | Maximum night percentage with compressor off               | 33069             | 0           | 38183             | 12288       | RW  | Word      |     | 0...100     | %     |
| FE      | FE8   | Percentage during defrost                                  | 33070             | 0           | 38183             | 49152       | RW  | Word      |     | 0...100     | %     |
| FE      | FE9   | Percentage in the event of probe error                     | 33071             | 0           | 38195             | 12          | RW  | Word      |     | 0...100     | %     |
| FE      | FEA   | Maximum pick-up speed                                      | 33072             | 0           | 38195             | 48          | RW  | Word      |     | 0...100     | %     |
| FE      | FEb   | Fan pick-up time                                           | 33073             | 0           | 38195             | 192         | RW  | Word      |     | 0...250     | s     |
| FE      | FEP   | Fan forcing period at pick-up speed                        | 33074             | 0           | 38195             | 768         | RW  | Word      |     | 0...250     | min   |

| Folders | Label | Description                                                              | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range       | MU     |
|---------|-------|--------------------------------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|-------------|--------|
| AL      | rA1   | Temperature alarm probe 1 selection                                      | 32972             | 0           | 38158             | 768         | RW  | Word      |     | 0...7       | num    |
| AL      | rA2   | Temperature alarm probe 2 selection                                      | 32973             | 0           | 38158             | 3072        | RW  | Word      |     | 0...7       | num    |
| AL      | Att   | Alarm mode (absolute or relative)                                        | 32974             | 0           | 38158             | 12288       | RW  | Word      |     | 0...1       | flag   |
| AL      | AFd   | Alarm activation differential                                            | 32975             | 0           | 38158             | 49152       | RW  | Word      |     | 0.1...25.0  | °C/°F  |
| AL      | HA1   | Maximum alarm 1 threshold                                                | 32976             | 0           | 38159             | 3           | RW  | Word      | Y   | LA1...302   | °C/°F  |
| AL      | LA1   | Minimum alarm 1 threshold                                                | 32977             | 0           | 38159             | 12          | RW  | Word      | Y   | -58.0...HA1 | °C/°F  |
| AL      | HA2   | Maximum alarm 2 threshold                                                | 32978             | 0           | 38159             | 48          | RW  | Word      | Y   | LA2...302   | °C/°F  |
| AL      | LA2   | Minimum alarm 2 threshold                                                | 32979             | 0           | 38159             | 192         | RW  | Word      | Y   | -58.0...HA2 | °C/°F  |
| AL      | PAO   | Temperature alarm exclusion time from power-on                           | 32980             | 0           | 38159             | 768         | RW  | Word      |     | 0...10      | hours  |
| AL      | dAO   | Exclusion time for temperature alarms after a defrost cycle              | 32982             | 0           | 38159             | 3072        | RW  | Word      |     | 0...250     | min    |
| AL      | OAO   | High and low temperature alarms exclusion time after closing the door    | 32981             | 0           | 38159             | 12288       | RW  | Word      |     | 0...10      | hours  |
| AL      | tdO   | Door open alarm exclusion time                                           | 33026             | 0           | 38159             | 49152       | RW  | Word      |     | 0...250     | min    |
| AL      | tA1   | Probe 1 High/Minimum Alarm Delay                                         | 32983             | 0           | 38160             | 3           | RW  | Word      |     | 0...250     | min    |
| AL      | tA2   | Probe 2 High/Minimum Alarm Delay                                         | 32984             | 0           | 38160             | 12          | RW  | Word      |     | 0...250     | min    |
| AL      | dAt   | Defrost ended due to timeout alarm signaling                             | 32942             | 0           | 38160             | 48          | RW  | Word      |     | 0...1       | flag   |
| AL      | EAL   | Regulators inhibited by external alarm                                   | 32986             | 0           | 38160             | 192         | RW  | Word      |     | 0...2       | num    |
| AL      | rA3   | Input used by the two threshold/LKD alarm regulator                      | 33045             | 0           | 38180             | 12288       | RW  | Word      |     | 0...8       | num    |
| AL      | ALL   | Low alarm threshold (warning)                                            | 33046             | 0           | 38180             | 49152       | RW  | Word      |     | 0.0...ALH   | num    |
| AL      | ALH   | High alarm threshold (alarm)                                             | 33047             | 0           | 38181             | 3           | RW  | Word      |     | ALL...100   | num    |
| AL      | dAL   | Alarm leak differential                                                  | 33048             | 0           | 38181             | 12          | RW  | Word      |     | 0.1...100   | °C/°F  |
| AL      | AL1   | Time probe remains above the low threshold due to leak alarm activation  | 33049             | 0           | 38181             | 48          | RW  | Word      |     | 0...250     | min    |
| AL      | AL2   | Time probe remains above the high threshold due to leak alarm activation | 33056             | 0           | 38182             | 12          | RW  | Word      |     | 0...250     | min    |
| AL      | tP    | Enables alarm acknowledgment with any key                                | 33027             | 0           | 38160             | 768         | RW  | Word      |     | 0...1       | flag   |
| AL      | Art   | Regular watchdog alarm activation period                                 | 32971             | 0           | 38160             | 3072        | RW  | Word      |     | 0...250     | min*10 |
| Lit     | dSd   | Enable light relay from door switch                                      | 32968             | 0           | 38160             | 12288       | RW  | Word      |     | 0...1       | flag   |
| Lit     | dLt   | Light relay off delay from door closure                                  | 32969             | 0           | 38160             | 49152       | RW  | Word      |     | 0...250     | min    |

| Folders | Label | Description                                                               | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range       | MU     |
|---------|-------|---------------------------------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|-------------|--------|
| Lit     | OFL   | Enable cold room lights off via key during the delay set in parameter dLt | 32970             | 0           | 38161             | 3           | RW  | Word      |     | 0...1       | flag   |
| Lit     | dOd   | Enable utility shutoff upon door switch activation                        | 32985             | 0           | 38161             | 12          | RW  | Word      |     | 0...3       | num    |
| Lit     | dOA   | Behavior forced by digital input                                          | 32987             | 0           | 38161             | 48          | RW  | Word      |     | 0...5       | num    |
| Lit     | PEA   | Enable forced behavior from door switch and/or external alarm.            | 32988             | 0           | 38161             | 192         | RW  | Word      |     | 0...3       | num    |
| Lit     | dCO   | Compressor activation delay from acknowledgment                           | 32989             | 0           | 38161             | 768         | RW  | Word      |     | 0...250     | min    |
| Lit     | dFO   | Fan enabling delay from acknowledgment                                    | 32990             | 0           | 38161             | 3072        | RW  | Word      |     | 0...250     | min    |
| Lit     | ASb   | Instrument off active light/auxiliary digital input or key                | 33016             | 0           | 38161             | 12288       | RW  | Word      |     | 0...1       | flag   |
| Lin     | L00   | Shared probe                                                              | 32768             | 0           | 38161             | 49152       | RW  | Word      |     | 0...7       | num    |
| Lin     | L01   | Distributed viewing (refers to secondary)                                 | 32769             | 0           | 38162             | 3           | RW  | Word      |     | 0...2       | num    |
| Lin     | L02   | Setpoint synchronization                                                  | 32770             | 0           | 38162             | 12          | RW  | Word      |     | 0...1       | flag   |
| Lin     | L03   | Defrost synchronization                                                   | 32771             | 0           | 38162             | 48          | RW  | Word      |     | 0...2       | num    |
| Lin     | L04   | Inhibit resources at the end of defrost                                   | 32772             | 0           | 38162             | 192         | RW  | Word      |     | 0...1       | flag   |
| Lin     | L05   | Stand-by synchronization                                                  | 32773             | 0           | 38162             | 768         | RW  | Word      |     | 0...1       | flag   |
| Lin     | L06   | Lights synchronization                                                    | 32774             | 0           | 38162             | 3072        | RW  | Word      |     | 0...1       | flag   |
| Lin     | L07   | Reduced set synchronization                                               | 32775             | 0           | 38162             | 12288       | RW  | Word      |     | 0...1       | flag   |
| Lin     | L08   | AUX synchronization                                                       | 32776             | 0           | 38162             | 49152       | RW  | Word      |     | 0...1       | flag   |
| Lin     | L09   | Shared saturation probe                                                   | 32777             | 0           | 38163             | 3           | RW  | Word      |     | 0...1       | flag   |
| Lin     | L10   | Resource unlocking timeout during synchronized defrosts                   | 33028             | 0           | 38163             | 12          | RW  | Word      |     | 0...250     | min    |
| Lin     | L11   | Number of devices connected in Link2                                      | 32778             | 0           | 38180             | 48          | RW  | Word      |     | 0...8       | num    |
| Lin     | L12   | Alarm relay sharing in Link2                                              | 32779             | 0           | 38180             | 192         | RW  | Word      |     | 0...2       | num    |
| Lin     | L13   | Link2 serial frame configuration                                          | 33039             | 0           | 38179             | 12288       | RW  | Word      |     | 0...1       | flag   |
| Lin     | L14   | Force cool mode                                                           | 33055             | 0           | 38182             | 3           | RW  | Word      |     | 0...1       | flag   |
| Lin     | L15   | Shared buzzer and alarm silenced via Link2                                | 33035             | 0           | 38184             | 48          | RW  | Word      |     | 0...2       | num    |
| dEC     | dcS   | Deep cooling setpoint                                                     | 32962             | 0           | 38163             | 768         | RW  | Word      | Y   | -58.0...302 | °C/°F  |
| dEC     | tdC   | Deep cooling duration                                                     | 32963             | 0           | 38163             | 3072        | RW  | Word      |     | 0...250     | min    |
| dEC     | dCC   | Defrost delay after deep cooling                                          | 32964             | 0           | 38163             | 12288       | RW  | Word      |     | 0...250     | min    |
| EnS     | ESt   | Type of action for the Energy Saving function                             | 32891             | 0           | 38163             | 49152       | RW  | Word      |     | 0...8       | num    |
| EnS     | ESF   | Night mode activation (Energy Saving)                                     | 32959             | 0           | 38164             | 3           | RW  | Word      |     | 0...1       | flag   |
| EnS     | Cdt   | Door closing time                                                         | 32960             | 0           | 38164             | 12          | RW  | Word      |     | 0...255     | min*10 |

| Folders | Label | Description                                          | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range        | MU    |
|---------|-------|------------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|--------------|-------|
| EnS     | ESo   | Low consumption mode disabling timeout (door switch) | 32961             | 0           | 38164             | 48          | RW  | Word      |     | 0...10       | num   |
| EnS     | OS1   | Offset on setpoint 1                                 | 32908             | 0           | 38164             | 192         | RW  | Word      | Y   | -50.0...50.0 | °C/°F |
| EnS     | OS2   | Offset on setpoint 2                                 | 32909             | 0           | 38164             | 768         | RW  | Word      | Y   | -50.0...50.0 | °C/°F |
| EnS     | Od1   | Refrigerated cabinets energy saving offset 1         | 32910             | 0           | 38164             | 3072        | RW  | Word      | Y   | -50.0...50.0 | °C/°F |
| EnS     | Od2   | Refrigerated cabinets energy saving offset 2         | 32911             | 0           | 38164             | 12288       | RW  | Word      | Y   | -50.0...50.0 | °C/°F |
| EnS     | dn1   | Differential during energy saving mode 1             | 32899             | 0           | 38164             | 49152       | RW  | Word      | Y   | -58.0...302  | °C/°F |
| EnS     | dn2   | Differential during energy saving mode 2             | 32900             | 0           | 38165             | 3           | RW  | Word      | Y   | -58.0...302  | °C/°F |
| EnS     | EdH   | Weekday energy saving start hour                     | 32885             | 0           | 38165             | 12          | RW  | Word      |     | 0...24       | hours |
| EnS     | Edn   | Weekday energy saving start minutes                  | 32886             | 0           | 38165             | 48          | RW  | Word      |     | 0...59       | min   |
| EnS     | Edd   | Weekday energy saving duration                       | 32887             | 0           | 38165             | 192         | RW  | Word      |     | 1...72       | hours |
| EnS     | EFH   | Weekend/holiday energy saving start hour             | 32888             | 0           | 38165             | 768         | RW  | Word      |     | 0...24       | hours |
| EnS     | EFn   | Weekend/holiday energy saving start minutes          | 32889             | 0           | 38165             | 3072        | RW  | Word      |     | 0...59       | min   |
| EnS     | EFd   | Weekend/holiday energy saving duration               | 32890             | 0           | 38165             | 12288       | RW  | Word      |     | 1...72       | hours |
| FrH     | FH    | Frame heater probe selection                         | 32991             | 0           | 38165             | 49152       | RW  | Word      |     | 0...9        | num   |
| FrH     | FHt   | Frame heater period                                  | 32993             | 0           | 38166             | 3           | RW  | Word      |     | 1...250      | s*10  |
| FrH     | FH0   | Frame heater set                                     | 32994             | 0           | 38166             | 12          | RW  | Word      | Y   | -58.0...302  | °C/°F |
| FrH     | FH1   | Frame heater offset                                  | 32995             | 0           | 38166             | 48          | RW  | Word      |     | 0...25.0     | °C/°F |
| FrH     | FH2   | Frame heater band                                    | 32996             | 0           | 38166             | 192         | RW  | Word      | Y   | -58.0...302  | °C/°F |
| FrH     | FH3   | Frame heater minimum percentage/duty-cycle           | 32997             | 0           | 38166             | 768         | RW  | Word      |     | 0...100      | %     |
| FrH     | FH4   | Frame heater maximum percentage/day duty-cycle       | 32998             | 0           | 38166             | 3072        | RW  | Word      |     | 0...100      | %     |
| FrH     | FH5   | Frame heater maximum percentage/night duty-cycle     | 32999             | 0           | 38166             | 12288       | RW  | Word      |     | 0...100      | %     |
| FrH     | FH6   | Frame heater percentage/duty-cycle in defrost        | 33000             | 0           | 38166             | 49152       | RW  | Word      |     | 0...100      | %     |
| Add     | Adr   | Modbus protocol controller address                   | 33157             | 0           | 38241             | 48          | RW  | Word      |     | 1...250      | num   |
| Add     | bAU   | Baudrate selection                                   | 33152             | 0           | 38241             | 192         | RW  | Word      |     | 0...2        | num   |
| Add     | Pty   | MODBUS parity bit                                    | 33154             | 0           | 38241             | 768         | RW  | Word      |     | 0...2        | num   |
| diS     | LOC   | Disable terminal                                     | 33003             | 0           | 38167             | 3           | RW  | Word      |     | 0...1        | flag  |
| diS     | PS1   | Password 1 value                                     | 33004             | 0           | 38167             | 12          | RW  | Word      |     | 0...250      | num   |
| diS     | PS2   | Password 2 value                                     | 33005             | 0           | 38167             | 48          | RW  | Word      |     | 0...250      | num   |
| diS     | ndt   | Display with decimal point                           | 33006             | 0           | 38167             | 192         | RW  | Word      |     | 0...1        | flag  |
| diS     | CA1   | Analog input 1 calibration                           | 32812             | 0           | 38167             | 768         | RW  | Word      | Y   | -30.0...30.0 | °C/°F |
| diS     | CA2   | Analog input 2 calibration                           | 32813             | 0           | 38167             | 3072        | RW  | Word      | Y   | -30.0...30.0 | °C/°F |

| Folders | Label | Description                                  | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range        | MU      |
|---------|-------|----------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|--------------|---------|
| diS     | CA3   | Analog input 3 calibration                   | 32814             | 0           | 38167             | 12288       | RW  | Word      | Y   | -30.0...30.0 | °C/°F   |
| diS     | CA4   | Analog input 4 calibration                   | 32815             | 0           | 38167             | 49152       | RW  | Word      | Y   | -30.0...30.0 | °C/°F   |
| diS     | CA5   | Analog input 5 calibration                   | 32816             | 0           | 38168             | 3           | RW  | Word      | Y   | -30.0...30.0 | °C/°F   |
| diS     | CA6   | Analog input 6 calibration                   | 32817             | 0           | 38168             | 12          | RW  | Word      | Y   | -30.0...30.0 | bar/psi |
| diS     | CA7   | Analog input 7 calibration                   | 32818             | 0           | 38168             | 48          | RW  | Word      | Y   | -30.0...30.0 | bar/psi |
| diS     | LdL   | Minimum display value                        | 33007             | 0           | 38168             | 192         | RW  | Word      | Y   | -58.0...HdL  | °C/°F   |
| diS     | HdL   | Maximum display value                        | 33008             | 0           | 38168             | 768         | RW  | Word      | Y   | LdL...302.0  | °C/°F   |
| diS     | ddL   | Display lock mode during a defrost           | 33009             | 0           | 38168             | 3072        | RW  | Word      |     | 0...2        | num     |
| diS     | Ldd   | Display lock timeout from end of defrost     | 33010             | 0           | 38168             | 12288       | RW  | Word      |     | 0...250      | min     |
| diS     | dro   | Select °C / °F                               | 33011             | 0           | 38168             | 49152       | RW  | Word      |     | 0...1        | flag    |
| diS     | SbP   | Pressure unit of measure                     | 33012             | 0           | 38169             | 3           | RW  | Word      |     | 0...1        | flag    |
| diS     | rEP   | Displayed pressure relative or absolute      | 33170             | 0           | 38250             | 3           | RW  | Word      |     | 0...1        | flag    |
| diS     | ddd   | Select main display value                    | 33013             | 0           | 38169             | 12          | RW  | Word      |     | 0...8        | num     |
| diS     | ddE   | Resource displayed on ECHO                   | 33014             | 0           | 38169             | 48          | RW  | Word      |     | 0...11       | num     |
| HCP     | rPH   | Select HACCP probe                           | 32965             | 0           | 38169             | 192         | RW  | Word      |     | 0...5        | num     |
| CnF     | trA   | Select ratiometric probe type                | 33163             | 0           | 38241             | 3072        | RW  | Word      |     | 0...8        | num     |
| CnF     | H00   | Select analog input type NTC/PTC/Pt1000      | 32780             | 0           | 38169             | 768         | RW  | Word      |     | 0...2        | num     |
| CnF     | H02   | Function activation time from terminal       | 33015             | 0           | 38169             | 3072        | RW  | Word      |     | 0...250      | s       |
| CnF     | H03   | Current input lower limit                    | 33164             | 0           | 38241             | 12288       | RW  | Word      | Y   | -1...H04     | bar     |
| CnF     | H04   | Current input upper limit                    | 33165             | 0           | 38241             | 49152       | RW  | Word      | Y   | H03...150    | bar     |
| CnF     | H05   | Ratiometric probe lower limit                | 33166             | 0           | 38242             | 3           | RW  | Word      | Y   | -1...H06     | bar     |
| CnF     | H06   | Ratiometric probe upper limit                | 33167             | 0           | 38242             | 12          | RW  | Word      | Y   | H05...150    | bar     |
| CnF     | 08L   | Analog input 8 lower limit                   | 33195             | 0           | 38250             | 49152       | RW  | Word      |     | 0...08H      | num     |
| CnF     | 08H   | Analog input 8 upper limit                   | 33196             | 0           | 38251             | 3           | RW  | Word      |     | 08L...100    | num     |
| CnF     | 08P   | Keyboard probe prescaler                     | 33197             | 0           | 38251             | 12          | RW  | Word      |     | 0...2        | num     |
| CnF     | 08U   | Keyboard probe measurement unit              | 33200             | 0           | 38251             | 768         | RW  | Word      |     | 0...5        | num     |
| CnF     | H08   | Stand-by operating mode                      | 33017             | 0           | 38169             | 12288       | RW  | Word      |     | 0...2        | num     |
| CnF     | H11   | Digital input 1 configurability and polarity | 32783             | 0           | 38169             | 49152       | RW  | Word      | Y   | -19...19     | num     |
| CnF     | H12   | Digital input 2 configurability and polarity | 32784             | 0           | 38170             | 3           | RW  | Word      | Y   | -19...19     | num     |
| CnF     | H13   | Digital input 3 configurability and polarity | 32785             | 0           | 38170             | 12          | RW  | Word      | Y   | -19...19     | num     |

| Folders | Label | Description                                   | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range    | MU   |
|---------|-------|-----------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|----------|------|
| CnF     | H14   | Digital input 4 configurability and polarity  | 32786             | 0           | 38170             | 48          | RW  | Word      | Y   | -19...19 | num  |
| CnF     | H15   | Digital input 5 configurability and polarity  | 32787             | 0           | 38170             | 192         | RW  | Word      | Y   | -19...19 | num  |
| CnF     | H16   | Digital input 6 configurability and polarity  | 32788             | 0           | 38170             | 768         | RW  | Word      | Y   | -19...19 | num  |
| CnF     | H17   | Digital input 7 configurability and polarity  | 32789             | 0           | 38170             | 3072        | RW  | Word      | Y   | -19...19 | num  |
| CnF     | H18   | Digital input 8 configurability and polarity  | 32790             | 0           | 38170             | 12288       | RW  | Word      | Y   | -19...19 | num  |
| CnF     | i01   | Digital input 9 configurability and polarity  | 33050             | 0           | 38181             | 192         | RW  | Word      | Y   | -19...19 | num  |
| CnF     | i02   | Digital input 10 configurability and polarity | 33051             | 0           | 38181             | 768         | RW  | Word      | Y   | -19...19 | num  |
| CnF     | dti   | Digital inputs 1 and 2 delay unit of measure  | 32799             | 0           | 38170             | 49152       | RW  | Word      |     | 0...1    | flag |
| CnF     | d11   | D.I. 1 activation indication delay time       | 32791             | 0           | 38171             | 3           | RW  | Word      |     | 0...255  | min  |
| CnF     | d12   | D.I. 2 activation indication delay time       | 32792             | 0           | 38171             | 12          | RW  | Word      |     | 0...255  | min  |
| CnF     | d13   | D.I. 3 activation indication delay time       | 32793             | 0           | 38171             | 48          | RW  | Word      |     | 0...255  | min  |
| CnF     | d14   | D.I. 4 activation indication delay time       | 32794             | 0           | 38171             | 192         | RW  | Word      |     | 0...255  | min  |
| CnF     | d15   | D.I. 5 activation indication delay time       | 32795             | 0           | 38171             | 768         | RW  | Word      |     | 0...255  | min  |
| CnF     | d16   | D.I. 6 activation indication delay time       | 32796             | 0           | 38171             | 3072        | RW  | Word      |     | 0...255  | min  |
| CnF     | d17   | D.I. 7 activation indication delay time       | 32797             | 0           | 38171             | 12288       | RW  | Word      |     | 0...255  | min  |
| CnF     | d18   | D.I. 8 activation indication delay time       | 32798             | 0           | 38171             | 49152       | RW  | Word      |     | 0...255  | min  |
| CnF     | 01i   | D.I. 9 activation indication delay time       | 33052             | 0           | 38181             | 3072        | RW  | Word      |     | 0...255  | min  |
| CnF     | 02i   | D.I. 10 activation indication delay time      | 33053             | 0           | 38181             | 12288       | RW  | Word      |     | 0...255  | min  |
| CnF     | H21   | Configurability of digital output 1           | 32820             | 0           | 38172             | 3           | RW  | Word      |     | 0...19   | num  |
| CnF     | H22   | Configurability of digital output 2           | 32821             | 0           | 38172             | 12          | RW  | Word      |     | 0...19   | num  |
| CnF     | H23   | Configurability of digital output 3           | 32822             | 0           | 38172             | 48          | RW  | Word      |     | 0...19   | num  |
| CnF     | H24   | Configurability of digital output 4           | 32823             | 0           | 38172             | 192         | RW  | Word      |     | 0...19   | num  |
| CnF     | H25   | Configurability of digital output 5           | 32824             | 0           | 38172             | 768         | RW  | Word      |     | 0...19   | num  |
| CnF     | H27   | Configurability of digital output 7           | 32826             | 0           | 38172             | 12288       | RW  | Word      |     | 0...19   | num  |
| CnF     | H29   | Enable buzzer                                 | 32827             | 0           | 38172             | 49152       | RW  | Word      |     | 0...1    | flag |
| CnF     | d01   | Configurability of digital output 8           | 33043             | 0           | 38180             | 768         | RW  | Word      |     | 0...19   | num  |
| CnF     | d02   | Configurability of digital output 9           | 33044             | 0           | 38180             | 3072        | RW  | Word      |     | 0...19   | num  |

| Folders | Label | Description                                                                 | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range          | MU   |
|---------|-------|-----------------------------------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|----------------|------|
| CnF     | H31   | Configurability of the UP key                                               | 33018             | 0           | 38173             | 3           | RW  | Word      |     | 0...9          | num  |
| CnF     | H32   | Configurability of the DOWN key                                             | 33019             | 0           | 38173             | 12          | RW  | Word      |     | 0...9          | num  |
| CnF     | H33   | Configurability of the ESC key                                              | 33020             | 0           | 38173             | 48          | RW  | Word      |     | 0...9          | num  |
| CnF     | H34   | Configurability of the Free 1 key                                           | 33021             | 0           | 38173             | 192         | RW  | Word      |     | 0...9          | num  |
| CnF     | H35   | Configurability of the Free 2 key                                           | 33022             | 0           | 38173             | 768         | RW  | Word      |     | 0...9          | num  |
| CnF     | H36   | Configurability of the Free 3 key                                           | 33023             | 0           | 38173             | 3072        | RW  | Word      |     | 0...9          | num  |
| CnF     | H37   | Configurability of the Free 4 key                                           | 33024             | 0           | 38173             | 12288       | RW  | Word      |     | 0...9          | num  |
| CnF     | H41   | Configurability of analog input 1                                           | 32800             | 0           | 38173             | 49152       | RW  | Word      |     | 0...2          | num  |
| CnF     | H42   | Configurability of analog input 2                                           | 32801             | 0           | 38174             | 3           | RW  | Word      |     | 0...2          | num  |
| CnF     | H43   | Configurability of analog input 3                                           | 32802             | 0           | 38174             | 12          | RW  | Word      |     | 0...2          | num  |
| CnF     | H44   | Configurability of analog input 4                                           | 32803             | 0           | 38174             | 48          | RW  | Word      |     | 0...2          | num  |
| CnF     | H45   | Configurability of analog input 5                                           | 32804             | 0           | 38174             | 192         | RW  | Word      |     | 0...2          | num  |
| CnF     | H46   | Configurability of analog input 6                                           | 32805             | 0           | 38174             | 768         | RW  | Word      |     | 0...2          | num  |
| CnF     | H47   | Configurability of analog input 7                                           | 32806             | 0           | 38174             | 3072        | RW  | Word      |     | 0...2          | num  |
| CnF     | H48   | Configurability of analog input 8                                           | 33054             | 0           | 38181             | 49152       | RW  | Word      |     | 0...2          | num  |
| CnF     | H50   | Configurability of analog output 1                                          | 32828             | 0           | 38174             | 12288       | RW  | Word      |     | 0...1          | flag |
| CnF     | H51   | Function associated with analog output                                      | 32829             | 0           | 38174             | 49152       | RW  | Word      |     | 0...3          | num  |
| CnF     | H60   | Parameter vector selector                                                   | 33158             | 0           | 38242             | 48          | R   | Word      |     | 0...8          | num  |
| CnF     | H68   | RTC present                                                                 | 32830             | 0           | 38175             | 3           | RW  | Word      |     | 0...1          | flag |
| CnF     | H70   | Selection of 1st sensor for virtual probe                                   | 32808             | 0           | 38175             | 12          | RW  | Word      |     | 0...5          | num  |
| CnF     | H71   | Selection of 2nd sensor for virtual probe                                   | 32809             | 0           | 38175             | 48          | RW  | Word      |     | 0...5          | num  |
| CnF     | H72   | Day virtual probe calculation %                                             | 32810             | 0           | 38175             | 192         | RW  | Word      |     | 0...100        | %    |
| CnF     | H73   | Night virtual probe calculation %                                           | 32811             | 0           | 38175             | 768         | RW  | Word      |     | 0...100        | %    |
| CnF     | H74   | Selection of 1st sensor for filtered virtual probe                          | 33040             | 0           | 38179             | 49152       | RW  | Word      |     | 0...6          | num  |
| CnF     | H75   | Percentage in thousandths of the incoming signal for filtered virtual probe | 33041             | 0           | 38180             | 3           | RW  | Word      |     | 1...1000       | num  |
| CnF     | H76   | Filtered virtual probe offset                                               | 33042             | 0           | 38180             | 12          | RW  | Word      | Y   | -999.9...999.9 | num  |
| EE0     | EtY   | Selection of electronic expansion valve driver                              | 33025             | 0           | 38175             | 3072        | RW  | Word      |     | 0...1          | flag |
| EE0     | rSP   | Select saturation probe                                                     | 33280             | 0           | 38242             | 192         | RW  | Word      |     | 0...4          | num  |
| EE0     | rSS   | Select superheat probe                                                      | 33281             | 0           | 38242             | 768         | RW  | Word      |     | 0...5          | num  |
| EE0     | rbu   | Select backup saturation probe                                              | 33282             | 0           | 38242             | 3072        | RW  | Word      |     | 0...2          | num  |

| Folders | Label | Description                                                      | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range          | MU    |
|---------|-------|------------------------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|----------------|-------|
| EE0     | EPd   | View temperature/pressure saturation value                       | 33284             | 0           | 38242             | 12288       | RW  | Word      |     | 0...1          | flag  |
| EE0     | Ert   | Select type of refrigerant                                       | 33285             | 0           | 38242             | 49152       | RW  | Word      |     | 0...18         | num   |
| EE0     | U02   | Maximum valve opening percentage                                 | 33287             | 0           | 38243             | 12          | RW  | Word      |     | 0...100        | %     |
| EE0     | U05   | Operating time at max opening for alarm signaling                | 33290             | 0           | 38243             | 768         | RW  | Word      |     | 0...255        | min   |
| EE0     | U06   | Minimum useful valve opening percentage                          | 33291             | 0           | 38243             | 3072        | RW  | Word      |     | 0...100        | %     |
| EE0     | U07   | Maximum useful valve opening percentage                          | 33292             | 0           | 38243             | 12288       | RW  | Word      |     | 0...100        | %     |
| EE0     | U08   | Valve opening percentage during probe error                      | 33293             | 0           | 38243             | 49152       | RW  | Word      |     | 0...100        | %     |
| EE0     | U09   | Minimum time needed to evaluate predictive filter parameters     | 33288             | 0           | 38243             | 48          | RW  | Word      |     | 0.0...3276.7   | s     |
| EE0     | U10   | Expired time predictive filter parameters                        | 33289             | 0           | 38243             | 192         | RW  | Word      |     | 0...32767      | s     |
| EE0     | U11   | Minimum superheat temperature speed                              | 33294             | 0           | 38244             | 3           | RW  | Word      |     | -999.9...999.9 | °C/s  |
| EE0     | U12   | Minimum superheat to consider the evaporator empty               | 33295             | 0           | 38244             | 12          | RW  | Word      |     | 0...999.9      | °C/°F |
| EE0     | U13   | Observation time for parameter recalculation                     | 33296             | 0           | 38244             | 48          | RW  | Word      |     | 0...3600       | s     |
| EE0     | U14   | Superheat minimum transit band                                   | 33297             | 0           | 38244             | 192         | RW  | Word      |     | 0...U15        | °C/°F |
| EE0     | U15   | Maximum superheat pass band                                      | 33298             | 0           | 38244             | 768         | RW  | Word      |     | 0.0...999.9    | °C/°F |
| EE0     | U16   | Default superheat pass band                                      | 33299             | 0           | 38244             | 3072        | RW  | Word      |     | 0.0...999.9    | °C/°F |
| EE0     | U17   | Upper threshold multiplier continuum modulation                  | 33300             | 0           | 38244             | 12288       | RW  | Word      |     | 0.0...999.9    | num   |
| EE0     | U18   | Lower threshold multiplier continuum modulation                  | 33301             | 0           | 38244             | 49152       | RW  | Word      |     | 0.0...999.9    | num   |
| EE0     | U20   | Continuous modulation differential gain                          | 33304             | 0           | 38245             | 48          | RW  | Word      |     | 0...999.9      | num   |
| EE0     | U21   | Maximum valve open speed                                         | 33305             | 0           | 38245             | 192         | RW  | Word      |     | 0.0...999.9    | %/s   |
| EE0     | U22   | Enable saturation probe fixed value in case of error             | 33306             | 0           | 38245             | 768         | RW  | Word      |     | 0...1          | num   |
| EE0     | U23   | Saturation probe fixed value in case of error                    | 33307             | 0           | 38245             | 3072        | RW  | Word      | Y   | -999.9...999.9 | °C/°F |
| EE0     | U25   | Selection of loads to be disabled with faulty compressor         | 33310             | 0           | 38246             | 3           | RW  | Word      |     | 0...15         | %     |
| EE0     | U26   | Saturation temperature threshold for faulty compressor detection | 33311             | 0           | 38246             | 12          | RW  | Word      | Y   | -999.9...999.9 | °C/°F |
| EE0     | U27   | Minimum valve opening percentage                                 | 33312             | 0           | 38246             | 48          | RW  | Word      |     | 0.0...100      | %     |
| EE0     | U51   | Superheat filter coefficient                                     | 33283             | 0           | 38246             | 192         | RW  | Word      |     | 0...999        | %     |



| Folders | Label | Description                                                       | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range          | MU    |
|---------|-------|-------------------------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|----------------|-------|
| EE0     | U52   | Superheat offset integral time                                    | 33313             | 0           | 38246             | 768         | RW  | Word      |     | 0...999        | s     |
| EE0     | U53   | Pump out time                                                     | 33314             | 0           | 38246             | 3072        | RW  | Word      |     | 0...600        | s     |
| EE0     | U54   | Pump in time                                                      | 33315             | 0           | 38246             | 12288       | RW  | Word      |     | 0...600        | s     |
| EE0     | U55   | Pump out/in period                                                | 33316             | 0           | 38246             | 49152       | RW  | Word      |     | 0...900        | s*10  |
| EE0     | U56   | AUG band.                                                         | 33317             | 0           | 38247             | 3           | RW  | Word      |     | 0.0...10.0     | °C/°F |
| EE0     | U57   | Superheat offset maximum value.                                   | 33318             | 0           | 38247             | 12          | RW  | Word      |     | 0.0...10.0     | °C/°F |
| EE0     | U58   | Sets if the controller consider also air temperature.             | 33319             | 0           | 38247             | 12288       | RW  | Word      |     | 0/1            | flag  |
| EE0     | U60   | Minimum superheat filter threshold                                | 33326             | 0           | 38248             | 12          | RW  | Word      | Y   | -99.9...0.0    | °C/°F |
| EE0     | U61   | Maximum superheat filter threshold                                | 33327             | 0           | 38248             | 48          | RW  | Word      |     | 0.0...99.9     | °C/°F |
| EE0     | U64   | Minimum superheat percentage - forced mode                        | 33330             | 0           | 38248             | 3072        | RW  | Word      |     | 0...100        | %     |
| EE0     | U65   | Activation time of minimum superheat percentage                   | 33331             | 0           | 38248             | 12288       | RW  | Word      |     | 0...999        | s     |
| EE0     | U66   | Selects the superheat regulation algorithm                        | 33332             | 0           | 38248             | 49152       | RW  | Word      |     | 0/1            | flag  |
| EE0     | U67   | Superheat lower threshold                                         | 33333             | 0           | 38249             | 3           | RW  | Word      | Y   | -99.9...OLt    | °C/°F |
| EE0     | U68   | Time spent under the superheat lower threshold                    | 33334             | 0           | 38249             | 12          | RW  | Word      |     | 0...600        | s     |
| EE0     | OLt   | Minimum superheat threshold                                       | 33302             | 0           | 38245             | 3           | RW  | Word      |     | 0...999.9      | °C/°F |
| EE0     | A_F   | Select PID automatic or manual mode                               | 10287             | 0           | 38250             | 12          | RW  | Word      |     | 0...1          | flag  |
| EE0     | dUt   | PID duty cycle in manual mode                                     | 10288             | 0           | 38250             | 48          | RW  | Word      |     | 0...100        | %     |
| EE0     | HOE   | Enable MOP                                                        | 33320             | 0           | 38247             | 48          | RW  | Word      |     | 0...1          | flag  |
| EE0     | tAP   | Min. time max. temp threshold exceeded due to alarm activation    | 33321             | 0           | 38247             | 192         | RW  | Word      |     | 0...255        | min   |
| EE0     | Hot   | Maximum evaporator temperature threshold                          | 33322             | 0           | 38247             | 768         | RW  | Word      | Y   | -999.9...999.9 | °C/°F |
| EE0     | HdP   | MOP disable duration at startup                                   | 33323             | 0           | 38247             | 3072        | RW  | Word      |     | 0...999        | min   |
| EE0     | HPd   | MOP proportional band.                                            | 33325             | 0           | 38247             | 49152       | RW  | Word      |     | 0.1...999.9    | K     |
| FPr     | UL    | Visibility of parameter transfer function (Device -> UNICARD/MFK) | -                 | -           | 38178             | 3           | RW  | Word      |     | 0...3          | num   |
| FPr     | dL    | Visibility of parameter transfer function (UNICARD/MFK -> Device) | -                 | -           | 38178             | 12          | RW  | Word      |     | 0...3          | num   |
| FPr     | Fr    | Visibility of UNICARD/MFK formatting function                     | -                 | -           | 38178             | 48          | RW  | Word      |     | 0...3          | num   |
| OiL     | OHP   | Selection of oil temperature probe                                | 33032             | 0           | 38178             | 12288       | RW  | Word      |     | 0...8          | num   |
| OiL     | OSP   | Oil heater setpoint                                               | 33033             | 0           | 38178             | 49152       | RW  | Word      | Y   | OLS...OHS      | °C/°F |
| OiL     | OHd   | Oil heater differential                                           | 33034             | 0           | 38179             | 3           | RW  | Word      |     | 0.1...25.0     | °C/°F |

| Folders | Label | Description                                       | Val. Par. Address | Val. Filter | Vis. Par. Address | Vis. Filter | R/W | Date Size | CPL | Range       | MU    |
|---------|-------|---------------------------------------------------|-------------------|-------------|-------------------|-------------|-----|-----------|-----|-------------|-------|
| Oil     | OHS   | Maximum oil heater setpoint value that can be set | 33036             | 0           | 38179             | 48          | RW  | Word      | Y   | OLS...302.0 | °C/°F |
| Oil     | OLS   | Minimum oil heater setpoint value that can be set | 33037             | 0           | 38179             | 192         | RW  | Word      | Y   | -58.0...OHS | °C/°F |

| Application 1 parameters |        |                                                           |       |   |       |       |    |      |   |                 |       |
|--------------------------|--------|-----------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V1                       | V1-rE  | Regulation type                                           | 34428 | 0 | 38272 | 3     | RW | Word |   | 0...6           | num   |
| V1                       | V1-rP1 | Thermostat regulation probe 1                             | 34429 | 0 | 38272 | 12    | RW | Word |   | 0...8           | num   |
| V1                       | V1-rP2 | Thermostat regulation probe 2                             | 34430 | 0 | 38272 | 48    | RW | Word |   | 0...9           | num   |
| V1                       | V1-SP1 | Regulation setpoint 1                                     | 34431 | 0 | 38272 | 192   | RW | Word | Y | V1-LS1...V1-HS1 | °C/°F |
| V1                       | V1-dF1 | Setpoint differential 1                                   | 34432 | 0 | 38272 | 768   | RW | Word | Y | -58.0...302     | °C/°F |
| V1                       | V1-SP2 | Regulation setpoint 2                                     | 34433 | 0 | 38272 | 3072  | RW | Word | Y | V1-LS2...V1-HS2 | °C/°F |
| V1                       | V1-dF2 | Setpoint differential 2                                   | 34434 | 0 | 38272 | 12288 | RW | Word | Y | -58.0...302     | °C/°F |
| V1                       | V1-Stt | Differential management mode                              | 34437 | 0 | 38272 | 49152 | RW | Word |   | 0...1           | flag  |
| V1                       | V1-HS1 | Maximum value that can be set for Setpoint 1              | 34440 | 0 | 38273 | 3     | RW | Word | Y | V1-LS1...V1-HdL | °C/°F |
| V1                       | V1-LS1 | Minimum value that can be set for Setpoint 1              | 34441 | 0 | 38273 | 12    | RW | Word | Y | V1-LdL...V1-HS1 | °C/°F |
| V1                       | V1-HS2 | Maximum value that can be set for Setpoint 2              | 34442 | 0 | 38273 | 48    | RW | Word | Y | V1-LS2...V1-HdL | °C/°F |
| V1                       | V1-LS2 | Minimum value that can be set for Setpoint 2              | 34443 | 0 | 38273 | 192   | RW | Word | Y | V1-LdL...V1-HS2 | °C/°F |
| V1                       | V1-HC1 | Setpoint 1 operating mode (Heating/Cooling)               | 34438 | 0 | 38273 | 768   | RW | Word |   | 0...1           | flag  |
| V1                       | V1-HC2 | Setpoint 2 operating mode (Heating/Cooling)               | 34439 | 0 | 38273 | 3072  | RW | Word |   | 0...1           | flag  |
| V1                       | V1-Cit | Minimum compressor output activation time                 | 34448 | 0 | 38273 | 49152 | RW | Word |   | 0...250         | min   |
| V1                       | V1-CAt | Maximum compressor output activation time                 | 34449 | 0 | 38274 | 3     | RW | Word |   | 0...250         | min   |
| V1                       | V1-Ont | Compressor output ON time if regulation probe is faulty   | 34454 | 0 | 38274 | 12    | RW | Word |   | 0...250         | min   |
| V1                       | V1-OFt | Compressor output OFF time if regulation probe is faulty  | 34455 | 0 | 38274 | 48    | RW | Word |   | 0...250         | min   |
| V1                       | V1-dOn | Compressor output activation delay from call              | 34450 | 0 | 38274 | 192   | RW | Word |   | 0...250         | s     |
| V1                       | V1-dOF | Compressor output activation delay from switch-off        | 34451 | 0 | 38274 | 768   | RW | Word |   | 0...250         | min   |
| V1                       | V1-dbi | Delay between two consecutive compressor output power-ons | 34452 | 0 | 38274 | 3072  | RW | Word |   | 0...250         | min   |
| V1                       | V1-OdO | Output activation delay at startup                        | 34453 | 0 | 38274 | 12288 | RW | Word |   | 0...250         | min   |
| V1                       | V1-CFP | Condenser pre-ventilation time in Heat/Cool               | 34537 | 0 | 38275 | 12    | RW | Word |   | 0...255         | s     |

|    |        |                                                                 |       |   |       |       |    |      |   |              |       |
|----|--------|-----------------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|-------|
| V1 | V1-CFd | Condenser fan cut-out during defrosting.                        | 34538 | 0 | 38275 | 48    | RW | Word |   | 0...1        | flag  |
| V1 | V1-OF1 | Remote offset                                                   | 34459 | 0 | 38275 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F |
| V1 | V1-Pot | Pump down time                                                  | 34565 | 0 | 38306 | 192   | RW | Word |   | 0...250      | s     |
| V1 | V1-SS1 | Compressor softstart: advance hotgas valve opening              | 34566 | 0 | 38306 | 768   | RW | Word |   | 0...250      | s     |
| V1 | V1-SS2 | Compressor softstart: delay hotgas valve closing                | 34567 | 0 | 38306 | 3072  | RW | Word |   | 0...250      | s     |
| V1 | V1-dP1 | Select defrost probe 1                                          | 34460 | 0 | 38275 | 768   | RW | Word |   | 0...8        | num   |
| V1 | V1-dP2 | Defrost probe 2 selection                                       | 34461 | 0 | 38275 | 3072  | RW | Word |   | 0...8        | num   |
| V1 | V1-dty | Type of defrost                                                 | 34464 | 0 | 38275 | 12288 | RW | Word |   | 0...4        | num   |
| V1 | V1-dFt | Dual evaporator defrost activation mode                         | 34462 | 0 | 38275 | 49152 | RW | Word |   | 0...2        | num   |
| V1 | V1-dit | Interval between defrosts                                       | 34465 | 0 | 38276 | 3     | RW | Word |   | 0...250      | hours |
| V1 | V1-dt1 | Unit of measure for defrost intervals                           | 34468 | 0 | 38276 | 12    | RW | Word |   | 0...2        | num   |
| V1 | V1-dt2 | Unit of measure for defrost duration                            | 34469 | 0 | 38276 | 48    | RW | Word |   | 0...2        | num   |
| V1 | V1-dCt | Defrost interval count mode                                     | 34463 | 0 | 38276 | 192   | RW | Word |   | 0...5        | num   |
| V1 | V1-dOH | Defrost cycle activation delay from the call                    | 34470 | 0 | 38276 | 768   | RW | Word |   | 0...250      | min   |
| V1 | V1-dE1 | Evaporator 1 defrost maximum duration                           | 34466 | 0 | 38276 | 3072  | RW | Word |   | 1...250      | min   |
| V1 | V1-dE2 | Evaporator 2 defrost maximum duration                           | 34467 | 0 | 38276 | 12288 | RW | Word |   | 1...250      | min   |
| V1 | V1-dS1 | Evaporator 1 defrost end temperature                            | 34472 | 0 | 38276 | 49152 | RW | Word | Y | -58.0...302  | °C/°F |
| V1 | V1-dS2 | Evaporator 2 defrost end temperature                            | 34473 | 0 | 38277 | 3     | RW | Word | Y | -58.0...302  | °C/°F |
| V1 | V1-dSS | Temperature threshold for starting defrost                      | 34471 | 0 | 38277 | 12    | RW | Word | Y | -58.0...302  | °C/°F |
| V1 | V1-dPO | Defrost activation request at power-on                          | 34474 | 0 | 38277 | 48    | RW | Word |   | 0...1        | flag  |
| V1 | V1-tcd | Compressor output activation/deactivation time before a defrost | 34475 | 0 | 38277 | 192   | RW | Word | Y | -60...60     | min   |
| V1 | V1-ndE | minimum defrost duration time                                   | 34476 | 0 | 38277 | 768   | RW | Word |   | 0...250      | min   |
| V1 | V1-PdC | Hot gas extraction time at the end of the defrost               | 34477 | 0 | 38277 | 3072  | RW | Word |   | 0...250      | min   |
| V1 | V1-tPd | Pump down time before defrost start                             | 34479 | 0 | 38277 | 12288 | RW | Word |   | 0...255      | min   |
| V1 | V1-dPH | Regular defrost start hour                                      | 34418 | 0 | 38277 | 49152 | RW | Word |   | 0...24       | hours |
| V1 | V1-dPn | Regular defrost start minutes                                   | 34419 | 0 | 38278 | 3     | RW | Word |   | 0...59       | min   |
| V1 | V1-dPd | Regular defrost interval duration                               | 34420 | 0 | 38278 | 12    | RW | Word |   | 1...7        | day   |
| V1 | V1-Fd1 | 1st weekend/holiday day                                         | 34367 | 0 | 38278 | 48    | RW | Word |   | 0...7        | num   |
| V1 | V1-Fd2 | 2nd weekend/holiday day                                         | 34368 | 0 | 38278 | 192   | RW | Word |   | 0...7        | num   |
| V1 | V1-Edt | Timeout and defrost end temperature specific to each event      | 34369 | 0 | 38278 | 768   | RW | Word |   | 0...1        | flag  |
| V1 | V1-Fdn | Weekday defrost number                                          | 34317 | 0 | 38312 | 3     | RW | Word |   | 0...250      | num   |

|    |        |                                             |       |   |       |       |    |      |   |             |       |
|----|--------|---------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V1 | V1-FFn | Weekend/holiday defrost number              | 34318 | 0 | 38312 | 12    | RW | Word |   | 0...250     | num   |
| V1 | V1-PrH | Basin heater pre-activation time            | 34574 | 0 | 38307 | 3072  | RW | Word |   | 0...255     | min   |
| V1 | V1-d1H | Weekday defrost no. 1 start hour            | 34370 | 0 | 38278 | 3072  | RW | Word |   | 0...24      | hours |
| V1 | V1-d1n | Weekday defrost no. 1 start minute          | 34371 | 0 | 38278 | 12288 | RW | Word |   | 0...59      | min   |
| V1 | V1-d1t | 1st weekday defrost duration                | 34372 | 0 | 38278 | 49152 | RW | Word |   | 0...250     | min   |
| V1 | V1-d1S | 1st weekday defrost end temperature         | 34373 | 0 | 38279 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-d2H | Weekday defrost no. 2 start hour            | 34374 | 0 | 38279 | 12    | RW | Word |   | V1-d1H...24 | hours |
| V1 | V1-d2n | Weekday defrost no. 2 start minutes         | 34375 | 0 | 38279 | 48    | RW | Word |   | 0...59      | min   |
| V1 | V1-d2t | 2nd weekday defrost duration                | 34376 | 0 | 38279 | 192   | RW | Word |   | 0...250     | min   |
| V1 | V1-d2S | 2nd weekday defrost end temperature         | 34377 | 0 | 38279 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-d3H | Weekday defrost no. 3 start hour            | 34378 | 0 | 38279 | 3072  | RW | Word |   | V1-d2H...24 | hours |
| V1 | V1-d3n | Weekday defrost no. 3 start minutes         | 34379 | 0 | 38279 | 12288 | RW | Word |   | 0...59      | min   |
| V1 | V1-d3t | 3rd weekday defrost duration                | 34380 | 0 | 38279 | 49152 | RW | Word |   | 0...250     | min   |
| V1 | V1-d3S | 3rd weekday defrost end temperature         | 34381 | 0 | 38280 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-d4H | Weekday defrost no. 4 start hour            | 34382 | 0 | 38280 | 12    | RW | Word |   | V1-d3H...24 | hours |
| V1 | V1-d4n | Weekday defrost no. 4 start minutes         | 34383 | 0 | 38280 | 48    | RW | Word |   | 0...59      | min   |
| V1 | V1-d4t | 4th weekday defrost duration                | 34384 | 0 | 38280 | 192   | RW | Word |   | 0...250     | min   |
| V1 | V1-d4S | 4th weekday defrost end temperature         | 34385 | 0 | 38280 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-d5H | Weekday defrost no. 5 start hour            | 34386 | 0 | 38280 | 3072  | RW | Word |   | V1-d4H...24 | hours |
| V1 | V1-d5n | Weekday defrost no. 5 start minutes         | 34387 | 0 | 38280 | 12288 | RW | Word |   | 0...59      | min   |
| V1 | V1-d5t | 5th weekday defrost duration                | 34388 | 0 | 38280 | 49152 | RW | Word |   | 0...250     | min   |
| V1 | V1-d5S | 5th weekday defrost end temperature         | 34389 | 0 | 38281 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-d6H | Weekday defrost no. 6 start hour            | 34390 | 0 | 38281 | 12    | RW | Word |   | V1-d5H...24 | hours |
| V1 | V1-d6n | Weekday defrost no. 6 start minutes         | 34391 | 0 | 38281 | 48    | RW | Word |   | 0...59      | min   |
| V1 | V1-d6t | 6th weekday defrost duration                | 34392 | 0 | 38281 | 192   | RW | Word |   | 0...250     | min   |
| V1 | V1-d6S | 6th weekday defrost end temperature         | 34393 | 0 | 38281 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-F1H | Weekend/holiday defrost no. 1 start hour    | 34394 | 0 | 38281 | 3072  | RW | Word |   | 0...24      | hours |
| V1 | V1-F1n | Weekend/holiday defrost no. 1 start minute  | 34395 | 0 | 38281 | 12288 | RW | Word |   | 0...59      | min   |
| V1 | V1-F1t | 1st weekend/holiday defrost duration        | 34396 | 0 | 38281 | 49152 | RW | Word |   | 0...250     | min   |
| V1 | V1-F1S | 1st weekend/holiday defrost end temperature | 34397 | 0 | 38282 | 3     | RW | Word | Y | -58.0...302 | °C/°F |

|    |        |                                                            |       |   |       |       |    |      |   |             |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V1 | V1-F2H | Weekend/holiday defrost no. 2 start hour                   | 34398 | 0 | 38282 | 12    | RW | Word |   | V1-F1H...24 | hours |
| V1 | V1-F2n | Weekend/holiday defrost no. 2 start minutes                | 34399 | 0 | 38282 | 48    | RW | Word |   | 0...59      | min   |
| V1 | V1-F2t | 2nd weekend/holiday defrost duration                       | 34400 | 0 | 38282 | 192   | RW | Word |   | 0...250     | min   |
| V1 | V1-F2S | 2nd weekend/holiday defrost end temperature                | 34401 | 0 | 38282 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-F3H | Weekend/holiday defrost no. 3 start hour                   | 34402 | 0 | 38282 | 3072  | RW | Word |   | V1-F2H...24 | hours |
| V1 | V1-F3n | Weekend/holiday defrost no. 3 start minutes                | 34403 | 0 | 38282 | 12288 | RW | Word |   | 0...59      | min   |
| V1 | V1-F3t | 3rd weekend/holiday defrost duration                       | 34404 | 0 | 38282 | 49152 | RW | Word |   | 0...250     | min   |
| V1 | V1-F3S | 3rd weekend/holiday defrost end temperature                | 34405 | 0 | 38283 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-F4H | Weekend/holiday defrost no. 4 start hour                   | 34406 | 0 | 38283 | 12    | RW | Word |   | V1-F3H...24 | hours |
| V1 | V1-F4n | Weekend/holiday defrost no. 4 start minutes                | 34407 | 0 | 38283 | 48    | RW | Word |   | 0...59      | min   |
| V1 | V1-F4t | 4th weekend/holiday defrost duration                       | 34408 | 0 | 38283 | 192   | RW | Word |   | 0...250     | min   |
| V1 | V1-F4S | 4th weekend/holiday defrost end temperature                | 34409 | 0 | 38283 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-F5H | Weekend/holiday defrost no. 5 start hour                   | 34410 | 0 | 38283 | 3072  | RW | Word |   | V1-F4H...24 | hours |
| V1 | V1-F5n | Weekend/holiday defrost no. 5 start minutes                | 34411 | 0 | 38283 | 12288 | RW | Word |   | 0...59      | min   |
| V1 | V1-F5t | 5th weekend/holiday defrost duration                       | 34412 | 0 | 38283 | 49152 | RW | Word |   | 0...250     | min   |
| V1 | V1-F5S | 5th weekend/holiday defrost end temperature                | 34413 | 0 | 38284 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-F6H | Weekend/holiday defrost no. 6 start hour                   | 34414 | 0 | 38284 | 12    | RW | Word |   | V1-F5H...24 | hours |
| V1 | V1-F6n | Weekend/holiday defrost no. 6 start minutes                | 34415 | 0 | 38284 | 48    | RW | Word |   | 0...59      | min   |
| V1 | V1-F6t | 6th weekend/holiday defrost duration                       | 34416 | 0 | 38284 | 192   | RW | Word |   | 0...250     | min   |
| V1 | V1-F6S | 6th weekend/holiday defrost end temperature                | 34417 | 0 | 38284 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-FP1 | Selection of evaporator fan probe in normal mode           | 34480 | 0 | 38284 | 3072  | RW | Word |   | 0...7       | num   |
| V1 | V1-FP2 | Selection of evaporator fan probe in defrost               | 34481 | 0 | 38284 | 12288 | RW | Word |   | 0...7       | num   |
| V1 | V1-FPt | FSt parameter mode (absolute or relative)                  | 34482 | 0 | 38284 | 49152 | RW | Word |   | 0...1       | flag  |
| V1 | V1-FSt | Evaporator fan disabling temperature                       | 34483 | 0 | 38285 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V1 | V1-FAd | Evaporator fan trigger differential                        | 34484 | 0 | 38285 | 12    | RW | Word |   | 0.1...25.0  | °C/°F |
| V1 | V1-Fdt | Evaporator fan activation delay time after a defrost cycle | 34485 | 0 | 38285 | 48    | RW | Word |   | 0...250     | min   |

|    |        |                                                            |       |   |       |       |    |      |   |            |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|------------|-------|
| V1 | V1-dt  | Dripping time                                              | 34490 | 0 | 38285 | 192   | RW | Word |   | 0...250    | min   |
| V1 | V1-dFd | Evaporator fan cut-out during defrost                      | 34488 | 0 | 38285 | 768   | RW | Word |   | 0...1      | flag  |
| V1 | V1-FCO | Evaporator fan status with compressor output Off           | 34487 | 0 | 38285 | 3072  | RW | Word |   | 0...4      | num   |
| V1 | V1-Fod | Evaporator fan status with door open                       | 34489 | 0 | 38285 | 12288 | RW | Word |   | 0...1      | flag  |
| V1 | V1-FdC | Evaporator fan shutoff delay after compressor deactivation | 34486 | 0 | 38285 | 49152 | RW | Word |   | 0...250    | min   |
| V1 | V1-FOn | Evaporator fan On time in cyclical regulator mode          | 34491 | 0 | 38286 | 3     | RW | Word |   | 0...250    | min   |
| V1 | V1-FOF | Evaporator fan Off time in cyclical regulator mode         | 34492 | 0 | 38286 | 12    | RW | Word |   | 0...250    | min   |
| V1 | V1-Fnn | Evaporator fan ON time in night mode (duty cycle)          | 34493 | 0 | 38286 | 48    | RW | Word |   | 0...250    | min   |
| V1 | V1-FnF | Evaporator fan OFF time in night mode (duty cycle)         | 34494 | 0 | 38286 | 192   | RW | Word |   | 0...250    | min   |
| V1 | V1-FE1 | Variable speed fan probe selection                         | 34593 | 0 | 38310 | 48    | RW | Word |   | 0...12     | num   |
| V1 | V1-FEt | Setpoint mode                                              | 34594 | 0 | 38310 | 192   | RW | Word |   | 0...1      | flag  |
| V1 | V1-FES | Setpoint                                                   | 34595 | 0 | 38310 | 768   | RW | Word | Y | -58...302  | °C/°F |
| V1 | V1-FEd | Band                                                       | 34596 | 0 | 38310 | 3072  | RW | Word |   | 0.1...50.0 | °C/°F |
| V1 | V1-FEu | Cut-off band                                               | 34597 | 0 | 38310 | 12288 | RW | Word |   | 0.0...25.0 | °C/°F |
| V1 | V1-FEC | Cut-off differential                                       | 34598 | 0 | 38310 | 49152 | RW | Word |   | 0.1...25.0 | °C/°F |
| V1 | V1-FEr | Fan shutoff delay after compressor deactivation            | 34599 | 0 | 38311 | 3     | RW | Word |   | 0...250    | min   |
| V1 | V1-FE2 | Minimum day percentage                                     | 34600 | 0 | 38311 | 12    | RW | Word |   | 0...100    | %     |
| V1 | V1-FE3 | Maximum day percentage with compressor on                  | 34601 | 0 | 38311 | 48    | RW | Word |   | 0...100    | %     |
| V1 | V1-FE4 | Maximum day percentage with compressor off                 | 34602 | 0 | 38311 | 192   | RW | Word |   | 0...100    | %     |
| V1 | V1-FE5 | Minimum night percentage                                   | 34603 | 0 | 38311 | 768   | RW | Word |   | 0...100    | %     |
| V1 | V1-FE6 | Maximum night percentage with compressor on                | 34604 | 0 | 38311 | 3072  | RW | Word |   | 0...100    | %     |
| V1 | V1-FE7 | Maximum night percentage with compressor off               | 34605 | 0 | 38311 | 12288 | RW | Word |   | 0...100    | %     |
| V1 | V1-FE8 | Percentage during defrost                                  | 34606 | 0 | 38311 | 49152 | RW | Word |   | 0...100    | %     |
| V1 | V1-FE9 | Percentage in the event of probe error                     | 34607 | 0 | 38323 | 12    | RW | Word |   | 0...100    | %     |
| V1 | V1-FEA | Maximum pick-up speed                                      | 34608 | 0 | 38323 | 48    | RW | Word |   | 0...100    | %     |
| V1 | V1-FEb | Fan pick-up time                                           | 34609 | 0 | 38323 | 192   | RW | Word |   | 0...250    | s     |
| V1 | V1-FEP | Fan forcing period at pick-up speed                        | 34610 | 0 | 38323 | 768   | RW | Word |   | 0...250    | min   |
| V1 | V1-ra1 | Temperature alarm probe 1 selection                        | 34508 | 0 | 38286 | 768   | RW | Word |   | 0...7      | num   |
| V1 | V1-ra2 | Temperature alarm probe 2 selection                        | 34509 | 0 | 38286 | 3072  | RW | Word |   | 0...7      | num   |

|    |        |                                                                           |       |   |       |       |    |      |   |                |        |
|----|--------|---------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|--------|
| V1 | V1-Att | Alarm mode (absolute or relative)                                         | 34510 | 0 | 38286 | 12288 | RW | Word |   | 0...1          | flag   |
| V1 | V1-AFd | Alarm activation differential                                             | 34511 | 0 | 38286 | 49152 | RW | Word |   | 0.1...25.0     | °C/°F  |
| V1 | V1-HA1 | Maximum alarm 1 threshold                                                 | 34512 | 0 | 38287 | 3     | RW | Word | Y | V1-LA1...302   | °C/°F  |
| V1 | V1-LA1 | Minimum alarm 1 threshold                                                 | 34513 | 0 | 38287 | 12    | RW | Word | Y | -58.0...V1-HA1 | °C/°F  |
| V1 | V1-HA2 | Maximum alarm 2 threshold                                                 | 34514 | 0 | 38287 | 48    | RW | Word | Y | V1-LA2...302   | °C/°F  |
| V1 | V1-LA2 | Minimum alarm 2 threshold                                                 | 34515 | 0 | 38287 | 192   | RW | Word | Y | -58.0...V1-HA2 | °C/°F  |
| V1 | V1-PAO | Temperature alarm exclusion time from power-on                            | 34516 | 0 | 38287 | 768   | RW | Word |   | 0...10         | hours  |
| V1 | V1-dAO | Exclusion time for temperature alarms after a defrost cycle               | 34518 | 0 | 38287 | 3072  | RW | Word |   | 0...250        | min    |
| V1 | V1-OAO | High and low temperature alarms exclusion time after closing the door     | 34517 | 0 | 38287 | 12288 | RW | Word |   | 0...10         | hours  |
| V1 | V1-tdO | Door open alarm exclusion time                                            | 34562 | 0 | 38287 | 49152 | RW | Word |   | 0...250        | min    |
| V1 | V1-tA1 | Probe 1 High/Minimum Alarm Delay                                          | 34519 | 0 | 38288 | 3     | RW | Word |   | 0...250        | min    |
| V1 | V1-tA2 | Probe 2 High/Minimum Alarm Delay                                          | 34520 | 0 | 38288 | 12    | RW | Word |   | 0...250        | min    |
| V1 | V1-dAt | Defrost ended due to timeout alarm signaling                              | 34478 | 0 | 38288 | 48    | RW | Word |   | 0...1          | flag   |
| V1 | V1-EAL | Regulators inhibited by external alarm                                    | 34522 | 0 | 38288 | 192   | RW | Word |   | 0...2          | num    |
| V1 | V1-rA3 | Input used by the two threshold/LKD alarm regulator                       | 34581 | 0 | 38308 | 12288 | RW | Word |   | 0...8          | num    |
| V1 | V1-ALL | Low alarm threshold (warning)                                             | 34582 | 0 | 38308 | 49152 | RW | Word |   | 0.0...V1-ALH   | num    |
| V1 | V1-ALH | High alarm threshold (alarm)                                              | 34583 | 0 | 38309 | 3     | RW | Word |   | V1-ALL...100   | num    |
| V1 | V1-dAL | Alarm leak differential                                                   | 34584 | 0 | 38309 | 12    | RW | Word |   | 0.1...100      | °C/°F  |
| V1 | V1-AL1 | Time probe remains above the low threshold due to leak alarm activation   | 34585 | 0 | 38309 | 48    | RW | Word |   | 0...250        | min    |
| V1 | V1-AL2 | Time probe remains above the high threshold due to leak alarm activation  | 34592 | 0 | 38310 | 12    | RW | Word |   | 0...250        | min    |
| V1 | V1-tP  | Enables alarm acknowledgment with any key                                 | 34563 | 0 | 38288 | 768   | RW | Word |   | 0...1          | flag   |
| V1 | V1-Art | Regular watchdog alarm activation period                                  | 34507 | 0 | 38288 | 3072  | RW | Word |   | 0...250        | min*10 |
| V1 | V1-dSd | Enable light relay from door switch                                       | 34504 | 0 | 38288 | 12288 | RW | Word |   | 0...1          | flag   |
| V1 | V1-dLt | Light relay off delay from door closure                                   | 34505 | 0 | 38288 | 49152 | RW | Word |   | 0...250        | min    |
| V1 | V1-OFL | Enable cold room lights off via key during the delay set in parameter dLt | 34506 | 0 | 38289 | 3     | RW | Word |   | 0...1          | flag   |
| V1 | V1-dOd | Enable utility shutoff upon door switch activation                        | 34521 | 0 | 38289 | 12    | RW | Word |   | 0...3          | num    |

|    |         |                                                                |       |   |       |       |    |      |   |              |        |
|----|---------|----------------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|--------|
| V1 | V1-dOA  | Behavior forced by digital input                               | 34523 | 0 | 38289 | 48    | RW | Word |   | 0...5        | num    |
| V1 | V1-PEA  | Enable forced behavior from door switch and/or external alarm. | 34524 | 0 | 38289 | 192   | RW | Word |   | 0...3        | num    |
| V1 | V1-dCO  | Compressor activation delay from acknowledgment                | 34525 | 0 | 38289 | 768   | RW | Word |   | 0...250      | min    |
| V1 | V1-dFO  | Fan enabling delay from acknowledgment                         | 34526 | 0 | 38289 | 3072  | RW | Word |   | 0...250      | min    |
| V1 | V1-ASb  | Instrument off active light/auxiliary digital input or key     | 34552 | 0 | 38289 | 12288 | RW | Word |   | 0...1        | flag   |
| V1 | V1-L00  | Shared probe                                                   | 34304 | 0 | 38289 | 49152 | RW | Word |   | 0...7        | num    |
| V1 | V1-L01  | Distributed viewing (refers to secondary)                      | 34305 | 0 | 38290 | 3     | RW | Word |   | 0...2        | num    |
| V1 | V1-L02  | Setpoint synchronization                                       | 34306 | 0 | 38290 | 12    | RW | Word |   | 0...1        | flag   |
| V1 | V1-L03  | Defrost synchronization                                        | 34307 | 0 | 38290 | 48    | RW | Word |   | 0...2        | num    |
| V1 | V1-L04  | Inhibit resources at the end of defrost                        | 34308 | 0 | 38290 | 192   | RW | Word |   | 0...1        | flag   |
| V1 | V1-L05  | Stand-by synchronization                                       | 34309 | 0 | 38290 | 768   | RW | Word |   | 0...1        | flag   |
| V1 | V1-L06  | Lights synchronization                                         | 34310 | 0 | 38290 | 3072  | RW | Word |   | 0...1        | flag   |
| V1 | V1-L07  | Reduced set synchronization                                    | 34311 | 0 | 38290 | 12288 | RW | Word |   | 0...1        | flag   |
| V1 | V1-L08  | AUX synchronization                                            | 34312 | 0 | 38290 | 49152 | RW | Word |   | 0...1        | flag   |
| V1 | V1-L09  | Shared saturation probe                                        | 34313 | 0 | 38291 | 3     | RW | Word |   | 0...1        | flag   |
| V1 | V1-L10  | Resource unlocking timeout during synchronized defrosts        | 34564 | 0 | 38291 | 12    | RW | Word |   | 0...250      | min    |
| V1 | V1-L11  | Number of devices connected in Link2                           | 34314 | 0 | 38308 | 48    | RW | Word |   | 0...8        | num    |
| V1 | V1-L12  | Alarm relay sharing in Link2                                   | 34315 | 0 | 38308 | 192   | RW | Word |   | 0...2        | num    |
| V1 | V1-L13  | Link2 serial frame configuration                               | 34575 | 0 | 38307 | 12288 | RW | Word |   | 0...1        | flag   |
| V1 | V1-L14  | Force cool mode                                                | 34591 | 0 | 38310 | 3     | RW | Word |   | 0...1        | flag   |
| V1 | V1-L15  | Shared buzzer and alarm silenced via Link2                     | 34571 | 0 | 38312 | 48    | RW | Word |   | 0...2        | num    |
| V1 | V1-dcS  | Deep cooling setpoint                                          | 34498 | 0 | 38291 | 768   | RW | Word | Y | -58.0...302  | °C/°F  |
| V1 | V1-tdC  | Deep cooling duration                                          | 34499 | 0 | 38291 | 3072  | RW | Word |   | 0...250      | min    |
| V1 | V1-dCC  | Defrost delay after deep cooling                               | 34500 | 0 | 38291 | 12288 | RW | Word |   | 0...250      | min    |
| V1 | V1-ESst | Type of action for the Energy Saving function                  | 34427 | 0 | 38291 | 49152 | RW | Word |   | 0...8        | num    |
| V1 | V1-ESF  | Night mode activation (Energy Saving)                          | 34495 | 0 | 38292 | 3     | RW | Word |   | 0...1        | flag   |
| V1 | V1-Cdt  | Door closing time                                              | 34496 | 0 | 38292 | 12    | RW | Word |   | 0...255      | min*10 |
| V1 | V1-ESo  | Low consumption mode disabling timeout (door switch)           | 34497 | 0 | 38292 | 48    | RW | Word |   | 0...10       | num    |
| V1 | V1-OS1  | Offset on setpoint 1                                           | 34444 | 0 | 38292 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V1 | V1-OS2  | Offset on setpoint 2                                           | 34445 | 0 | 38292 | 768   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V1 | V1-Od1  | Refrigerated cabinets energy saving offset 1                   | 34446 | 0 | 38292 | 3072  | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V1 | V1-Od2  | Refrigerated cabinets energy saving offset 2                   | 34447 | 0 | 38292 | 12288 | RW | Word | Y | -50.0...50.0 | °C/°F  |



|    |        |                                                  |       |   |       |       |    |      |   |                |         |
|----|--------|--------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|---------|
| V1 | V1-dn1 | Differential during energy saving mode 1         | 34435 | 0 | 38292 | 49152 | RW | Word | Y | -58.0...302    | °C/°F   |
| V1 | V1-dn2 | Differential during energy saving mode 2         | 34436 | 0 | 38293 | 3     | RW | Word | Y | -58.0...302    | °C/°F   |
| V1 | V1-EdH | Weekday energy saving start hour                 | 34421 | 0 | 38293 | 12    | RW | Word |   | 0...24         | hours   |
| V1 | V1-Edn | Weekday energy saving start minutes              | 34422 | 0 | 38293 | 48    | RW | Word |   | 0...59         | min     |
| V1 | V1-Edd | Weekday energy saving duration                   | 34423 | 0 | 38293 | 192   | RW | Word |   | 1...72         | hours   |
| V1 | V1-EFH | Weekend/holiday energy saving start hour         | 34424 | 0 | 38293 | 768   | RW | Word |   | 0...24         | hours   |
| V1 | V1-EFn | Weekend/holiday energy saving start minutes      | 34425 | 0 | 38293 | 3072  | RW | Word |   | 0...59         | min     |
| V1 | V1-EFd | Weekend/holiday energy saving duration           | 34426 | 0 | 38293 | 12288 | RW | Word |   | 1...72         | hours   |
| V1 | V1-FH  | Frame heater probe selection                     | 34527 | 0 | 38293 | 49152 | RW | Word |   | 0...9          | num     |
| V1 | V1-FHt | Frame heater period                              | 34529 | 0 | 38294 | 3     | RW | Word |   | 1...250        | s       |
| V1 | V1-FH0 | Frame heater set                                 | 34530 | 0 | 38294 | 12    | RW | Word | Y | -58.0...302    | °C/°F   |
| V1 | V1-FH1 | Frame heater offset                              | 34531 | 0 | 38294 | 48    | RW | Word |   | 0.0...25.0     | °C/°F   |
| V1 | V1-FH2 | Frame heater band                                | 34532 | 0 | 38294 | 192   | RW | Word | Y | -58.0...302    | °C/°F   |
| V1 | V1-FH3 | Frame heater minimum percentage/duty-cycle       | 34533 | 0 | 38294 | 768   | RW | Word |   | 0...100        | %       |
| V1 | V1-FH4 | Frame heater maximum percentage/day duty-cycle   | 34534 | 0 | 38294 | 3072  | RW | Word |   | 0...100        | %       |
| V1 | V1-FH5 | Frame heater maximum percentage/night duty-cycle | 34535 | 0 | 38294 | 12288 | RW | Word |   | 0...100        | %       |
| V1 | V1-FH6 | Frame heater percentage/duty-cycle in defrost    | 34536 | 0 | 38294 | 49152 | RW | Word |   | 0...100        | %       |
| V1 | V1-LOC | Disable terminal                                 | 34539 | 0 | 38295 | 3     | RW | Word |   | 0...1          | flag    |
| V1 | V1-PS1 | Password 1 value                                 | 34540 | 0 | 38295 | 12    | RW | Word |   | 0...250        | num     |
| V1 | V1-PS2 | Password 2 value                                 | 34541 | 0 | 38295 | 48    | RW | Word |   | 0...250        | num     |
| V1 | V1-ndt | Display with decimal point                       | 34542 | 0 | 38295 | 192   | RW | Word |   | 0...1          | flag    |
| V1 | V1-CA1 | Analog input 1 calibration                       | 34348 | 0 | 38295 | 768   | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V1 | V1-CA2 | Analog input 2 calibration                       | 34349 | 0 | 38295 | 3072  | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V1 | V1-CA3 | Analog input 3 calibration                       | 34350 | 0 | 38295 | 12288 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V1 | V1-CA4 | Analog input 4 calibration                       | 34351 | 0 | 38295 | 49152 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V1 | V1-CA5 | Analog input 5 calibration                       | 34352 | 0 | 38296 | 3     | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V1 | V1-CA6 | Analog input 6 calibration                       | 34353 | 0 | 38296 | 12    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V1 | V1-CA7 | Analog input 7 calibration                       | 34354 | 0 | 38296 | 48    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V1 | V1-LdL | Minimum display value                            | 34543 | 0 | 38296 | 192   | RW | Word | Y | -58.0...V1-HdL | °C/°F   |
| V1 | V1-HdL | Maximum display value                            | 34544 | 0 | 38296 | 768   | RW | Word | Y | V1-LdL...302   | °C/°F   |
| V1 | V1-ddL | Display lock mode during a defrost               | 34545 | 0 | 38296 | 3072  | RW | Word |   | 0...2          | num     |

|    |        |                                               |       |   |       |       |    |      |   |          |      |
|----|--------|-----------------------------------------------|-------|---|-------|-------|----|------|---|----------|------|
| V1 | V1-Ldd | Display lock timeout from end of defrost      | 34546 | 0 | 38296 | 12288 | RW | Word |   | 0...250  | min  |
| V1 | V1-dro | Select °C / °F                                | 34547 | 0 | 38296 | 49152 | RW | Word |   | 0...1    | flag |
| V1 | V1-SbP | Pressure unit of measure                      | 34548 | 0 | 38297 | 3     | RW | Word |   | 0...1    | flag |
| V1 | V1-ddd | Select main display value                     | 34549 | 0 | 38297 | 12    | RW | Word |   | 0...8    | num  |
| V1 | V1-ddE | Resource displayed on ECHO                    | 34550 | 0 | 38297 | 48    | RW | Word |   | 0...11   | num  |
| V1 | V1-rPH | Receiver maximum valve opening %              | 34501 | 0 | 38297 | 192   | RW | Word |   | 0...5    | num  |
| V1 | V1-H00 | Select analog input type NTC/PTC              | 34316 | 0 | 38297 | 768   | RW | Word |   | 0...2    | num  |
| V1 | V1-H02 | Function activation time from terminal        | 34551 | 0 | 38297 | 3072  | RW | Word |   | 0...250  | s    |
| V1 | V1-H08 | Stand-by operating mode                       | 34553 | 0 | 38297 | 12288 | RW | Word |   | 0...2    | num  |
| V1 | V1-H11 | Digital input 1 configurability and polarity  | 34319 | 0 | 38297 | 49152 | RW | Word | Y | -19...19 | num  |
| V1 | V1-H12 | Digital input 2 configurability and polarity  | 34320 | 0 | 38298 | 3     | RW | Word | Y | -19...19 | num  |
| V1 | V1-H13 | Digital input 3 configurability and polarity  | 34321 | 0 | 38298 | 12    | RW | Word | Y | -19...19 | num  |
| V1 | V1-H14 | Digital input 4 configurability and polarity  | 34322 | 0 | 38298 | 48    | RW | Word | Y | -19...19 | num  |
| V1 | V1-H15 | Digital input 5 configurability and polarity  | 34323 | 0 | 38298 | 192   | RW | Word | Y | -19...19 | num  |
| V1 | V1-H16 | Digital input 6 configurability and polarity  | 34324 | 0 | 38298 | 768   | RW | Word | Y | -19...19 | num  |
| V1 | V1-H17 | Digital input 7 configurability and polarity  | 34325 | 0 | 38298 | 3072  | RW | Word | Y | -19...19 | num  |
| V1 | V1-H18 | Digital input 8 configurability and polarity  | 34326 | 0 | 38298 | 12288 | RW | Word | Y | -19...19 | num  |
| V1 | V1-i01 | Digital input 9 configurability and polarity  | 34586 | 0 | 38309 | 192   | RW | Word | Y | -19...19 | num  |
| V1 | V1-i02 | Digital input 10 configurability and polarity | 34587 | 0 | 38309 | 768   | RW | Word | Y | -19...19 | num  |
| V1 | V1-dti | Digital inputs 1 and 2 delay unit of measure  | 34335 | 0 | 38298 | 49152 | RW | Word |   | 0...1    | flag |
| V1 | V1-d11 | D.I. 1 activation indication delay time       | 34327 | 0 | 38299 | 3     | RW | Word |   | 0...255  | min  |
| V1 | V1-d12 | D.I. 2 activation indication delay time       | 34328 | 0 | 38299 | 12    | RW | Word |   | 0...255  | min  |
| V1 | V1-d13 | D.I. 3 activation indication delay time       | 34329 | 0 | 38299 | 48    | RW | Word |   | 0...255  | min  |
| V1 | V1-d14 | D.I. 4 activation indication delay time       | 34330 | 0 | 38299 | 192   | RW | Word |   | 0...255  | min  |
| V1 | V1-d15 | D.I. 5 activation indication delay time       | 34331 | 0 | 38299 | 768   | RW | Word |   | 0...255  | min  |
| V1 | V1-d16 | D.I. 6 activation indication delay time       | 34332 | 0 | 38299 | 3072  | RW | Word |   | 0...255  | min  |
| V1 | V1-d17 | D.I. 7 activation indication delay time       | 34333 | 0 | 38299 | 12288 | RW | Word |   | 0...255  | min  |

|    |        |                                           |       |   |       |       |    |      |  |         |     |
|----|--------|-------------------------------------------|-------|---|-------|-------|----|------|--|---------|-----|
| V1 | V1-d18 | D.I. 8 activation indication delay time   | 34334 | 0 | 38299 | 49152 | RW | Word |  | 0...255 | min |
| V1 | V1-01i | D.I. 9 activation indication delay time   | 34588 | 0 | 38309 | 3072  | RW | Word |  | 0...255 | min |
| V1 | V1-02i | D.I. 10 activation indication delay time  | 34589 | 0 | 38309 | 12288 | RW | Word |  | 0...255 | min |
| V1 | V1-H21 | Configurability of digital output 1       | 34356 | 0 | 38300 | 3     | RW | Word |  | 0...19  | num |
| V1 | V1-H22 | Configurability of digital output 2       | 34357 | 0 | 38300 | 12    | RW | Word |  | 0...19  | num |
| V1 | V1-H23 | Configurability of digital output 3       | 34358 | 0 | 38300 | 48    | RW | Word |  | 0...19  | num |
| V1 | V1-H24 | Configurability of digital output 4       | 34359 | 0 | 38300 | 192   | RW | Word |  | 0...19  | num |
| V1 | V1-H25 | Configurability of digital output 5       | 34360 | 0 | 38300 | 768   | RW | Word |  | 0...19  | num |
| V1 | V1-H27 | Configurability of digital output 7       | 34362 | 0 | 38300 | 12288 | RW | Word |  | 0...19  | num |
| V1 | V1-H29 | Enable buzzer                             | 34363 | 0 | 38300 | 49152 | RW | Word |  | 0...1   | num |
| V1 | V1-d01 | Configurability of digital output 8       | 34579 | 0 | 38308 | 768   | RW | Word |  | 0...19  | num |
| V1 | V1-d02 | Configurability of digital output 9       | 34580 | 0 | 38308 | 3072  | RW | Word |  | 0...19  | num |
| V1 | V1-H31 | Configurability of the UP key             | 34554 | 0 | 38301 | 3     | RW | Word |  | 0...9   | num |
| V1 | V1-H32 | Configurability of the DOWN key           | 34555 | 0 | 38301 | 12    | RW | Word |  | 0...9   | num |
| V1 | V1-H33 | Configurability of the ESC key            | 34556 | 0 | 38301 | 48    | RW | Word |  | 0...9   | num |
| V1 | V1-H34 | Configurability of the Free 1 key         | 34557 | 0 | 38301 | 192   | RW | Word |  | 0...9   | num |
| V1 | V1-H35 | Configurability of the Free 2 key         | 34558 | 0 | 38301 | 768   | RW | Word |  | 0...9   | num |
| V1 | V1-H36 | Configurability of the Free 3 key         | 34559 | 0 | 38301 | 3072  | RW | Word |  | 0...9   | num |
| V1 | V1-H37 | Configurability of the Free 4 key         | 34560 | 0 | 38301 | 12288 | RW | Word |  | 0...9   | num |
| V1 | V1-H41 | Configurability of analog input 1         | 34336 | 0 | 38301 | 49152 | RW | Word |  | 0...2   | num |
| V1 | V1-H42 | Configurability of analog input 2         | 34337 | 0 | 38302 | 3     | RW | Word |  | 0...2   | num |
| V1 | V1-H43 | Configurability of analog input 3         | 34338 | 0 | 38302 | 12    | RW | Word |  | 0...2   | num |
| V1 | V1-H44 | Configurability of analog input 4         | 34339 | 0 | 38302 | 48    | RW | Word |  | 0...2   | num |
| V1 | V1-H45 | Configurability of analog input 5         | 34340 | 0 | 38302 | 192   | RW | Word |  | 0...2   | num |
| V1 | V1-H46 | Configurability of analog input 6         | 34341 | 0 | 38302 | 768   | RW | Word |  | 0...2   | num |
| V1 | V1-H47 | Configurability of analog input 7         | 34342 | 0 | 38302 | 3072  | RW | Word |  | 0...2   | num |
| V1 | V1-H48 | Configurability of analog input 8         | 34590 | 0 | 38309 | 49152 | RW | Word |  | 0...2   | num |
| V1 | V1-H50 | Configurability of analog output 1        | 34364 | 0 | 38302 | 12288 | RW | Word |  | 0...1   | num |
| V1 | V1-H51 | Function associated with analog output    | 34365 | 0 | 38302 | 49152 | RW | Word |  | 0...3   | num |
| V1 | V1-H68 | RTC present                               | 34366 | 0 | 38303 | 3     | RW | Word |  | 0...1   | num |
| V1 | V1-H70 | Selection of 1st sensor for virtual probe | 34344 | 0 | 38303 | 12    | RW | Word |  | 0...5   | num |

|    |        |                                                                             |       |   |       |       |    |      |   |                 |       |
|----|--------|-----------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V1 | V1-H71 | Selection of 2nd sensor for virtual probe                                   | 34345 | 0 | 38303 | 48    | RW | Word |   | 0...5           | num   |
| V1 | V1-H72 | Day virtual probe calculation %                                             | 34346 | 0 | 38303 | 192   | RW | Word |   | 0...100         | %     |
| V1 | V1-H73 | Night virtual probe calculation %                                           | 34347 | 0 | 38303 | 768   | RW | Word |   | 0...100         | %     |
| V1 | V1-H74 | Selection of 1st sensor for filtered virtual probe                          | 34576 | 0 | 38307 | 49152 | RW | Word |   | 0...65635       | num   |
| V1 | V1-H75 | Percentage in thousandths of the incoming signal for filtered virtual probe | 34577 | 0 | 38308 | 3     | RW | Word |   | 0...65635       | num   |
| V1 | V1-H76 | Filtered virtual probe offset                                               | 34578 | 0 | 38308 | 12    | RW | Word | Y | 0...65635       | num   |
| V1 | V1-EtY | Selection of electronic expansion valve driver                              | 34561 | 0 | 38303 | 3072  | RW | Word |   | 0...1           | flag  |
| V1 | UL     | Visibility of parameter transfer function (Device -> UNICARD/MFK)           | -     | - | 38306 | 3     | RW | Word |   | 0...3           | num   |
| V1 | dL     | Visibility of parameter transfer function (UNICARD/MFK -> Device)           | -     | - | 38306 | 12    | RW | Word |   | 0...3           | num   |
| V1 | Fr     | Visibility of UNICARD/MFK formatting function                               | -     | - | 38306 | 48    | RW | Word |   | 0...3           | num   |
| V1 | V1-OHP | Selection of oil temperature probe                                          | 34568 | 0 | 38306 | 12288 | RW | Word |   | 0...8           | num   |
| V1 | V1-OSP | Oil heater setpoint                                                         | 34569 | 0 | 38306 | 49152 | RW | Word | Y | V1-OLS...V1-OHS | °C/°F |
| V1 | V1-OHd | Oil heater differential                                                     | 34570 | 0 | 38307 | 3     | RW | Word |   | 0.1...25.0      | °C/°F |
| V1 | V1-OHS | Maximum oil heater setpoint value that can be set                           | 34572 | 0 | 38307 | 48    | RW | Word | Y | V1-OLS...302    | °C/°F |
| V1 | V1-OLS | Minimum oil heater setpoint value that can be set                           | 34573 | 0 | 38307 | 192   | RW | Word | Y | -58.0...V1-OHS  | °C/°F |

**Application 2 parameters**

|    |        |                                              |       |   |       |       |    |      |   |                 |       |
|----|--------|----------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V2 | V2-rE  | Regulation type                              | 34812 | 0 | 38368 | 3     | RW | Word |   | 0...6           | num   |
| V2 | V2-rP1 | Thermostat regulation probe 1                | 34813 | 0 | 38368 | 12    | RW | Word |   | 0...8           | num   |
| V2 | V2-rP2 | Thermostat regulation probe 2                | 34814 | 0 | 38368 | 48    | RW | Word |   | 0...9           | num   |
| V2 | V2-SP1 | Regulation setpoint 1                        | 34815 | 0 | 38368 | 192   | RW | Word | Y | V2-LS1...V2-HS1 | °C/°F |
| V2 | V2-dF1 | Setpoint differential 1                      | 34816 | 0 | 38368 | 768   | RW | Word | Y | -58.0...302     | °C/°F |
| V2 | V2-SP2 | Regulation setpoint 2                        | 34817 | 0 | 38368 | 3072  | RW | Word | Y | V2-LS2...V2-HS2 | °C/°F |
| V2 | V2-dF2 | Setpoint differential 2                      | 34818 | 0 | 38368 | 12288 | RW | Word | Y | -58.0...302     | °C/°F |
| V2 | V2-Stt | Differential management mode                 | 34821 | 0 | 38368 | 49152 | RW | Word |   | 0...1           | flag  |
| V2 | V2-HS1 | Maximum value that can be set for Setpoint 1 | 34824 | 0 | 38369 | 3     | RW | Word | Y | V2-LS1...V2-HdL | °C/°F |
| V2 | V2-LS1 | Minimum value that can be set for Setpoint 1 | 34825 | 0 | 38369 | 12    | RW | Word | Y | V2-LdL...V2-HS1 | °C/°F |
| V2 | V2-HS2 | Maximum value that can be set for Setpoint 2 | 34826 | 0 | 38369 | 48    | RW | Word | Y | V2-LS2...V2-HdL | °C/°F |
| V2 | V2-LS2 | Minimum value that can be set for Setpoint 2 | 34827 | 0 | 38369 | 192   | RW | Word | Y | V2-LdL...V2-HS2 | °C/°F |
| V2 | V2-HC1 | Setpoint 1 operating mode (Heating/Cooling)  | 34822 | 0 | 38369 | 768   | RW | Word |   | 0...1           | flag  |

|    |        |                                                           |       |   |       |       |    |      |   |              |       |
|----|--------|-----------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|-------|
| V2 | V2-HC2 | Setpoint 2 operating mode (Heating/Cooling)               | 34823 | 0 | 38369 | 3072  | RW | Word |   | 0...1        | flag  |
| V2 | V2-CIt | Minimum compressor output activation time                 | 34832 | 0 | 38369 | 49152 | RW | Word |   | 0...250      | min   |
| V2 | V2-CAt | Maximum compressor output activation time                 | 34833 | 0 | 38370 | 3     | RW | Word |   | 0...250      | min   |
| V2 | V2-OnT | Compressor output ON time if regulation probe is faulty   | 34838 | 0 | 38370 | 12    | RW | Word |   | 0...250      | min   |
| V2 | V2-OFt | Compressor output OFF time if regulation probe is faulty  | 34839 | 0 | 38370 | 48    | RW | Word |   | 0...250      | min   |
| V2 | V2-dOn | Compressor output activation delay from call              | 34834 | 0 | 38370 | 192   | RW | Word |   | 0...250      | s     |
| V2 | V2-dOF | Compressor output activation delay from switch-off        | 34835 | 0 | 38370 | 768   | RW | Word |   | 0...250      | min   |
| V2 | V2-dbi | Delay between two consecutive compressor output power-ons | 34836 | 0 | 38370 | 3072  | RW | Word |   | 0...250      | min   |
| V2 | V2-OdO | Output activation delay at startup                        | 34837 | 0 | 38370 | 12288 | RW | Word |   | 0...250      | min   |
| V2 | V2-CFP | Condenser pre-ventilation time in Heat/Cool               | 34921 | 0 | 38371 | 12    | RW | Word |   | 0...255      | s     |
| V2 | V2-CFd | Condenser fan cut-out during defrosting.                  | 34922 | 0 | 38371 | 48    | RW | Word |   | 0...1        | flag  |
| V2 | V2-OF1 | Remote offset                                             | 34843 | 0 | 38371 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F |
| V2 | V2-Pot | Pump down time                                            | 34949 | 0 | 38402 | 192   | RW | Word |   | 0...250      | s     |
| V2 | V2-SS1 | Compressor softstart: advance hotgas valve opening        | 34950 | 0 | 38402 | 768   | RW | Word |   | 0...250      | s     |
| V2 | V2-SS2 | Compressor softstart: delay hotgas valve closing          | 34951 | 0 | 38402 | 3072  | RW | Word |   | 0...250      | s     |
| V2 | V2-dP1 | Select defrost probe 1                                    | 34844 | 0 | 38371 | 768   | RW | Word |   | 0...8        | num   |
| V2 | V2-dP2 | Defrost probe 2 selection                                 | 34845 | 0 | 38371 | 3072  | RW | Word |   | 0...8        | num   |
| V2 | V2-dty | Type of defrost                                           | 34848 | 0 | 38371 | 12288 | RW | Word |   | 0...4        | num   |
| V2 | V2-dFt | Dual evaporator defrost activation mode                   | 34846 | 0 | 38371 | 49152 | RW | Word |   | 0...2        | num   |
| V2 | V2-dit | Interval between defrosts                                 | 34849 | 0 | 38372 | 3     | RW | Word |   | 0...250      | hours |
| V2 | V2-dt1 | Unit of measure for defrost intervals                     | 34852 | 0 | 38372 | 12    | RW | Word |   | 0...2        | num   |
| V2 | V2-dt2 | Unit of measure for defrost duration                      | 34853 | 0 | 38372 | 48    | RW | Word |   | 0...2        | num   |
| V2 | V2-dCt | Defrost interval count mode                               | 34847 | 0 | 38372 | 192   | RW | Word |   | 0...5        | num   |
| V2 | V2-dOH | Defrost cycle activation delay from the call              | 34854 | 0 | 38372 | 768   | RW | Word |   | 0...250      | min   |
| V2 | V2-dE1 | Evaporator 1 defrost maximum duration                     | 34850 | 0 | 38372 | 3072  | RW | Word |   | 1...250      | min   |
| V2 | V2-dE2 | Evaporator 2 defrost maximum duration                     | 34851 | 0 | 38372 | 12288 | RW | Word |   | 1...250      | min   |
| V2 | V2-dS1 | Evaporator 1 defrost end temperature                      | 34856 | 0 | 38372 | 49152 | RW | Word | Y | -58.0...302  | °C/°F |
| V2 | V2-dS2 | Evaporator 2 defrost end temperature                      | 34857 | 0 | 38373 | 3     | RW | Word | Y | -58.0...302  | °C/°F |

|    |        |                                                                 |       |   |       |       |    |      |   |             |       |
|----|--------|-----------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V2 | V2-dSS | Temperature threshold for starting defrost                      | 34855 | 0 | 38373 | 12    | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-dPO | Defrost activation request at power-on                          | 34858 | 0 | 38373 | 48    | RW | Word |   | 0...1       | flag  |
| V2 | V2-tcd | Compressor output activation/deactivation time before a defrost | 34859 | 0 | 38373 | 192   | RW | Word | Y | -60...60    | min   |
| V2 | V2-ndE | minimum defrost duration time                                   | 34860 | 0 | 38373 | 768   | RW | Word |   | 0...250     | min   |
| V2 | V2-PdC | Hot gas extraction time at the end of the defrost               | 34861 | 0 | 38373 | 3072  | RW | Word |   | 0...250     | min   |
| V2 | V2-tPd | Pump down time before defrost start                             | 34863 | 0 | 38373 | 12288 | RW | Word |   | 0...255     | min   |
| V2 | V2-dPH | Regular defrost start hour                                      | 34802 | 0 | 38373 | 49152 | RW | Word |   | 0...24      | hours |
| V2 | V2-dPn | Regular defrost start minutes                                   | 34803 | 0 | 38374 | 3     | RW | Word |   | 0...59      | min   |
| V2 | V2-dPd | Regular defrost interval duration                               | 34804 | 0 | 38374 | 12    | RW | Word |   | 1...7       | day   |
| V2 | V2-Fd1 | 1st weekend/holiday day                                         | 34751 | 0 | 38374 | 48    | RW | Word |   | 0...7       | num   |
| V2 | V2-Fd2 | 2nd weekend/holiday day                                         | 34752 | 0 | 38374 | 192   | RW | Word |   | 0...7       | num   |
| V2 | V2-Edt | Timeout and defrost end temperature specific to each event      | 34753 | 0 | 38374 | 768   | RW | Word |   | 0...1       | flag  |
| V2 | V2-Fdn | Weekday defrost number                                          | 34701 | 0 | 38408 | 3     | RW | Word |   | 0...250     | num   |
| V2 | V2-FFn | Weekend/holiday defrost number                                  | 34702 | 0 | 38408 | 12    | RW | Word |   | 0...250     | num   |
| V2 | V2-PrH | Basin heater pre-activation time                                | 34958 | 0 | 38403 | 3072  | RW | Word |   | 0...255     | min   |
| V2 | V2-d1H | Weekday defrost no. 1 start hour                                | 34754 | 0 | 38374 | 3072  | RW | Word |   | 0...24      | hours |
| V2 | V2-d1n | Weekday defrost no. 1 start minute                              | 34755 | 0 | 38374 | 12288 | RW | Word |   | 0...59      | min   |
| V2 | V2-d1t | 1st weekday defrost duration                                    | 34756 | 0 | 38374 | 49152 | RW | Word |   | 0...250     | min   |
| V2 | V2-d1S | 1st weekday defrost end temperature                             | 34757 | 0 | 38375 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-d2H | Weekday defrost no. 2 start hour                                | 34758 | 0 | 38375 | 12    | RW | Word |   | V2-d1H...24 | hours |
| V2 | V2-d2n | Weekday defrost no. 2 start minutes                             | 34759 | 0 | 38375 | 48    | RW | Word |   | 0...59      | min   |
| V2 | V2-d2t | 2nd weekday defrost duration                                    | 34760 | 0 | 38375 | 192   | RW | Word |   | 0...250     | min   |
| V2 | V2-d2S | 2nd weekday defrost end temperature                             | 34761 | 0 | 38375 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-d3H | Weekday defrost no. 3 start hour                                | 34762 | 0 | 38375 | 3072  | RW | Word |   | V2-d2H...24 | hours |
| V2 | V2-d3n | Weekday defrost no. 3 start minutes                             | 34763 | 0 | 38375 | 12288 | RW | Word |   | 0...59      | min   |
| V2 | V2-d3t | 3rd weekday defrost duration                                    | 34764 | 0 | 38375 | 49152 | RW | Word |   | 0...250     | min   |
| V2 | V2-d3S | 3rd weekday defrost end temperature                             | 34765 | 0 | 38376 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-d4H | Weekday defrost no. 4 start hour                                | 34766 | 0 | 38376 | 12    | RW | Word |   | V2-d3H...24 | hours |
| V2 | V2-d4n | Weekday defrost no. 4 start minutes                             | 34767 | 0 | 38376 | 48    | RW | Word |   | 0...59      | min   |
| V2 | V2-d4t | 4th weekday defrost duration                                    | 34768 | 0 | 38376 | 192   | RW | Word |   | 0...250     | min   |

|    |        |                                             |       |   |       |       |    |      |   |             |       |
|----|--------|---------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V2 | V2-d4S | 4th weekday defrost end temperature         | 34769 | 0 | 38376 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-d5H | Weekday defrost no. 5 start hour            | 34770 | 0 | 38376 | 3072  | RW | Word |   | V2-d4H...24 | hours |
| V2 | V2-d5n | Weekday defrost no. 5 start minutes         | 34771 | 0 | 38376 | 12288 | RW | Word |   | 0...59      | min   |
| V2 | V2-d5t | 5th weekday defrost duration                | 34772 | 0 | 38376 | 49152 | RW | Word |   | 0...250     | min   |
| V2 | V2-d5S | 5th weekday defrost end temperature         | 34773 | 0 | 38377 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-d6H | Weekday defrost no. 6 start hour            | 34774 | 0 | 38377 | 12    | RW | Word |   | V2-d5H...24 | hours |
| V2 | V2-d6n | Weekday defrost no. 6 start minutes         | 34775 | 0 | 38377 | 48    | RW | Word |   | 0...59      | min   |
| V2 | V2-d6t | 6th weekday defrost duration                | 34776 | 0 | 38377 | 192   | RW | Word |   | 0...250     | min   |
| V2 | V2-d6S | 6th weekday defrost end temperature         | 34777 | 0 | 38377 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-F1H | Weekend/holiday defrost no. 1 start hour    | 34778 | 0 | 38377 | 3072  | RW | Word |   | 0...24      | hours |
| V2 | V2-F1n | Weekend/holiday defrost no. 1 start minute  | 34779 | 0 | 38377 | 12288 | RW | Word |   | 0...59      | min   |
| V2 | V2-F1t | 1st weekend/holiday defrost duration        | 34780 | 0 | 38377 | 49152 | RW | Word |   | 0...250     | min   |
| V2 | V2-F1S | 1st weekend/holiday defrost end temperature | 34781 | 0 | 38378 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-F2H | Weekend/holiday defrost no. 2 start hour    | 34782 | 0 | 38378 | 12    | RW | Word |   | V2-F1H...24 | hours |
| V2 | V2-F2n | Weekend/holiday defrost no. 2 start minutes | 34783 | 0 | 38378 | 48    | RW | Word |   | 0...59      | min   |
| V2 | V2-F2t | 2nd weekend/holiday defrost duration        | 34784 | 0 | 38378 | 192   | RW | Word |   | 0...250     | min   |
| V2 | V2-F2S | 2nd weekend/holiday defrost end temperature | 34785 | 0 | 38378 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-F3H | Weekend/holiday defrost no. 3 start hour    | 34786 | 0 | 38378 | 3072  | RW | Word |   | V2-F2H...24 | hours |
| V2 | V2-F3n | Weekend/holiday defrost no. 3 start minutes | 34787 | 0 | 38378 | 12288 | RW | Word |   | 0...59      | min   |
| V2 | V2-F3t | 3rd weekend/holiday defrost duration        | 34788 | 0 | 38378 | 49152 | RW | Word |   | 0...250     | min   |
| V2 | V2-F3S | 3rd weekend/holiday defrost end temperature | 34789 | 0 | 38379 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-F4H | Weekend/holiday defrost no. 4 start hour    | 34790 | 0 | 38379 | 12    | RW | Word |   | V2-F3H...24 | hours |
| V2 | V2-F4n | Weekend/holiday defrost no. 4 start minutes | 34791 | 0 | 38379 | 48    | RW | Word |   | 0...59      | min   |
| V2 | V2-F4t | 4th weekend/holiday defrost duration        | 34792 | 0 | 38379 | 192   | RW | Word |   | 0...250     | min   |
| V2 | V2-F4S | 4th weekend/holiday defrost end temperature | 34793 | 0 | 38379 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-F5H | Weekend/holiday defrost no. 5 start hour    | 34794 | 0 | 38379 | 3072  | RW | Word |   | V2-F4H...24 | hours |
| V2 | V2-F5n | Weekend/holiday defrost no. 5 start minutes | 34795 | 0 | 38379 | 12288 | RW | Word |   | 0...59      | min   |

|    |        |                                                            |       |   |       |       |    |      |   |             |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V2 | V2-F5t | 5th weekend/holiday defrost duration                       | 34796 | 0 | 38379 | 49152 | RW | Word |   | 0...250     | min   |
| V2 | V2-F5S | 5th weekend/holiday defrost end temperature                | 34797 | 0 | 38380 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-F6H | Weekend/holiday defrost no. 6 start hour                   | 34798 | 0 | 38380 | 12    | RW | Word |   | V2-F5H...24 | hours |
| V2 | V2-F6n | Weekend/holiday defrost no. 6 start minutes                | 34799 | 0 | 38380 | 48    | RW | Word |   | 0...59      | min   |
| V2 | V2-F6t | 6th weekend/holiday defrost duration                       | 34800 | 0 | 38380 | 192   | RW | Word |   | 0...250     | min   |
| V2 | V2-F6S | 6th weekend/holiday defrost end temperature                | 34801 | 0 | 38380 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-FP1 | Selection of evaporator fan probe in normal mode           | 34864 | 0 | 38380 | 3072  | RW | Word |   | 0...7       | num   |
| V2 | V2-FP2 | Selection of evaporator fan probe in defrost               | 34865 | 0 | 38380 | 12288 | RW | Word |   | 0...7       | num   |
| V2 | V2-FPt | FSt parameter mode (absolute or relative)                  | 34866 | 0 | 38380 | 49152 | RW | Word |   | 0...1       | flag  |
| V2 | V2-FSt | Evaporator fan disabling temperature                       | 34867 | 0 | 38381 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V2 | V2-FAd | Evaporator fan trigger differential                        | 34868 | 0 | 38381 | 12    | RW | Word |   | 0.1...25.0  | °C/°F |
| V2 | V2-Fdt | Evaporator fan activation delay time after a defrost cycle | 34869 | 0 | 38381 | 48    | RW | Word |   | 0...250     | min   |
| V2 | V2-dt  | Dripping time                                              | 34874 | 0 | 38381 | 192   | RW | Word |   | 0...250     | min   |
| V2 | V2-dFd | Evaporator fan cut-out during defrost                      | 34872 | 0 | 38381 | 768   | RW | Word |   | 0...1       | flag  |
| V2 | V2-FCO | Evaporator fan status with compressor output Off           | 34871 | 0 | 38381 | 3072  | RW | Word |   | 0...4       | num   |
| V2 | V2-Fod | Evaporator fan status with door open                       | 34873 | 0 | 38381 | 12288 | RW | Word |   | 0...1       | flag  |
| V2 | V2-FdC | Evaporator fan shutoff delay after compressor deactivation | 34870 | 0 | 38381 | 49152 | RW | Word |   | 0...250     | min   |
| V2 | V2-FOn | Evaporator fan On time in cyclical regulator mode          | 34875 | 0 | 38382 | 3     | RW | Word |   | 0...250     | min   |
| V2 | V2-FOF | Evaporator fan Off time in cyclical regulator mode         | 34876 | 0 | 38382 | 12    | RW | Word |   | 0...250     | min   |
| V2 | V2-Fnn | Evaporator fan ON time in night mode (duty cycle)          | 34877 | 0 | 38382 | 48    | RW | Word |   | 0...250     | min   |
| V2 | V2-FnF | Evaporator fan OFF time in night mode (duty cycle)         | 34878 | 0 | 38382 | 192   | RW | Word |   | 0...250     | min   |
| V2 | V2-FE1 | Variable speed fan probe selection                         | 34977 | 0 | 38406 | 48    | RW | Word |   | 0...12      | num   |
| V2 | V2-FEt | Setpoint mode                                              | 34978 | 0 | 38406 | 192   | RW | Word |   | 0...1       | flag  |
| V2 | V2-FES | Setpoint                                                   | 34979 | 0 | 38406 | 768   | RW | Word | Y | -58...302   | °C/°F |
| V2 | V2-FEd | Band                                                       | 34980 | 0 | 38406 | 3072  | RW | Word |   | 0.1...50.0  | °C/°F |
| V2 | V2-FEu | Cut-off band                                               | 34981 | 0 | 38406 | 12288 | RW | Word |   | 0.0...25.0  | °C/°F |
| V2 | V2-FEC | Cut-off differential                                       | 34982 | 0 | 38406 | 49152 | RW | Word |   | 0.1...25.0  | °C/°F |
| V2 | V2-FEr | Fan shutoff delay after compressor deactivation            | 34983 | 0 | 38407 | 3     | RW | Word |   | 0...250     | min   |



|    |        |                                                                       |       |   |       |       |    |      |   |                |       |
|----|--------|-----------------------------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|-------|
| V2 | V2-FE2 | Minimum day percentage                                                | 34984 | 0 | 38407 | 12    | RW | Word |   | 0...100        | %     |
| V2 | V2-FE3 | Maximum day percentage with compressor on                             | 34985 | 0 | 38407 | 48    | RW | Word |   | 0...100        | %     |
| V2 | V2-FE4 | Maximum day percentage with compressor off                            | 34986 | 0 | 38407 | 192   | RW | Word |   | 0...100        | %     |
| V2 | V2-FE5 | Minimum night percentage                                              | 34987 | 0 | 38407 | 768   | RW | Word |   | 0...100        | %     |
| V2 | V2-FE6 | Maximum night percentage with compressor on                           | 34988 | 0 | 38407 | 3072  | RW | Word |   | 0...100        | %     |
| V2 | V2-FE7 | Maximum night percentage with compressor off                          | 34989 | 0 | 38407 | 12288 | RW | Word |   | 0...100        | %     |
| V2 | V2-FE8 | Percentage during defrost                                             | 34990 | 0 | 38407 | 49152 | RW | Word |   | 0...100        | %     |
| V2 | V2-FE9 | Percentage in the event of probe error                                | 34991 | 0 | 38419 | 12    | RW | Word |   | 0...100        | %     |
| V2 | V2-FEA | Maximum pick-up speed                                                 | 34992 | 0 | 38419 | 48    | RW | Word |   | 0...100        | %     |
| V2 | V2-FEb | Fan pick-up time                                                      | 34993 | 0 | 38419 | 192   | RW | Word |   | 0...250        | s     |
| V2 | V2-FEP | Fan forcing period at pick-up speed                                   | 34994 | 0 | 38419 | 768   | RW | Word |   | 0...250        | min   |
| V2 | V2-rA1 | Temperature alarm probe 1 selection                                   | 34892 | 0 | 38382 | 768   | RW | Word |   | 0...7          | num   |
| V2 | V2-rA2 | Temperature alarm probe 2 selection                                   | 34893 | 0 | 38382 | 3072  | RW | Word |   | 0...7          | num   |
| V2 | V2-Att | Alarm mode (absolute or relative)                                     | 34894 | 0 | 38382 | 12288 | RW | Word |   | 0...1          | flag  |
| V2 | V2-AFd | Alarm activation differential                                         | 34895 | 0 | 38382 | 49152 | RW | Word |   | 0.1...25.0     | °C/°F |
| V2 | V2-HA1 | Maximum alarm 1 threshold                                             | 34896 | 0 | 38383 | 3     | RW | Word | Y | V2-LA1...302   | °C/°F |
| V2 | V2-LA1 | Minimum alarm 1 threshold                                             | 34897 | 0 | 38383 | 12    | RW | Word | Y | -58.0...V2-HA1 | °C/°F |
| V2 | V2-HA2 | Maximum alarm 2 threshold                                             | 34898 | 0 | 38383 | 48    | RW | Word | Y | V2-LA2...302   | °C/°F |
| V2 | V2-LA2 | Minimum alarm 2 threshold                                             | 34899 | 0 | 38383 | 192   | RW | Word | Y | -58.0...V2-HA2 | °C/°F |
| V2 | V2-PAO | Temperature alarm exclusion time from power-on                        | 34900 | 0 | 38383 | 768   | RW | Word |   | 0...10         | hours |
| V2 | V2-dAO | Exclusion time for temperature alarms after a defrost cycle           | 34902 | 0 | 38383 | 3072  | RW | Word |   | 0...250        | min   |
| V2 | V2-OAO | High and low temperature alarms exclusion time after closing the door | 34901 | 0 | 38383 | 12288 | RW | Word |   | 0...10         | hours |
| V2 | V2-tdO | Door open alarm exclusion time                                        | 34946 | 0 | 38383 | 49152 | RW | Word |   | 0...250        | min   |
| V2 | V2-tA1 | Probe 1 High/Minimum Alarm Delay                                      | 34903 | 0 | 38384 | 3     | RW | Word |   | 0...250        | min   |
| V2 | V2-tA2 | Probe 2 High/Minimum Alarm Delay                                      | 34904 | 0 | 38384 | 12    | RW | Word |   | 0...250        | min   |
| V2 | V2-dAt | Defrost ended due to timeout alarm signaling                          | 34862 | 0 | 38384 | 48    | RW | Word |   | 0...1          | flag  |
| V2 | V2-EAL | Regulators inhibited by external alarm                                | 34906 | 0 | 38384 | 192   | RW | Word |   | 0...2          | num   |

|    |        |                                                                           |       |   |       |       |    |      |  |              |        |
|----|--------|---------------------------------------------------------------------------|-------|---|-------|-------|----|------|--|--------------|--------|
| V2 | V2-rA3 | Input used by the two threshold/LKD alarm regulator                       | 34965 | 0 | 38404 | 12288 | RW | Word |  | 0...8        | num    |
| V2 | V2-ALL | Low alarm threshold (warning)                                             | 34966 | 0 | 38404 | 49152 | RW | Word |  | 0.0...V2-ALH | num    |
| V2 | V2-ALH | High alarm threshold (alarm)                                              | 34967 | 0 | 38405 | 3     | RW | Word |  | V2-ALL...100 | num    |
| V2 | V2-dAL | Alarm leak differential                                                   | 34968 | 0 | 38405 | 12    | RW | Word |  | 0.1...100    | °C/°F  |
| V2 | V2-AL1 | Time probe remains above the low threshold due to leak alarm activation   | 34969 | 0 | 38405 | 48    | RW | Word |  | 0...250      | min    |
| V2 | V2-AL2 | Time probe remains above the high threshold due to leak alarm activation  | 34976 | 0 | 38406 | 12    | RW | Word |  | 0...250      | min    |
| V2 | V2-tP  | Enables alarm acknowledgment with any key                                 | 34947 | 0 | 38384 | 768   | RW | Word |  | 0...1        | flag   |
| V2 | V2-Art | Regular watchdog alarm activation period                                  | 34891 | 0 | 38384 | 3072  | RW | Word |  | 0...250      | min*10 |
| V2 | V2-dSd | Enable light relay from door switch                                       | 34888 | 0 | 38384 | 12288 | RW | Word |  | 0...1        | flag   |
| V2 | V2-dLt | Light relay off delay from door closure                                   | 34889 | 0 | 38384 | 49152 | RW | Word |  | 0...250      | min    |
| V2 | V2-OFL | Enable cold room lights off via key during the delay set in parameter dLt | 34890 | 0 | 38385 | 3     | RW | Word |  | 0...1        | flag   |
| V2 | V2-dOd | Enable utility shutoff upon door switch activation                        | 34905 | 0 | 38385 | 12    | RW | Word |  | 0...3        | num    |
| V2 | V2-dOA | Behavior forced by digital input                                          | 34907 | 0 | 38385 | 48    | RW | Word |  | 0...5        | num    |
| V2 | V2-PEA | Enable forced behavior from door switch and/or external alarm.            | 34908 | 0 | 38385 | 192   | RW | Word |  | 0...3        | num    |
| V2 | V2-dCO | Compressor activation delay from acknowledgment                           | 34909 | 0 | 38385 | 768   | RW | Word |  | 0...250      | min    |
| V2 | V2-dFO | Fan enabling delay from acknowledgment                                    | 34910 | 0 | 38385 | 3072  | RW | Word |  | 0...250      | min    |
| V2 | V2-ASb | Instrument off active light/auxiliary digital input or key                | 34936 | 0 | 38385 | 12288 | RW | Word |  | 0...1        | flag   |
| V2 | V2-L00 | Shared probe                                                              | 34688 | 0 | 38385 | 49152 | RW | Word |  | 0...7        | num    |
| V2 | V2-L01 | Distributed viewing (refers to secondary)                                 | 34689 | 0 | 38386 | 3     | RW | Word |  | 0...2        | num    |
| V2 | V2-L02 | Setpoint synchronization                                                  | 34690 | 0 | 38386 | 12    | RW | Word |  | 0...1        | flag   |
| V2 | V2-L03 | Defrost synchronization                                                   | 34691 | 0 | 38386 | 48    | RW | Word |  | 0...2        | num    |
| V2 | V2-L04 | Inhibit resources at the end of defrost                                   | 34692 | 0 | 38386 | 192   | RW | Word |  | 0...1        | flag   |
| V2 | V2-L05 | Stand-by synchronization                                                  | 34693 | 0 | 38386 | 768   | RW | Word |  | 0...1        | flag   |
| V2 | V2-L06 | Lights synchronization                                                    | 34694 | 0 | 38386 | 3072  | RW | Word |  | 0...1        | flag   |
| V2 | V2-L07 | Reduced set synchronization                                               | 34695 | 0 | 38386 | 12288 | RW | Word |  | 0...1        | flag   |
| V2 | V2-L08 | AUX synchronization                                                       | 34696 | 0 | 38386 | 49152 | RW | Word |  | 0...1        | flag   |
| V2 | V2-L09 | Shared saturation probe                                                   | 34697 | 0 | 38387 | 3     | RW | Word |  | 0...1        | flag   |

|    |         |                                                         |       |   |       |       |    |      |   |              |        |
|----|---------|---------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|--------|
| V2 | V2-L10  | Resource unlocking timeout during synchronized defrosts | 34948 | 0 | 38387 | 12    | RW | Word |   | 0...250      | min    |
| V2 | V2-L11  | Number of devices connected in Link2                    | 34698 | 0 | 38404 | 48    | RW | Word |   | 0...8        | num    |
| V2 | V2-L12  | Alarm relay sharing in Link2                            | 34699 | 0 | 38404 | 192   | RW | Word |   | 0...2        | num    |
| V2 | V2-L13  | Link2 serial frame configuration                        | 34959 | 0 | 38403 | 12288 | RW | Word |   | 0...1        | flag   |
| V2 | V2-L14  | Force cool mode                                         | 34975 | 0 | 38406 | 3     | RW | Word |   | 0...1        | flag   |
| V2 | V2-L15  | Shared buzzer and alarm silenced via Link2              | 34955 | 0 | 38408 | 48    | RW | Word |   | 0...2        | num    |
| V2 | V2-dcS  | Deep cooling setpoint                                   | 34882 | 0 | 38387 | 768   | RW | Word | Y | -58.0...302  | °C/°F  |
| V2 | V2-tdC  | Deep cooling duration                                   | 34883 | 0 | 38387 | 3072  | RW | Word |   | 0...250      | min    |
| V2 | V2-dCC  | Defrost delay after deep cooling                        | 34884 | 0 | 38387 | 12288 | RW | Word |   | 0...250      | min    |
| V2 | V2-ESst | Type of action for the Energy Saving function           | 34811 | 0 | 38387 | 49152 | RW | Word |   | 0...8        | num    |
| V2 | V2-ESF  | Night mode activation (Energy Saving)                   | 34879 | 0 | 38388 | 3     | RW | Word |   | 0...1        | flag   |
| V2 | V2-Cdt  | Door closing time                                       | 34880 | 0 | 38388 | 12    | RW | Word |   | 0...255      | min*10 |
| V2 | V2-ESo  | Low consumption mode disabling timeout (door switch)    | 34881 | 0 | 38388 | 48    | RW | Word |   | 0...10       | num    |
| V2 | V2-OS1  | Offset on setpoint 1                                    | 34828 | 0 | 38388 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V2 | V2-OS2  | Offset on setpoint 2                                    | 34829 | 0 | 38388 | 768   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V2 | V2-Od1  | Refrigerated cabinets energy saving offset 1            | 34830 | 0 | 38388 | 3072  | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V2 | V2-Od2  | Refrigerated cabinets energy saving offset 2            | 34831 | 0 | 38388 | 12288 | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V2 | V2-dn1  | Differential during energy saving mode 1                | 34819 | 0 | 38388 | 49152 | RW | Word | Y | -58.0...302  | °C/°F  |
| V2 | V2-dn2  | Differential during energy saving mode 2                | 34820 | 0 | 38389 | 3     | RW | Word | Y | -58.0...302  | °C/°F  |
| V2 | V2-EdH  | Weekday energy saving start hour                        | 34805 | 0 | 38389 | 12    | RW | Word |   | 0...24       | hours  |
| V2 | V2-Edn  | Weekday energy saving start minutes                     | 34806 | 0 | 38389 | 48    | RW | Word |   | 0...59       | min    |
| V2 | V2-Edd  | Weekday energy saving duration                          | 34807 | 0 | 38389 | 192   | RW | Word |   | 1...72       | hours  |
| V2 | V2-EFH  | Weekend/holiday energy saving start hour                | 34808 | 0 | 38389 | 768   | RW | Word |   | 0...24       | hours  |
| V2 | V2-EFn  | Weekend/holiday energy saving start minutes             | 34809 | 0 | 38389 | 3072  | RW | Word |   | 0...59       | min    |
| V2 | V2-EFd  | Weekend/holiday energy saving duration                  | 34810 | 0 | 38389 | 12288 | RW | Word |   | 1...72       | hours  |
| V2 | V2-FH   | Frame heater probe selection                            | 34911 | 0 | 38389 | 49152 | RW | Word |   | 0...9        | num    |
| V2 | V2-FHt  | Frame heater period                                     | 34913 | 0 | 38390 | 3     | RW | Word |   | 1...250      | s      |
| V2 | V2-FH0  | Frame heater set                                        | 34914 | 0 | 38390 | 12    | RW | Word | Y | -58.0...302  | °C/°F  |
| V2 | V2-FH1  | Frame heater offset                                     | 34915 | 0 | 38390 | 48    | RW | Word |   | 0.0...25.0   | °C/°F  |
| V2 | V2-FH2  | Frame heater band                                       | 34916 | 0 | 38390 | 192   | RW | Word | Y | -58.0...302  | °C/°F  |
| V2 | V2-FH3  | Frame heater minimum percentage/duty-cycle              | 34917 | 0 | 38390 | 768   | RW | Word |   | 0...100      | %      |
| V2 | V2-FH4  | Frame heater maximum percentage/day duty-cycle          | 34918 | 0 | 38390 | 3072  | RW | Word |   | 0...100      | %      |

|    |        |                                                  |       |   |       |       |    |      |   |                |         |
|----|--------|--------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|---------|
| V2 | V2-FH5 | Frame heater maximum percentage/night duty-cycle | 34919 | 0 | 38390 | 12288 | RW | Word |   | 0...100        | %       |
| V2 | V2-FH6 | Frame heater percentage/duty-cycle in defrost    | 34920 | 0 | 38390 | 49152 | RW | Word |   | 0...100        | %       |
| V2 | V2-LOC | Disable terminal                                 | 34923 | 0 | 38391 | 3     | RW | Word |   | 0...1          | flag    |
| V2 | V2-PS1 | Password 1 value                                 | 34924 | 0 | 38391 | 12    | RW | Word |   | 0...250        | num     |
| V2 | V2-PS2 | Password 2 value                                 | 34925 | 0 | 38391 | 48    | RW | Word |   | 0...250        | num     |
| V2 | V2-ndt | Display with decimal point                       | 34926 | 0 | 38391 | 192   | RW | Word |   | 0...1          | flag    |
| V2 | V2-CA1 | Analog input 1 calibration                       | 34732 | 0 | 38391 | 768   | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V2 | V2-CA2 | Analog input 2 calibration                       | 34733 | 0 | 38391 | 3072  | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V2 | V2-CA3 | Analog input 3 calibration                       | 34734 | 0 | 38391 | 12288 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V2 | V2-CA4 | Analog input 4 calibration                       | 34735 | 0 | 38391 | 49152 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V2 | V2-CA5 | Analog input 5 calibration                       | 34736 | 0 | 38392 | 3     | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V2 | V2-CA6 | Analog input 6 calibration                       | 34737 | 0 | 38392 | 12    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V2 | V2-CA7 | Analog input 7 calibration                       | 34738 | 0 | 38392 | 48    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V2 | V2-LdL | Minimum display value                            | 34927 | 0 | 38392 | 192   | RW | Word | Y | -58.0...V2-HdL | °C/°F   |
| V2 | V2-HdL | Maximum display value                            | 34928 | 0 | 38392 | 768   | RW | Word | Y | V2-LdL...302   | °C/°F   |
| V2 | V2-ddL | Display lock mode during a defrost               | 34929 | 0 | 38392 | 3072  | RW | Word |   | 0...2          | num     |
| V2 | V2-Ldd | Display lock timeout from end of defrost         | 34930 | 0 | 38392 | 12288 | RW | Word |   | 0...250        | min     |
| V2 | V2-dro | Select °C / °F                                   | 34931 | 0 | 38392 | 49152 | RW | Word |   | 0...1          | flag    |
| V2 | V2-SbP | Pressure unit of measure                         | 34932 | 0 | 38393 | 3     | RW | Word |   | 0...1          | flag    |
| V2 | V2-ddd | Select main display value                        | 34933 | 0 | 38393 | 12    | RW | Word |   | 0...8          | num     |
| V2 | V2-ddE | Resource displayed on ECHO                       | 34934 | 0 | 38393 | 48    | RW | Word |   | 0...11         | num     |
| V2 | V2-rPH | Receiver maximum valve opening %                 | 34885 | 0 | 38393 | 192   | RW | Word |   | 0...5          | num     |
| V2 | V2-H00 | Select analog input type NTC/PTC                 | 34700 | 0 | 38393 | 768   | RW | Word |   | 0...2          | num     |
| V2 | V2-H02 | Function activation time from terminal           | 34935 | 0 | 38393 | 3072  | RW | Word |   | 0...250        | s       |
| V2 | V2-H08 | Stand-by operating mode                          | 34937 | 0 | 38393 | 12288 | RW | Word |   | 0...2          | num     |
| V2 | V2-H11 | Digital input 1 configurability and polarity     | 34703 | 0 | 38393 | 49152 | RW | Word | Y | -19...19       | num     |
| V2 | V2-H12 | Digital input 2 configurability and polarity     | 34704 | 0 | 38394 | 3     | RW | Word | Y | -19...19       | num     |
| V2 | V2-H13 | Digital input 3 configurability and polarity     | 34705 | 0 | 38394 | 12    | RW | Word | Y | -19...19       | num     |
| V2 | V2-H14 | Digital input 4 configurability and polarity     | 34706 | 0 | 38394 | 48    | RW | Word | Y | -19...19       | num     |
| V2 | V2-H15 | Digital input 5 configurability and polarity     | 34707 | 0 | 38394 | 192   | RW | Word | Y | -19...19       | num     |

|    |        |                                               |       |   |       |       |    |      |   |          |      |
|----|--------|-----------------------------------------------|-------|---|-------|-------|----|------|---|----------|------|
| V2 | V2-H16 | Digital input 6 configurability and polarity  | 34708 | 0 | 38394 | 768   | RW | Word | Y | -19...19 | num  |
| V2 | V2-H17 | Digital input 7 configurability and polarity  | 34709 | 0 | 38394 | 3072  | RW | Word | Y | -19...19 | num  |
| V2 | V2-H18 | Digital input 8 configurability and polarity  | 34710 | 0 | 38394 | 12288 | RW | Word | Y | -19...19 | num  |
| V2 | V2-i01 | Digital input 9 configurability and polarity  | 34970 | 0 | 38405 | 192   | RW | Word | Y | -19...19 | num  |
| V2 | V2-i02 | Digital input 10 configurability and polarity | 34971 | 0 | 38405 | 768   | RW | Word | Y | -19...19 | num  |
| V2 | V2-dti | Digital inputs 1 and 2 delay unit of measure  | 34719 | 0 | 38394 | 49152 | RW | Word |   | 0...1    | flag |
| V2 | V2-d11 | D.I. 1 activation indication delay time       | 34711 | 0 | 38395 | 3     | RW | Word |   | 0...255  | min  |
| V2 | V2-d12 | D.I. 2 activation indication delay time       | 34712 | 0 | 38395 | 12    | RW | Word |   | 0...255  | min  |
| V2 | V2-d13 | D.I. 3 activation indication delay time       | 34713 | 0 | 38395 | 48    | RW | Word |   | 0...255  | min  |
| V2 | V2-d14 | D.I. 4 activation indication delay time       | 34714 | 0 | 38395 | 192   | RW | Word |   | 0...255  | min  |
| V2 | V2-d15 | D.I. 5 activation indication delay time       | 34715 | 0 | 38395 | 768   | RW | Word |   | 0...255  | min  |
| V2 | V2-d16 | D.I. 6 activation indication delay time       | 34716 | 0 | 38395 | 3072  | RW | Word |   | 0...255  | min  |
| V2 | V2-d17 | D.I. 7 activation indication delay time       | 34717 | 0 | 38395 | 12288 | RW | Word |   | 0...255  | min  |
| V2 | V2-d18 | D.I. 8 activation indication delay time       | 34718 | 0 | 38395 | 49152 | RW | Word |   | 0...255  | min  |
| V2 | V2-01i | D.I. 9 activation indication delay time       | 34972 | 0 | 38405 | 3072  | RW | Word |   | 0...255  | min  |
| V2 | V2-02i | D.I. 10 activation indication delay time      | 34973 | 0 | 38405 | 12288 | RW | Word |   | 0...255  | min  |
| V2 | V2-H21 | Configurability of digital output 1           | 34740 | 0 | 38396 | 3     | RW | Word |   | 0...19   | num  |
| V2 | V2-H22 | Configurability of digital output 2           | 34741 | 0 | 38396 | 12    | RW | Word |   | 0...19   | num  |
| V2 | V2-H23 | Configurability of digital output 3           | 34742 | 0 | 38396 | 48    | RW | Word |   | 0...19   | num  |
| V2 | V2-H24 | Configurability of digital output 4           | 34743 | 0 | 38396 | 192   | RW | Word |   | 0...19   | num  |
| V2 | V2-H25 | Configurability of digital output 5           | 34744 | 0 | 38396 | 768   | RW | Word |   | 0...19   | num  |
| V2 | V2-H27 | Configurability of digital output 7           | 34746 | 0 | 38396 | 12288 | RW | Word |   | 0...19   | num  |
| V2 | V2-H29 | Enable buzzer                                 | 34747 | 0 | 38396 | 49152 | RW | Word |   | 0...1    | num  |
| V2 | V2-d01 | Configurability of digital output 8           | 34963 | 0 | 38404 | 768   | RW | Word |   | 0...19   | num  |
| V2 | V2-d02 | Configurability of digital output 9           | 34964 | 0 | 38404 | 3072  | RW | Word |   | 0...19   | num  |
| V2 | V2-H31 | Configurability of the UP key                 | 34938 | 0 | 38397 | 3     | RW | Word |   | 0...9    | num  |
| V2 | V2-H32 | Configurability of the DOWN key               | 34939 | 0 | 38397 | 12    | RW | Word |   | 0...9    | num  |
| V2 | V2-H33 | Configurability of the ESC key                | 34940 | 0 | 38397 | 48    | RW | Word |   | 0...9    | num  |
| V2 | V2-H34 | Configurability of the Free 1 key             | 34941 | 0 | 38397 | 192   | RW | Word |   | 0...9    | num  |

|    |        |                                                                             |       |   |       |       |    |      |   |                 |       |
|----|--------|-----------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V2 | V2-H35 | Configurability of the Free 2 key                                           | 34942 | 0 | 38397 | 768   | RW | Word |   | 0...9           | num   |
| V2 | V2-H36 | Configurability of the Free 3 key                                           | 34943 | 0 | 38397 | 3072  | RW | Word |   | 0...9           | num   |
| V2 | V2-H37 | Configurability of the Free 4 key                                           | 34944 | 0 | 38397 | 12288 | RW | Word |   | 0...9           | num   |
| V2 | V2-H41 | Configurability of analog input 1                                           | 34720 | 0 | 38397 | 49152 | RW | Word |   | 0...2           | num   |
| V2 | V2-H42 | Configurability of analog input 2                                           | 34721 | 0 | 38398 | 3     | RW | Word |   | 0...2           | num   |
| V2 | V2-H43 | Configurability of analog input 3                                           | 34722 | 0 | 38398 | 12    | RW | Word |   | 0...2           | num   |
| V2 | V2-H44 | Configurability of analog input 4                                           | 34723 | 0 | 38398 | 48    | RW | Word |   | 0...2           | num   |
| V2 | V2-H45 | Configurability of analog input 5                                           | 34724 | 0 | 38398 | 192   | RW | Word |   | 0...2           | num   |
| V2 | V2-H46 | Configurability of analog input 6                                           | 34725 | 0 | 38398 | 768   | RW | Word |   | 0...2           | num   |
| V2 | V2-H47 | Configurability of analog input 7                                           | 34726 | 0 | 38398 | 3072  | RW | Word |   | 0...2           | num   |
| V2 | V2-H48 | Configurability of analog input 8                                           | 34974 | 0 | 38405 | 49152 | RW | Word |   | 0...2           | num   |
| V2 | V2-H50 | Configurability of analog output 1                                          | 34748 | 0 | 38398 | 12288 | RW | Word |   | 0...1           | num   |
| V2 | V2-H51 | Function associated with analog output                                      | 34749 | 0 | 38398 | 49152 | RW | Word |   | 0...3           | num   |
| V2 | V2-H68 | RTC present                                                                 | 34750 | 0 | 38399 | 3     | RW | Word |   | 0...1           | num   |
| V2 | V2-H70 | Selection of 1st sensor for virtual probe                                   | 34728 | 0 | 38399 | 12    | RW | Word |   | 0...5           | num   |
| V2 | V2-H71 | Selection of 2nd sensor for virtual probe                                   | 34729 | 0 | 38399 | 48    | RW | Word |   | 0...5           | num   |
| V2 | V2-H72 | Day virtual probe calculation %                                             | 34730 | 0 | 38399 | 192   | RW | Word |   | 0...100         | %     |
| V2 | V2-H73 | Night virtual probe calculation %                                           | 34731 | 0 | 38399 | 768   | RW | Word |   | 0...100         | %     |
| V2 | V2-H74 | Selection of 1st sensor for filtered virtual probe                          | 34960 | 0 | 38403 | 49152 | RW | Word |   | 0...65635       | num   |
| V2 | V2-H75 | Percentage in thousandths of the incoming signal for filtered virtual probe | 34961 | 0 | 38404 | 3     | RW | Word |   | 0...65635       | num   |
| V2 | V2-H76 | Filtered virtual probe offset                                               | 34962 | 0 | 38404 | 12    | RW | Word |   | 0...65635       | num   |
| V2 | V2-EtY | Selection of electronic expansion valve driver                              | 34945 | 0 | 38399 | 3072  | RW | Word |   | 0...1           | flag  |
| V2 | UL     | Visibility of parameter transfer function (Device -> UNICARD/MFK)           | -     | - | 38402 | 3     | RW | Word |   | 0...3           | num   |
| V2 | dL     | Visibility of parameter transfer function (UNICARD/MFK -> Device)           | -     | - | 38402 | 12    | RW | Word |   | 0...3           | num   |
| V2 | Fr     | Visibility of UNICARD/MFK formatting function                               | -     | - | 38402 | 48    | RW | Word |   | 0...3           | num   |
| V2 | V2-OHP | Selection of oil temperature probe                                          | 34952 | 0 | 38402 | 12288 | RW | Word |   | 0...8           | num   |
| V2 | V2-OSP | Oil heater setpoint                                                         | 34953 | 0 | 38402 | 49152 | RW | Word | Y | V2-OLS...V2-OHS | °C/°F |
| V2 | V2-OHd | Oil heater differential                                                     | 34954 | 0 | 38403 | 3     | RW | Word |   | 0.1...25.0      | °C/°F |

|    |        |                                                   |       |   |       |     |    |      |   |                |       |
|----|--------|---------------------------------------------------|-------|---|-------|-----|----|------|---|----------------|-------|
| V2 | V2-OHS | Maximum oil heater setpoint value that can be set | 34956 | 0 | 38403 | 48  | RW | Word | Y | V2-OLS...302   | °C/°F |
| V2 | V2-OLS | Minimum oil heater setpoint value that can be set | 34957 | 0 | 38403 | 192 | RW | Word | Y | -58.0...V2-OHS | °C/°F |

| Application 3 parameters |        |                                                           |       |   |       |       |    |      |   |                 |       |
|--------------------------|--------|-----------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V3                       | V3-rE  | Regulation type                                           | 35196 | 0 | 38464 | 3     | RW | Word |   | 0...6           | num   |
| V3                       | V3-rP1 | Thermostat regulation probe 1                             | 35197 | 0 | 38464 | 12    | RW | Word |   | 0...8           | num   |
| V3                       | V3-rP2 | Thermostat regulation probe 2                             | 35198 | 0 | 38464 | 48    | RW | Word |   | 0...9           | num   |
| V3                       | V3-SP1 | Regulation setpoint 1                                     | 35199 | 0 | 38464 | 192   | RW | Word | Y | V3-LS1...V3-HS1 | °C/°F |
| V3                       | V3-dF1 | Setpoint differential 1                                   | 35200 | 0 | 38464 | 768   | RW | Word | Y | -58.0...302     | °C/°F |
| V3                       | V3-SP2 | Regulation setpoint 2                                     | 35201 | 0 | 38464 | 3072  | RW | Word | Y | V3-LS2...V3-HS2 | °C/°F |
| V3                       | V3-dF2 | Setpoint differential 2                                   | 35202 | 0 | 38464 | 12288 | RW | Word | Y | -58.0...302     | °C/°F |
| V3                       | V3-Stt | Differential management mode                              | 35205 | 0 | 38464 | 49152 | RW | Word |   | 0...1           | flag  |
| V3                       | V3-HS1 | Maximum value that can be set for Setpoint 1              | 35208 | 0 | 38465 | 3     | RW | Word | Y | V3-LS1...V3-HdL | °C/°F |
| V3                       | V3-LS1 | Minimum value that can be set for Setpoint 1              | 35209 | 0 | 38465 | 12    | RW | Word | Y | V3-LdL...V3-HS1 | °C/°F |
| V3                       | V3-HS2 | Maximum value that can be set for Setpoint 2              | 35210 | 0 | 38465 | 48    | RW | Word | Y | V3-LS2...V3-HdL | °C/°F |
| V3                       | V3-LS2 | Minimum value that can be set for Setpoint 2              | 35211 | 0 | 38465 | 192   | RW | Word | Y | V3-LdL...V3-HS2 | °C/°F |
| V3                       | V3-HC1 | Setpoint 1 operating mode (Heating/Cooling)               | 35206 | 0 | 38465 | 768   | RW | Word |   | 0...1           | flag  |
| V3                       | V3-HC2 | Setpoint 2 operating mode (Heating/Cooling)               | 35207 | 0 | 38465 | 3072  | RW | Word |   | 0...1           | flag  |
| V3                       | V3-CIt | Minimum compressor output activation time                 | 35216 | 0 | 38465 | 49152 | RW | Word |   | 0...250         | min   |
| V3                       | V3-CAt | Maximum compressor output activation time                 | 35217 | 0 | 38466 | 3     | RW | Word |   | 0...250         | min   |
| V3                       | V3-Ont | Compressor output ON time if regulation probe is faulty   | 35222 | 0 | 38466 | 12    | RW | Word |   | 0...250         | min   |
| V3                       | V3-OFt | Compressor output OFF time if regulation probe is faulty  | 35223 | 0 | 38466 | 48    | RW | Word |   | 0...250         | min   |
| V3                       | V3-dOn | Compressor output activation delay from call              | 35218 | 0 | 38466 | 192   | RW | Word |   | 0...250         | s     |
| V3                       | V3-dOF | Compressor output activation delay from switch-off        | 35219 | 0 | 38466 | 768   | RW | Word |   | 0...250         | min   |
| V3                       | V3-dbi | Delay between two consecutive compressor output power-ons | 35220 | 0 | 38466 | 3072  | RW | Word |   | 0...250         | min   |
| V3                       | V3-OdO | Output activation delay at startup                        | 35221 | 0 | 38466 | 12288 | RW | Word |   | 0...250         | min   |
| V3                       | V3-CFP | Condenser pre-ventilation time in Heat/Cool               | 35305 | 0 | 38467 | 12    | RW | Word |   | 0...255         | s     |
| V3                       | V3-CFd | Condenser fan cut-out during defrosting.                  | 35306 | 0 | 38467 | 48    | RW | Word |   | 0...1           | flag  |
| V3                       | V3-OF1 | Remote offset                                             | 35227 | 0 | 38467 | 192   | RW | Word | Y | -50.0...50.0    | °C/°F |

|    |        |                                                                       |       |   |       |       |    |      |   |             |       |
|----|--------|-----------------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V3 | V3-Pot | Pump down time                                                        | 35333 | 0 | 38498 | 192   | RW | Word |   | 0...250     | s     |
| V3 | V3-SS1 | Compressor softstart:<br>advance hotgas valve<br>opening              | 35334 | 0 | 38498 | 768   | RW | Word |   | 0...250     | s     |
| V3 | V3-SS2 | Compressor softstart:<br>delay hotgas valve<br>closing                | 35335 | 0 | 38498 | 3072  | RW | Word |   | 0...250     | s     |
| V3 | V3-dP1 | Select defrost probe 1                                                | 35228 | 0 | 38467 | 768   | RW | Word |   | 0...8       | num   |
| V3 | V3-dP2 | Defrost probe 2<br>selection                                          | 35229 | 0 | 38467 | 3072  | RW | Word |   | 0...8       | num   |
| V3 | V3-dty | Type of defrost                                                       | 35232 | 0 | 38467 | 12288 | RW | Word |   | 0...4       | num   |
| V3 | V3-dFt | Dual evaporator defrost<br>activation mode                            | 35230 | 0 | 38467 | 49152 | RW | Word |   | 0...2       | num   |
| V3 | V3-dit | Interval between<br>defrosts                                          | 35233 | 0 | 38468 | 3     | RW | Word |   | 0...250     | hours |
| V3 | V3-dt1 | Unit of measure for<br>defrost intervals                              | 35236 | 0 | 38468 | 12    | RW | Word |   | 0...2       | num   |
| V3 | V3-dt2 | Unit of measure for<br>defrost duration                               | 35237 | 0 | 38468 | 48    | RW | Word |   | 0...2       | num   |
| V3 | V3-dCt | Defrost interval count<br>mode                                        | 35231 | 0 | 38468 | 192   | RW | Word |   | 0...5       | num   |
| V3 | V3-dOH | Defrost cycle activation<br>delay from the call                       | 35238 | 0 | 38468 | 768   | RW | Word |   | 0...250     | min   |
| V3 | V3-dE1 | Evaporator 1 defrost<br>maximum duration                              | 35234 | 0 | 38468 | 3072  | RW | Word |   | 1...250     | min   |
| V3 | V3-dE2 | Evaporator 2 defrost<br>maximum duration                              | 35235 | 0 | 38468 | 12288 | RW | Word |   | 1...250     | min   |
| V3 | V3-dS1 | Evaporator 1 defrost<br>end temperature                               | 35240 | 0 | 38468 | 49152 | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-dS2 | Evaporator 2 defrost<br>end temperature                               | 35241 | 0 | 38469 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-dSS | Temperature threshold<br>for starting defrost                         | 35239 | 0 | 38469 | 12    | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-dPO | Defrost activation<br>request at power-on                             | 35242 | 0 | 38469 | 48    | RW | Word |   | 0...1       | flag  |
| V3 | V3-tcd | Compressor output<br>activation/deactivation<br>time before a defrost | 35243 | 0 | 38469 | 192   | RW | Word | Y | -60...60    | min   |
| V3 | V3-ndE | minimum defrost<br>duration time                                      | 35244 | 0 | 38469 | 768   | RW | Word |   | 0...250     | min   |
| V3 | V3-PdC | Hot gas extraction time<br>at the end of the defrost                  | 35245 | 0 | 38469 | 3072  | RW | Word |   | 0...250     | min   |
| V3 | V3-tPd | Pump down time before<br>defrost start                                | 35247 | 0 | 38469 | 12288 | RW | Word |   | 0...255     | min   |
| V3 | V3-dPH | Regular defrost start<br>hour                                         | 35186 | 0 | 38469 | 49152 | RW | Word |   | 0...24      | hours |
| V3 | V3-dPn | Regular defrost start<br>minutes                                      | 35187 | 0 | 38470 | 3     | RW | Word |   | 0...59      | min   |
| V3 | V3-dPd | Regular defrost interval<br>duration                                  | 35188 | 0 | 38470 | 12    | RW | Word |   | 1...7       | day   |
| V3 | V3-Fd1 | 1st weekend/holiday<br>day                                            | 35135 | 0 | 38470 | 48    | RW | Word |   | 0...7       | num   |
| V3 | V3-Fd2 | 2nd weekend/holiday<br>day                                            | 35136 | 0 | 38470 | 192   | RW | Word |   | 0...7       | num   |
| V3 | V3-Edt | Timeout and defrost<br>end temperature<br>specific to each event      | 35137 | 0 | 38470 | 768   | RW | Word |   | 0...1       | flag  |
| V3 | V3-Fdn | Weekday defrost<br>number                                             | 35085 | 0 | 38504 | 3     | RW | Word |   | 0...250     | num   |
| V3 | V3-FFn | Weekend/holiday<br>defrost number                                     | 35086 | 0 | 38504 | 12    | RW | Word |   | 0...250     | num   |



|    |        |                                             |       |   |       |       |    |      |   |             |       |
|----|--------|---------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V3 | V3-PrH | Basin heater pre-activation time            | 35342 | 0 | 38499 | 3072  | RW | Word |   | 0...255     | min   |
| V3 | V3-d1H | Weekday defrost no. 1 start hour            | 35138 | 0 | 38470 | 3072  | RW | Word |   | 0...24      | hours |
| V3 | V3-d1n | Weekday defrost no. 1 start minute          | 35139 | 0 | 38470 | 12288 | RW | Word |   | 0...59      | min   |
| V3 | V3-d1t | 1st weekday defrost duration                | 35140 | 0 | 38470 | 49152 | RW | Word |   | 0...250     | min   |
| V3 | V3-d1S | 1st weekday defrost end temperature         | 35141 | 0 | 38471 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-d2H | Weekday defrost no. 2 start hour            | 35142 | 0 | 38471 | 12    | RW | Word |   | V3-d1H...24 | hours |
| V3 | V3-d2n | Weekday defrost no. 2 start minutes         | 35143 | 0 | 38471 | 48    | RW | Word |   | 0...59      | min   |
| V3 | V3-d2t | 2nd weekday defrost duration                | 35144 | 0 | 38471 | 192   | RW | Word |   | 0...250     | min   |
| V3 | V3-d2S | 2nd weekday defrost end temperature         | 35145 | 0 | 38471 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-d3H | Weekday defrost no. 3 start hour            | 35146 | 0 | 38471 | 3072  | RW | Word |   | V3-d2H...24 | hours |
| V3 | V3-d3n | Weekday defrost no. 3 start minutes         | 35147 | 0 | 38471 | 12288 | RW | Word |   | 0...59      | min   |
| V3 | V3-d3t | 3rd weekday defrost duration                | 35148 | 0 | 38471 | 49152 | RW | Word |   | 0...250     | min   |
| V3 | V3-d3S | 3rd weekday defrost end temperature         | 35149 | 0 | 38472 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-d4H | Weekday defrost no. 4 start hour            | 35150 | 0 | 38472 | 12    | RW | Word |   | V3-d3H...24 | hours |
| V3 | V3-d4n | Weekday defrost no. 4 start minutes         | 35151 | 0 | 38472 | 48    | RW | Word |   | 0...59      | min   |
| V3 | V3-d4t | 4th weekday defrost duration                | 35152 | 0 | 38472 | 192   | RW | Word |   | 0...250     | min   |
| V3 | V3-d4S | 4th weekday defrost end temperature         | 35153 | 0 | 38472 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-d5H | Weekday defrost no. 5 start hour            | 35154 | 0 | 38472 | 3072  | RW | Word |   | V3-d4H...24 | hours |
| V3 | V3-d5n | Weekday defrost no. 5 start minutes         | 35155 | 0 | 38472 | 12288 | RW | Word |   | 0...59      | min   |
| V3 | V3-d5t | 5th weekday defrost duration                | 35156 | 0 | 38472 | 49152 | RW | Word |   | 0...250     | min   |
| V3 | V3-d5S | 5th weekday defrost end temperature         | 35157 | 0 | 38473 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-d6H | Weekday defrost no. 6 start hour            | 35158 | 0 | 38473 | 12    | RW | Word |   | V3-d5H...24 | hours |
| V3 | V3-d6n | Weekday defrost no. 6 start minutes         | 35159 | 0 | 38473 | 48    | RW | Word |   | 0...59      | min   |
| V3 | V3-d6t | 6th weekday defrost duration                | 35160 | 0 | 38473 | 192   | RW | Word |   | 0...250     | min   |
| V3 | V3-d6S | 6th weekday defrost end temperature         | 35161 | 0 | 38473 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-F1H | Weekend/holiday defrost no. 1 start hour    | 35162 | 0 | 38473 | 3072  | RW | Word |   | 0...24      | hours |
| V3 | V3-F1n | Weekend/holiday defrost no. 1 start minute  | 35163 | 0 | 38473 | 12288 | RW | Word |   | 0...59      | min   |
| V3 | V3-F1t | 1st weekend/holiday defrost duration        | 35164 | 0 | 38473 | 49152 | RW | Word |   | 0...250     | min   |
| V3 | V3-F1S | 1st weekend/holiday defrost end temperature | 35165 | 0 | 38474 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-F2H | Weekend/holiday defrost no. 2 start hour    | 35166 | 0 | 38474 | 12    | RW | Word |   | V3-F1H...24 | hours |

|    |        |                                                            |       |   |       |       |    |      |   |             |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V3 | V3-F2n | Weekend/holiday defrost no. 2 start minutes                | 35167 | 0 | 38474 | 48    | RW | Word |   | 0...59      | min   |
| V3 | V3-F2t | 2nd weekend/holiday defrost duration                       | 35168 | 0 | 38474 | 192   | RW | Word |   | 0...250     | min   |
| V3 | V3-F2S | 2nd weekend/holiday defrost end temperature                | 35169 | 0 | 38474 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-F3H | Weekend/holiday defrost no. 3 start hour                   | 35170 | 0 | 38474 | 3072  | RW | Word |   | V3-F2H...24 | hours |
| V3 | V3-F3n | Weekend/holiday defrost no. 3 start minutes                | 35171 | 0 | 38474 | 12288 | RW | Word |   | 0...59      | min   |
| V3 | V3-F3t | 3rd weekend/holiday defrost duration                       | 35172 | 0 | 38474 | 49152 | RW | Word |   | 0...250     | min   |
| V3 | V3-F3S | 3rd weekend/holiday defrost end temperature                | 35173 | 0 | 38475 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-F4H | Weekend/holiday defrost no. 4 start hour                   | 35174 | 0 | 38475 | 12    | RW | Word |   | V3-F3H...24 | hours |
| V3 | V3-F4n | Weekend/holiday defrost no. 4 start minutes                | 35175 | 0 | 38475 | 48    | RW | Word |   | 0...59      | min   |
| V3 | V3-F4t | 4th weekend/holiday defrost duration                       | 35176 | 0 | 38475 | 192   | RW | Word |   | 0...250     | min   |
| V3 | V3-F4S | 4th weekend/holiday defrost end temperature                | 35177 | 0 | 38475 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-F5H | Weekend/holiday defrost no. 5 start hour                   | 35178 | 0 | 38475 | 3072  | RW | Word |   | V3-F4H...24 | hours |
| V3 | V3-F5n | Weekend/holiday defrost no. 5 start minutes                | 35179 | 0 | 38475 | 12288 | RW | Word |   | 0...59      | min   |
| V3 | V3-F5t | 5th weekend/holiday defrost duration                       | 35180 | 0 | 38475 | 49152 | RW | Word |   | 0...250     | min   |
| V3 | V3-F5S | 5th weekend/holiday defrost end temperature                | 35181 | 0 | 38476 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-F6H | Weekend/holiday defrost no. 6 start hour                   | 35182 | 0 | 38476 | 12    | RW | Word |   | V3-F5H...24 | hours |
| V3 | V3-F6n | Weekend/holiday defrost no. 6 start minutes                | 35183 | 0 | 38476 | 48    | RW | Word |   | 0...59      | min   |
| V3 | V3-F6t | 6th weekend/holiday defrost duration                       | 35184 | 0 | 38476 | 192   | RW | Word |   | 0...250     | min   |
| V3 | V3-F6S | 6th weekend/holiday defrost end temperature                | 35185 | 0 | 38476 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-FP1 | Selection of evaporator fan probe in normal mode           | 35248 | 0 | 38476 | 3072  | RW | Word |   | 0...7       | num   |
| V3 | V3-FP2 | Selection of evaporator fan probe in defrost               | 35249 | 0 | 38476 | 12288 | RW | Word |   | 0...7       | num   |
| V3 | V3-FPt | FSt parameter mode (absolute or relative)                  | 35250 | 0 | 38476 | 49152 | RW | Word |   | 0...1       | flag  |
| V3 | V3-FSt | Evaporator fan disabling temperature                       | 35251 | 0 | 38477 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V3 | V3-FAd | Evaporator fan trigger differential                        | 35252 | 0 | 38477 | 12    | RW | Word |   | 0.1...25.0  | °C/°F |
| V3 | V3-Fdt | Evaporator fan activation delay time after a defrost cycle | 35253 | 0 | 38477 | 48    | RW | Word |   | 0...250     | min   |
| V3 | V3-dt  | Dripping time                                              | 35258 | 0 | 38477 | 192   | RW | Word |   | 0...250     | min   |

|    |        |                                                            |       |   |       |       |    |      |   |            |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|------------|-------|
| V3 | V3-dFd | Evaporator fan cut-out during defrost                      | 35256 | 0 | 38477 | 768   | RW | Word |   | 0...1      | flag  |
| V3 | V3-FCO | Evaporator fan status with compressor output Off           | 35255 | 0 | 38477 | 3072  | RW | Word |   | 0...4      | num   |
| V3 | V3-Fod | Evaporator fan status with door open                       | 35257 | 0 | 38477 | 12288 | RW | Word |   | 0...1      | flag  |
| V3 | V3-FdC | Evaporator fan shutoff delay after compressor deactivation | 35254 | 0 | 38477 | 49152 | RW | Word |   | 0...250    | min   |
| V3 | V3-Fon | Evaporator fan On time in cyclical regulator mode          | 35259 | 0 | 38478 | 3     | RW | Word |   | 0...250    | min   |
| V3 | V3-FOF | Evaporator fan Off time in cyclical regulator mode         | 35260 | 0 | 38478 | 12    | RW | Word |   | 0...250    | min   |
| V3 | V3-Fnn | Evaporator fan ON time in night mode (duty cycle)          | 35261 | 0 | 38478 | 48    | RW | Word |   | 0...250    | min   |
| V3 | V3-FnF | Evaporator fan OFF time in night mode (duty cycle)         | 35262 | 0 | 38478 | 192   | RW | Word |   | 0...250    | min   |
| V3 | V3-FE1 | Variable speed fan probe selection                         | 35361 | 0 | 38502 | 48    | RW | Word |   | 0...12     | num   |
| V3 | V3-FEt | Setpoint mode                                              | 35362 | 0 | 38502 | 192   | RW | Word |   | 0...1      | flag  |
| V3 | V3-FES | Setpoint                                                   | 35363 | 0 | 38502 | 768   | RW | Word | Y | -58...302  | °C/°F |
| V3 | V3-FEd | Band                                                       | 35364 | 0 | 38502 | 3072  | RW | Word |   | 0.1...50.0 | °C/°F |
| V3 | V3-FEu | Cut-off band                                               | 35365 | 0 | 38502 | 12288 | RW | Word |   | 0.0...25.0 | °C/°F |
| V3 | V3-FEC | Cut-off differential                                       | 35366 | 0 | 38502 | 49152 | RW | Word |   | 0.1...25.0 | °C/°F |
| V3 | V3-FEr | Fan shutoff delay after compressor deactivation            | 35367 | 0 | 38503 | 3     | RW | Word |   | 0...250    | min   |
| V3 | V3-FE2 | Minimum day percentage                                     | 35368 | 0 | 38503 | 12    | RW | Word |   | 0...100    | %     |
| V3 | V3-FE3 | Maximum day percentage with compressor on                  | 35369 | 0 | 38503 | 48    | RW | Word |   | 0...100    | %     |
| V3 | V3-FE4 | Maximum day percentage with compressor off                 | 35370 | 0 | 38503 | 192   | RW | Word |   | 0...100    | %     |
| V3 | V3-FE5 | Minimum night percentage                                   | 35371 | 0 | 38503 | 768   | RW | Word |   | 0...100    | %     |
| V3 | V3-FE6 | Maximum night percentage with compressor on                | 35372 | 0 | 38503 | 3072  | RW | Word |   | 0...100    | %     |
| V3 | V3-FE7 | Maximum night percentage with compressor off               | 35373 | 0 | 38503 | 12288 | RW | Word |   | 0...100    | %     |
| V3 | V3-FE8 | Percentage during defrost                                  | 35374 | 0 | 38503 | 49152 | RW | Word |   | 0...100    | %     |
| V3 | V3-FE9 | Percentage in the event of probe error                     | 35375 | 0 | 38515 | 12    | RW | Word |   | 0...100    | %     |
| V3 | V3-FEA | Maximum pick-up speed                                      | 35376 | 0 | 38515 | 48    | RW | Word |   | 0...100    | %     |
| V3 | V3-FEb | Fan pick-up time                                           | 35377 | 0 | 38515 | 192   | RW | Word |   | 0...250    | s     |
| V3 | V3-FEP | Fan forcing period at pick-up speed                        | 35378 | 0 | 38515 | 768   | RW | Word |   | 0...250    | min   |
| V3 | V3-rA1 | Temperature alarm probe 1 selection                        | 35276 | 0 | 38478 | 768   | RW | Word |   | 0...7      | num   |
| V3 | V3-rA2 | Temperature alarm probe 2 selection                        | 35277 | 0 | 38478 | 3072  | RW | Word |   | 0...7      | num   |
| V3 | V3-Att | Alarm mode (absolute or relative)                          | 35278 | 0 | 38478 | 12288 | RW | Word |   | 0...1      | flag  |

|    |        |                                                                           |       |   |       |       |    |      |   |                |        |
|----|--------|---------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|--------|
| V3 | V3-AFd | Alarm activation differential                                             | 35279 | 0 | 38478 | 49152 | RW | Word |   | 0.1...25.0     | °C/°F  |
| V3 | V3-HA1 | Maximum alarm 1 threshold                                                 | 35280 | 0 | 38479 | 3     | RW | Word | Y | V3-LA1...302   | °C/°F  |
| V3 | V3-LA1 | Minimum alarm 1 threshold                                                 | 35281 | 0 | 38479 | 12    | RW | Word | Y | -58.0...V3-HA1 | °C/°F  |
| V3 | V3-HA2 | Maximum alarm 2 threshold                                                 | 35282 | 0 | 38479 | 48    | RW | Word | Y | V3-LA2...302   | °C/°F  |
| V3 | V3-LA2 | Minimum alarm 2 threshold                                                 | 35283 | 0 | 38479 | 192   | RW | Word | Y | -58.0...V3-HA2 | °C/°F  |
| V3 | V3-PAO | Temperature alarm exclusion time from power-on                            | 35284 | 0 | 38479 | 768   | RW | Word |   | 0...10         | hours  |
| V3 | V3-dAO | Exclusion time for temperature alarms after a defrost cycle               | 35286 | 0 | 38479 | 3072  | RW | Word |   | 0...250        | min    |
| V3 | V3-OAO | High and low temperature alarms exclusion time after closing the door     | 35285 | 0 | 38479 | 12288 | RW | Word |   | 0...10         | hours  |
| V3 | V3-tdO | Door open alarm exclusion time                                            | 35330 | 0 | 38479 | 49152 | RW | Word |   | 0...250        | min    |
| V3 | V3-tA1 | Probe 1 High/Minimum Alarm Delay                                          | 35287 | 0 | 38480 | 3     | RW | Word |   | 0...250        | min    |
| V3 | V3-tA2 | Probe 2 High/Minimum Alarm Delay                                          | 35288 | 0 | 38480 | 12    | RW | Word |   | 0...250        | min    |
| V3 | V3-dAt | Defrost ended due to timeout alarm signaling                              | 35246 | 0 | 38480 | 48    | RW | Word |   | 0...1          | flag   |
| V3 | V3-EAL | Regulators inhibited by external alarm                                    | 35290 | 0 | 38480 | 192   | RW | Word |   | 0...2          | num    |
| V3 | V3-rA3 | Input used by the two threshold/LKD alarm regulator                       | 35349 | 0 | 38500 | 12288 | RW | Word |   | 0...8          | num    |
| V3 | V3-ALL | Low alarm threshold (warning)                                             | 35350 | 0 | 38500 | 49152 | RW | Word |   | 0.0...V3-ALH   | num    |
| V3 | V3-ALH | High alarm threshold (alarm)                                              | 35351 | 0 | 38501 | 3     | RW | Word |   | V3-ALL...100   | num    |
| V3 | V3-dAL | Alarm leak differential                                                   | 35352 | 0 | 38501 | 12    | RW | Word |   | 0.1...100      | °C/°F  |
| V3 | V3-AL1 | Time probe remains above the low threshold due to leak alarm activation   | 35353 | 0 | 38501 | 48    | RW | Word |   | 0...250        | min    |
| V3 | V3-AL2 | Time probe remains above the high threshold due to leak alarm activation  | 35360 | 0 | 38502 | 12    | RW | Word |   | 0...250        | min    |
| V3 | V3-tP  | Enables alarm acknowledgment with any key                                 | 35331 | 0 | 38480 | 768   | RW | Word |   | 0...1          | flag   |
| V3 | V3-Art | Regular watchdog alarm activation period                                  | 35275 | 0 | 38480 | 3072  | RW | Word |   | 0...250        | min*10 |
| V3 | V3-dSd | Enable light relay from door switch                                       | 35272 | 0 | 38480 | 12288 | RW | Word |   | 0...1          | flag   |
| V3 | V3-dLt | Light relay off delay from door closure                                   | 35273 | 0 | 38480 | 49152 | RW | Word |   | 0...250        | min    |
| V3 | V3-OFL | Enable cold room lights off via key during the delay set in parameter dLt | 35274 | 0 | 38481 | 3     | RW | Word |   | 0...1          | flag   |
| V3 | V3-dOd | Enable utility shutoff upon door switch activation                        | 35289 | 0 | 38481 | 12    | RW | Word |   | 0...3          | num    |
| V3 | V3-dOA | Behavior forced by digital input                                          | 35291 | 0 | 38481 | 48    | RW | Word |   | 0...5          | num    |

|    |         |                                                                |       |   |       |       |    |      |   |              |        |
|----|---------|----------------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|--------|
| V3 | V3-PEA  | Enable forced behavior from door switch and/or external alarm. | 35292 | 0 | 38481 | 192   | RW | Word |   | 0...3        | num    |
| V3 | V3-dCO  | Compressor activation delay from acknowledgment                | 35293 | 0 | 38481 | 768   | RW | Word |   | 0...250      | min    |
| V3 | V3-dFO  | Fan enabling delay from acknowledgment                         | 35294 | 0 | 38481 | 3072  | RW | Word |   | 0...250      | min    |
| V3 | V3-ASb  | Instrument off active light/auxiliary digital input or key     | 35320 | 0 | 38481 | 12288 | RW | Word |   | 0...1        | flag   |
| V3 | V3-L00  | Shared probe                                                   | 35072 | 0 | 38481 | 49152 | RW | Word |   | 0...7        | num    |
| V3 | V3-L01  | Distributed viewing (refers to secondary)                      | 35073 | 0 | 38482 | 3     | RW | Word |   | 0...2        | num    |
| V3 | V3-L02  | Setpoint synchronization                                       | 35074 | 0 | 38482 | 12    | RW | Word |   | 0...1        | flag   |
| V3 | V3-L03  | Defrost synchronization                                        | 35075 | 0 | 38482 | 48    | RW | Word |   | 0...2        | num    |
| V3 | V3-L04  | Inhibit resources at the end of defrost                        | 35076 | 0 | 38482 | 192   | RW | Word |   | 0...1        | flag   |
| V3 | V3-L05  | Stand-by synchronization                                       | 35077 | 0 | 38482 | 768   | RW | Word |   | 0...1        | flag   |
| V3 | V3-L06  | Lights synchronization                                         | 35078 | 0 | 38482 | 3072  | RW | Word |   | 0...1        | flag   |
| V3 | V3-L07  | Reduced set synchronization                                    | 35079 | 0 | 38482 | 12288 | RW | Word |   | 0...1        | flag   |
| V3 | V3-L08  | AUX synchronization                                            | 35080 | 0 | 38482 | 49152 | RW | Word |   | 0...1        | flag   |
| V3 | V3-L09  | Shared saturation probe                                        | 35081 | 0 | 38483 | 3     | RW | Word |   | 0...1        | flag   |
| V3 | V3-L10  | Resource unlocking timeout during synchronized defrosts        | 35332 | 0 | 38483 | 12    | RW | Word |   | 0...250      | min    |
| V3 | V3-L11  | Number of devices connected in Link2                           | 35082 | 0 | 38500 | 48    | RW | Word |   | 0...8        | num    |
| V3 | V3-L12  | Alarm relay sharing in Link2                                   | 35083 | 0 | 38500 | 192   | RW | Word |   | 0...2        | num    |
| V3 | V3-L13  | Link2 serial frame configuration                               | 35343 | 0 | 38499 | 12288 | RW | Word |   | 0...1        | flag   |
| V3 | V3-L14  | Force cool mode                                                | 35359 | 0 | 38502 | 3     | RW | Word |   | 0...1        | flag   |
| V3 | V3-L15  | Shared buzzer and alarm silenced via Link2                     | 35339 | 0 | 38504 | 48    | RW | Word |   | 0...2        | num    |
| V3 | V3-dcS  | Deep cooling setpoint                                          | 35266 | 0 | 38483 | 768   | RW | Word | Y | -58.0...302  | °C/°F  |
| V3 | V3-tdC  | Deep cooling duration                                          | 35267 | 0 | 38483 | 3072  | RW | Word |   | 0...250      | min    |
| V3 | V3-dCC  | Defrost delay after deep cooling                               | 35268 | 0 | 38483 | 12288 | RW | Word |   | 0...250      | min    |
| V3 | V3-ESst | Type of action for the Energy Saving function                  | 35195 | 0 | 38483 | 49152 | RW | Word |   | 0...8        | num    |
| V3 | V3-ESF  | Night mode activation (Energy Saving)                          | 35263 | 0 | 38484 | 3     | RW | Word |   | 0...1        | flag   |
| V3 | V3-Cdt  | Door closing time                                              | 35264 | 0 | 38484 | 12    | RW | Word |   | 0...255      | min*10 |
| V3 | V3-ESo  | Low consumption mode disabling timeout (door switch)           | 35265 | 0 | 38484 | 48    | RW | Word |   | 0...10       | num    |
| V3 | V3-OS1  | Offset on setpoint 1                                           | 35212 | 0 | 38484 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V3 | V3-OS2  | Offset on setpoint 2                                           | 35213 | 0 | 38484 | 768   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V3 | V3-Od1  | Refrigerated cabinets energy saving offset 1                   | 35214 | 0 | 38484 | 3072  | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V3 | V3-Od2  | Refrigerated cabinets energy saving offset 2                   | 35215 | 0 | 38484 | 12288 | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V3 | V3-dn1  | Differential during energy saving mode 1                       | 35203 | 0 | 38484 | 49152 | RW | Word | Y | -58.0...302  | °C/°F  |

|    |        |                                                  |       |   |       |       |    |      |   |                |         |
|----|--------|--------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|---------|
| V3 | V3-dn2 | Differential during energy saving mode 2         | 35204 | 0 | 38485 | 3     | RW | Word | Y | -58.0...302    | °C/°F   |
| V3 | V3-EdH | Weekday energy saving start hour                 | 35189 | 0 | 38485 | 12    | RW | Word |   | 0...24         | hours   |
| V3 | V3-Edn | Weekday energy saving start minutes              | 35190 | 0 | 38485 | 48    | RW | Word |   | 0...59         | min     |
| V3 | V3-Edd | Weekday energy saving duration                   | 35191 | 0 | 38485 | 192   | RW | Word |   | 1...72         | hours   |
| V3 | V3-EFH | Weekend/holiday energy saving start hour         | 35192 | 0 | 38485 | 768   | RW | Word |   | 0...24         | hours   |
| V3 | V3-EFn | Weekend/holiday energy saving start minutes      | 35193 | 0 | 38485 | 3072  | RW | Word |   | 0...59         | min     |
| V3 | V3-EFd | Weekend/holiday energy saving duration           | 35194 | 0 | 38485 | 12288 | RW | Word |   | 1...72         | hours   |
| V3 | V3-FH  | Frame heater probe selection                     | 35295 | 0 | 38485 | 49152 | RW | Word |   | 0...9          | num     |
| V3 | V3-FHt | Frame heater period                              | 35297 | 0 | 38486 | 3     | RW | Word |   | 1...250        | s       |
| V3 | V3-FH0 | Frame heater set                                 | 35298 | 0 | 38486 | 12    | RW | Word | Y | -58.0...302    | °C/°F   |
| V3 | V3-FH1 | Frame heater offset                              | 35299 | 0 | 38486 | 48    | RW | Word |   | 0.0...25.0     | °C/°F   |
| V3 | V3-FH2 | Frame heater band                                | 35300 | 0 | 38486 | 192   | RW | Word | Y | -58.0...302    | °C/°F   |
| V3 | V3-FH3 | Frame heater minimum percentage/duty-cycle       | 35301 | 0 | 38486 | 768   | RW | Word |   | 0...100        | %       |
| V3 | V3-FH4 | Frame heater maximum percentage/day duty-cycle   | 35302 | 0 | 38486 | 3072  | RW | Word |   | 0...100        | %       |
| V3 | V3-FH5 | Frame heater maximum percentage/night duty-cycle | 35303 | 0 | 38486 | 12288 | RW | Word |   | 0...100        | %       |
| V3 | V3-FH6 | Frame heater percentage/duty-cycle in defrost    | 35304 | 0 | 38486 | 49152 | RW | Word |   | 0...100        | %       |
| V3 | V3-LOC | Disable terminal                                 | 35307 | 0 | 38487 | 3     | RW | Word |   | 0...1          | flag    |
| V3 | V3-PS1 | Password 1 value                                 | 35308 | 0 | 38487 | 12    | RW | Word |   | 0...250        | num     |
| V3 | V3-PS2 | Password 2 value                                 | 35309 | 0 | 38487 | 48    | RW | Word |   | 0...250        | num     |
| V3 | V3-ndt | Display with decimal point                       | 35310 | 0 | 38487 | 192   | RW | Word |   | 0...1          | flag    |
| V3 | V3-CA1 | Analog input 1 calibration                       | 35116 | 0 | 38487 | 768   | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V3 | V3-CA2 | Analog input 2 calibration                       | 35117 | 0 | 38487 | 3072  | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V3 | V3-CA3 | Analog input 3 calibration                       | 35118 | 0 | 38487 | 12288 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V3 | V3-CA4 | Analog input 4 calibration                       | 35119 | 0 | 38487 | 49152 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V3 | V3-CA5 | Analog input 5 calibration                       | 35120 | 0 | 38488 | 3     | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V3 | V3-CA6 | Analog input 6 calibration                       | 35121 | 0 | 38488 | 12    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V3 | V3-CA7 | Analog input 7 calibration                       | 35122 | 0 | 38488 | 48    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V3 | V3-LdL | Minimum display value                            | 35311 | 0 | 38488 | 192   | RW | Word | Y | -58.0...V3-HdL | °C/°F   |
| V3 | V3-HdL | Maximum display value                            | 35312 | 0 | 38488 | 768   | RW | Word | Y | V3-LdL...302   | °C/°F   |
| V3 | V3-ddL | Display lock mode during a defrost               | 35313 | 0 | 38488 | 3072  | RW | Word |   | 0...2          | num     |
| V3 | V3-Ldd | Display lock timeout from end of defrost         | 35314 | 0 | 38488 | 12288 | RW | Word |   | 0...250        | min     |
| V3 | V3-dro | Select °C / °F                                   | 35315 | 0 | 38488 | 49152 | RW | Word |   | 0...1          | flag    |

|    |        |                                              |       |   |       |       |    |      |   |          |      |
|----|--------|----------------------------------------------|-------|---|-------|-------|----|------|---|----------|------|
| V3 | V3-SbP | Pressure unit of measure                     | 35316 | 0 | 38489 | 3     | RW | Word |   | 0...1    | flag |
| V3 | V3-ddd | Select main display value                    | 35317 | 0 | 38489 | 12    | RW | Word |   | 0...8    | num  |
| V3 | V3-ddE | Resource displayed on ECHO                   | 35318 | 0 | 38489 | 48    | RW | Word |   | 0...11   | num  |
| V3 | V3-rPH | Receiver maximum valve opening %             | 35269 | 0 | 38489 | 192   | RW | Word |   | 0...5    | num  |
| V3 | V3-H00 | Select analog input type NTC/PTC             | 35084 | 0 | 38489 | 768   | RW | Word |   | 0...2    | num  |
| V3 | V3-H02 | Function activation time from terminal       | 35319 | 0 | 38489 | 3072  | RW | Word |   | 0...250  | s    |
| V3 | V3-H08 | Stand-by operating mode                      | 35321 | 0 | 38489 | 12288 | RW | Word |   | 0...2    | num  |
| V3 | V3-H11 | Digital input 1 configurability and polarity | 35087 | 0 | 38489 | 49152 | RW | Word | Y | -19...19 | num  |
| V3 | V3-H12 | Digital input 2 configurability and polarity | 35088 | 0 | 38490 | 3     | RW | Word | Y | -19...19 | num  |
| V3 | V3-H13 | Digital input 3 configurability and polarity | 35089 | 0 | 38490 | 12    | RW | Word | Y | -19...19 | num  |
| V3 | V3-H14 | Digital input 4 configurability and polarity | 35090 | 0 | 38490 | 48    | RW | Word | Y | -19...19 | num  |
| V3 | V3-H15 | Digital input 5 configurability and polarity | 35091 | 0 | 38490 | 192   | RW | Word | Y | -19...19 | num  |
| V3 | V3-H16 | Digital input 6 configurability and polarity | 35092 | 0 | 38490 | 768   | RW | Word | Y | -19...19 | num  |
| V3 | V3-H17 | Digital input 7 configurability and polarity | 35093 | 0 | 38490 | 3072  | RW | Word | Y | -19...19 | num  |
| V3 | V3-H18 | Digital input 8 configurability and polarity | 35094 | 0 | 38490 | 12288 | RW | Word | Y | -19...19 | num  |
| V3 | V3-i01 | Digital input 9 configurability and polarity | 35354 | 0 | 38501 | 192   | RW | Word | Y | -19...19 | num  |
| V3 | V3-i02 | D.I. 10 activation indication delay time     | 35355 | 0 | 38501 | 768   | RW | Word | Y | -19...19 | num  |
| V3 | V3-dti | Digital inputs 1 and 2 delay unit of measure | 35103 | 0 | 38490 | 49152 | RW | Word |   | 0...1    | flag |
| V3 | V3-d11 | D.I. 1 activation indication delay time      | 35095 | 0 | 38491 | 3     | RW | Word |   | 0...255  | min  |
| V3 | V3-d12 | D.I. 2 activation indication delay time      | 35096 | 0 | 38491 | 12    | RW | Word |   | 0...255  | min  |
| V3 | V3-d13 | D.I. 3 activation indication delay time      | 35097 | 0 | 38491 | 48    | RW | Word |   | 0...255  | min  |
| V3 | V3-d14 | D.I. 4 activation indication delay time      | 35098 | 0 | 38491 | 192   | RW | Word |   | 0...255  | min  |
| V3 | V3-d15 | D.I. 5 activation indication delay time      | 35099 | 0 | 38491 | 768   | RW | Word |   | 0...255  | min  |
| V3 | V3-d16 | D.I. 6 activation indication delay time      | 35100 | 0 | 38491 | 3072  | RW | Word |   | 0...255  | min  |
| V3 | V3-d17 | D.I. 7 activation indication delay time      | 35101 | 0 | 38491 | 12288 | RW | Word |   | 0...255  | min  |
| V3 | V3-d18 | D.I. 8 activation indication delay time      | 35102 | 0 | 38491 | 49152 | RW | Word |   | 0...255  | min  |
| V3 | V3-01i | D.I. 9 activation indication delay time      | 35356 | 0 | 38501 | 3072  | RW | Word |   | 0...255  | min  |

|    |        |                                           |       |   |       |       |    |      |  |         |     |
|----|--------|-------------------------------------------|-------|---|-------|-------|----|------|--|---------|-----|
| V3 | V3-02i | D.I. 10 activation indication delay time  | 35357 | 0 | 38501 | 12288 | RW | Word |  | 0...255 | min |
| V3 | V3-H21 | Configurability of digital output 1       | 35124 | 0 | 38492 | 3     | RW | Word |  | 0...19  | num |
| V3 | V3-H22 | Configurability of digital output 2       | 35125 | 0 | 38492 | 12    | RW | Word |  | 0...19  | num |
| V3 | V3-H23 | Configurability of digital output 3       | 35126 | 0 | 38492 | 48    | RW | Word |  | 0...19  | num |
| V3 | V3-H24 | Configurability of digital output 4       | 35127 | 0 | 38492 | 192   | RW | Word |  | 0...19  | num |
| V3 | V3-H25 | Configurability of digital output 5       | 35128 | 0 | 38492 | 768   | RW | Word |  | 0...19  | num |
| V3 | V3-H27 | Configurability of digital output 7       | 35130 | 0 | 38492 | 12288 | RW | Word |  | 0...19  | num |
| V3 | V3-H29 | Enable buzzer                             | 35131 | 0 | 38492 | 49152 | RW | Word |  | 0...1   | num |
| V3 | V3-d01 | Configurability of digital output 8       | 35347 | 0 | 38500 | 768   | RW | Word |  | 0...19  | num |
| V3 | V3-d02 | Configurability of digital output 9       | 35348 | 0 | 38500 | 3072  | RW | Word |  | 0...19  | num |
| V3 | V3-H31 | Configurability of the UP key             | 35322 | 0 | 38493 | 3     | RW | Word |  | 0...9   | num |
| V3 | V3-H32 | Configurability of the DOWN key           | 35323 | 0 | 38493 | 12    | RW | Word |  | 0...9   | num |
| V3 | V3-H33 | Configurability of the ESC key            | 35324 | 0 | 38493 | 48    | RW | Word |  | 0...9   | num |
| V3 | V3-H34 | Configurability of the Free 1 key         | 35325 | 0 | 38493 | 192   | RW | Word |  | 0...9   | num |
| V3 | V3-H35 | Configurability of the Free 2 key         | 35326 | 0 | 38493 | 768   | RW | Word |  | 0...9   | num |
| V3 | V3-H36 | Configurability of the Free 3 key         | 35327 | 0 | 38493 | 3072  | RW | Word |  | 0...9   | num |
| V3 | V3-H37 | Configurability of the Free 4 key         | 35328 | 0 | 38493 | 12288 | RW | Word |  | 0...9   | num |
| V3 | V3-H41 | Configurability of analog input 1         | 35104 | 0 | 38493 | 49152 | RW | Word |  | 0...2   | num |
| V3 | V3-H42 | Configurability of analog input 2         | 35105 | 0 | 38494 | 3     | RW | Word |  | 0...2   | num |
| V3 | V3-H43 | Configurability of analog input 3         | 35106 | 0 | 38494 | 12    | RW | Word |  | 0...2   | num |
| V3 | V3-H44 | Configurability of analog input 4         | 35107 | 0 | 38494 | 48    | RW | Word |  | 0...2   | num |
| V3 | V3-H45 | Configurability of analog input 5         | 35108 | 0 | 38494 | 192   | RW | Word |  | 0...2   | num |
| V3 | V3-H46 | Configurability of analog input 6         | 35109 | 0 | 38494 | 768   | RW | Word |  | 0...2   | num |
| V3 | V3-H47 | Configurability of analog input 7         | 35110 | 0 | 38494 | 3072  | RW | Word |  | 0...2   | num |
| V3 | V3-H48 | Configurability of analog input 8         | 35358 | 0 | 38501 | 49152 | RW | Word |  | 0...2   | num |
| V3 | V3-H50 | Configurability of analog output 1        | 35132 | 0 | 38494 | 12288 | RW | Word |  | 0...1   | num |
| V3 | V3-H51 | Function associated with analog output    | 35133 | 0 | 38494 | 49152 | RW | Word |  | 0...3   | num |
| V3 | V3-H68 | RTC present                               | 35134 | 0 | 38495 | 3     | RW | Word |  | 0...1   | num |
| V3 | V3-H70 | Selection of 1st sensor for virtual probe | 35112 | 0 | 38495 | 12    | RW | Word |  | 0...5   | num |
| V3 | V3-H71 | Selection of 2nd sensor for virtual probe | 35113 | 0 | 38495 | 48    | RW | Word |  | 0...5   | num |
| V3 | V3-H72 | Day virtual probe calculation %           | 35114 | 0 | 38495 | 192   | RW | Word |  | 0...100 | %   |



|    |        |                                                                             |       |   |       |       |    |      |   |                 |       |
|----|--------|-----------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V3 | V3-H73 | Night virtual probe calculation %                                           | 35115 | 0 | 38495 | 768   | RW | Word |   | 0...100         | %     |
| V3 | V3-H74 | Selection of 1st sensor for filtered virtual probe                          | 35343 | 0 | 38499 | 49152 | RW | Word |   | 0...65635       | num   |
| V3 | V3-H75 | Percentage in thousandths of the incoming signal for filtered virtual probe | 35344 | 0 | 38500 | 3     | RW | Word |   | 0...65635       | num   |
| V3 | V3-H76 | Filtered virtual probe offset                                               | 35346 | 0 | 38500 | 12    | RW | Word |   | 0...65635       | num   |
| V3 | V3-EtY | Selection of electronic expansion valve driver                              | 35329 | 0 | 38495 | 3072  | RW | Word |   | 0...1           | flag  |
| V3 | UL     | Visibility of parameter transfer function (Device -> UNICARD/MFK)           | -     | - | 38498 | 3     | RW | Word |   | 0...3           | num   |
| V3 | dL     | Visibility of parameter transfer function (UNICARD/MFK -> Device)           | -     | - | 38498 | 12    | RW | Word |   | 0...3           | num   |
| V3 | Fr     | Visibility of UNICARD/MFK formatting function                               | -     | - | 38498 | 48    | RW | Word |   | 0...3           | num   |
| V3 | V3-OHP | Selection of oil temperature probe                                          | 35336 | 0 | 38498 | 12288 | RW | Word |   | 0...8           | num   |
| V3 | V3-OSP | Oil heater setpoint                                                         | 35337 | 0 | 38498 | 49152 | RW | Word | Y | V3-OLS...V3-OHS | °C/°F |
| V3 | V3-OHd | Oil heater differential                                                     | 35338 | 0 | 38499 | 3     | RW | Word |   | 0.1...25.0      | °C/°F |
| V3 | V3-OHS | Maximum oil heater setpoint value that can be set                           | 35340 | 0 | 38499 | 48    | RW | Word | Y | V3-OLS...302    | °C/°F |
| V3 | V3-OLS | Minimum oil heater setpoint value that can be set                           | 35341 | 0 | 38499 | 192   | RW | Word | Y | -58.0...V3-OHS  | °C/°F |

## Application 4 parameters

|    |        |                                              |       |   |       |       |    |      |   |                 |       |
|----|--------|----------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V4 | V4-rE  | Regulation type                              | 35580 | 0 | 38560 | 3     | RW | Word |   | 0...6           | num   |
| V4 | V4-rP1 | Thermostat regulation probe 1                | 35581 | 0 | 38560 | 12    | RW | Word |   | 0...8           | num   |
| V4 | V4-rP2 | Thermostat regulation probe 2                | 35582 | 0 | 38560 | 48    | RW | Word |   | 0...9           | num   |
| V4 | V4-SP1 | Regulation setpoint 1                        | 35583 | 0 | 38560 | 192   | RW | Word | Y | V4-LS1...V4-HS1 | °C/°F |
| V4 | V4-dF1 | Setpoint differential 1                      | 35584 | 0 | 38560 | 768   | RW | Word | Y | -58.0...302     | °C/°F |
| V4 | V4-SP2 | Regulation setpoint 2                        | 35585 | 0 | 38560 | 3072  | RW | Word | Y | V4-LS2...V4-HS2 | °C/°F |
| V4 | V4-dF2 | Setpoint differential 2                      | 35586 | 0 | 38560 | 12288 | RW | Word | Y | -58.0...302     | °C/°F |
| V4 | V4-Stt | Differential management mode                 | 35589 | 0 | 38560 | 49152 | RW | Word |   | 0...1           | flag  |
| V4 | V4-HS1 | Maximum value that can be set for Setpoint 1 | 35592 | 0 | 38561 | 3     | RW | Word | Y | V4-LS1...V4-HdL | °C/°F |
| V4 | V4-LS1 | Minimum value that can be set for Setpoint 1 | 35593 | 0 | 38561 | 12    | RW | Word | Y | V4-LdL...V4-HS1 | °C/°F |
| V4 | V4-HS2 | Maximum value that can be set for Setpoint 2 | 35594 | 0 | 38561 | 48    | RW | Word | Y | V4-LS2...V4-HdL | °C/°F |
| V4 | V4-LS2 | Minimum value that can be set for Setpoint 2 | 35595 | 0 | 38561 | 192   | RW | Word | Y | V4-LdL...V4-HS2 | °C/°F |
| V4 | V4-HC1 | Setpoint 1 operating mode (Heating/Cooling)  | 35590 | 0 | 38561 | 768   | RW | Word |   | 0...1           | flag  |
| V4 | V4-HC2 | Setpoint 2 operating mode (Heating/Cooling)  | 35591 | 0 | 38561 | 3072  | RW | Word |   | 0...1           | flag  |

|    |        |                                                           |       |   |       |       |    |      |   |              |       |
|----|--------|-----------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|-------|
| V4 | V4-Cit | Minimum compressor output activation time                 | 35600 | 0 | 38562 | 12    | RW | Word |   | 0...250      | min   |
| V4 | V4-CAt | Maximum compressor output activation time                 | 35601 | 0 | 38562 | 48    | RW | Word |   | 0...250      | min   |
| V4 | V4-OnT | Compressor output ON time if regulation probe is faulty   | 35606 | 0 | 38561 | 49152 | RW | Word |   | 0...250      | min   |
| V4 | V4-OFt | Compressor output OFF time if regulation probe is faulty  | 35607 | 0 | 38562 | 3     | RW | Word |   | 0...250      | min   |
| V4 | V4-dOn | Compressor output activation delay from call              | 35602 | 0 | 38562 | 192   | RW | Word |   | 0...250      | s     |
| V4 | V4-dOF | Compressor output activation delay from switch-off        | 35603 | 0 | 38562 | 768   | RW | Word |   | 0...250      | min   |
| V4 | V4-dbi | Delay between two consecutive compressor output power-ons | 35604 | 0 | 38562 | 3072  | RW | Word |   | 0...250      | min   |
| V4 | V4-OdO | Output activation delay at startup                        | 35605 | 0 | 38562 | 12288 | RW | Word |   | 0...250      | min   |
| V4 | V4-CFP | Condenser pre-ventilation time in Heat/Cool               | 35689 | 0 | 38563 | 12    | RW | Word |   | 0...255      | s     |
| V4 | V4-CFd | Condenser fan cut-out during defrosting.                  | 35690 | 0 | 38563 | 48    | RW | Word |   | 0...1        | flag  |
| V4 | V4-OF1 | Remote offset                                             | 35611 | 0 | 38563 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F |
| V4 | V4-Pot | Pump down time                                            | 35717 | 0 | 38594 | 192   | RW | Word |   | 0...250      | s     |
| V4 | V4-SS1 | Compressor softstart: advance hotgas valve opening        | 35718 | 0 | 38594 | 768   | RW | Word |   | 0...250      | s     |
| V4 | V4-SS2 | Compressor softstart: delay hotgas valve closing          | 35719 | 0 | 38594 | 3072  | RW | Word |   | 0...250      | s     |
| V4 | V4-dP1 | Select defrost probe 1                                    | 35612 | 0 | 38563 | 768   | RW | Word |   | 0...8        | num   |
| V4 | V4-dP2 | Defrost probe 2 selection                                 | 35613 | 0 | 38563 | 3072  | RW | Word |   | 0...8        | num   |
| V4 | V4-dty | Type of defrost                                           | 35616 | 0 | 38563 | 12288 | RW | Word |   | 0...4        | num   |
| V4 | V4-dFt | Dual evaporator defrost activation mode                   | 35614 | 0 | 38563 | 49152 | RW | Word |   | 0...2        | num   |
| V4 | V4-dit | Interval between defrosts                                 | 35617 | 0 | 38564 | 768   | RW | Word |   | 0...250      | hours |
| V4 | V4-dt1 | Unit of measure for defrost intervals                     | 35620 | 0 | 38564 | 3     | RW | Word |   | 0...2        | num   |
| V4 | V4-dt2 | Unit of measure for defrost duration                      | 35621 | 0 | 38564 | 12    | RW | Word |   | 0...2        | num   |
| V4 | V4-dCt | Defrost interval count mode                               | 35615 | 0 | 38564 | 48    | RW | Word |   | 0...5        | num   |
| V4 | V4-dOH | Defrost cycle activation delay from the call              | 35622 | 0 | 38564 | 192   | RW | Word |   | 0...250      | min   |
| V4 | V4-dE1 | Evaporator 1 defrost maximum duration                     | 35618 | 0 | 38564 | 3072  | RW | Word |   | 1...250      | min   |
| V4 | V4-dE2 | Evaporator 2 defrost maximum duration                     | 35619 | 0 | 38564 | 12288 | RW | Word |   | 1...250      | min   |
| V4 | V4-dS1 | Evaporator 1 defrost end temperature                      | 35624 | 0 | 38564 | 49152 | RW | Word | Y | -58.0...302  | °C/°F |
| V4 | V4-dS2 | Evaporator 2 defrost end temperature                      | 35625 | 0 | 38565 | 3     | RW | Word | Y | -58.0...302  | °C/°F |
| V4 | V4-dSS | Temperature threshold for starting defrost                | 35623 | 0 | 38565 | 12    | RW | Word | Y | -58.0...302  | °C/°F |
| V4 | V4-dPO | Defrost activation request at power-on                    | 35626 | 0 | 38565 | 48    | RW | Word |   | 0...1        | flag  |

|    |        |                                                                 |       |   |       |       |    |      |   |             |       |
|----|--------|-----------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V4 | V4-tcd | Compressor output activation/deactivation time before a defrost | 35627 | 0 | 38565 | 192   | RW | Word | Y | -60...60    | min   |
| V4 | V4-ndE | minimum defrost duration time                                   | 35628 | 0 | 38565 | 768   | RW | Word |   | 0...250     | min   |
| V4 | V4-PdC | Hot gas extraction time at the end of the defrost               | 35629 | 0 | 38565 | 3072  | RW | Word |   | 0...250     | min   |
| V4 | V4-tPd | Pump down time before defrost start                             | 35631 | 0 | 38565 | 12288 | RW | Word |   | 0...255     | min   |
| V4 | V4-dPH | Regular defrost start hour                                      | 35570 | 0 | 38565 | 49152 | RW | Word |   | 0...24      | hours |
| V4 | V4-dPn | Regular defrost start minutes                                   | 35571 | 0 | 38566 | 3     | RW | Word |   | 0...59      | min   |
| V4 | V4-dPd | Regular defrost interval duration                               | 35572 | 0 | 38566 | 12    | RW | Word |   | 1...7       | day   |
| V4 | V4-Fd1 | 1st weekend/holiday day                                         | 35519 | 0 | 38566 | 48    | RW | Word |   | 0...7       | num   |
| V4 | V4-Fd2 | 2nd weekend/holiday day                                         | 35520 | 0 | 38566 | 192   | RW | Word |   | 0...7       | num   |
| V4 | V4-Edt | Timeout and defrost end temperature specific to each event      | 35521 | 0 | 38566 | 768   | RW | Word |   | 0...1       | flag  |
| V4 | V4-Fdn | Weekday defrost number                                          | 35469 | 0 | 38600 | 3     | RW | Word |   | 0...250     | num   |
| V4 | V4-FFn | Weekend/holiday defrost number                                  | 35470 | 0 | 38600 | 12    | RW | Word |   | 0...250     | num   |
| V4 | V4-PrH | Basin heater pre-activation time                                | 35726 | 0 | 38595 | 3072  | RW | Word |   | 0...255     | min   |
| V4 | V4-d1H | Weekday defrost no. 1 start hour                                | 35522 | 0 | 38566 | 3072  | RW | Word |   | 0...24      | hours |
| V4 | V4-d1n | Weekday defrost no. 1 start minute                              | 35523 | 0 | 38566 | 12288 | RW | Word |   | 0...59      | min   |
| V4 | V4-d1t | 1st weekday defrost duration                                    | 35524 | 0 | 38566 | 49152 | RW | Word |   | 0...250     | min   |
| V4 | V4-d1S | 1st weekday defrost end temperature                             | 35525 | 0 | 38567 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-d2H | Weekday defrost no. 2 start hour                                | 35526 | 0 | 38567 | 12    | RW | Word |   | V4-d1H...24 | hours |
| V4 | V4-d2n | Weekday defrost no. 2 start minutes                             | 35527 | 0 | 38567 | 48    | RW | Word |   | 0...59      | min   |
| V4 | V4-d2t | 2nd weekday defrost duration                                    | 35528 | 0 | 38567 | 192   | RW | Word |   | 0...250     | min   |
| V4 | V4-d2S | 2nd weekday defrost end temperature                             | 35529 | 0 | 38567 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-d3H | Weekday defrost no. 3 start hour                                | 35530 | 0 | 38567 | 3072  | RW | Word |   | V4-d2H...24 | hours |
| V4 | V4-d3n | Weekday defrost no. 3 start minutes                             | 35531 | 0 | 38567 | 12288 | RW | Word |   | 0...59      | min   |
| V4 | V4-d3t | 3rd weekday defrost duration                                    | 35532 | 0 | 38567 | 49152 | RW | Word |   | 0...250     | min   |
| V4 | V4-d3S | 3rd weekday defrost end temperature                             | 35533 | 0 | 38568 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-d4H | Weekday defrost no. 4 start hour                                | 35534 | 0 | 38568 | 12    | RW | Word |   | V4-d3H...24 | hours |
| V4 | V4-d4n | Weekday defrost no. 4 start minutes                             | 35535 | 0 | 38568 | 48    | RW | Word |   | 0...59      | min   |
| V4 | V4-d4t | 4th weekday defrost duration                                    | 35536 | 0 | 38568 | 192   | RW | Word |   | 0...250     | min   |
| V4 | V4-d4S | 4th weekday defrost end temperature                             | 35537 | 0 | 38568 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-d5H | Weekday defrost no. 5 start hour                                | 35538 | 0 | 38568 | 3072  | RW | Word |   | V4-d4H...24 | hours |

|    |        |                                             |       |   |       |       |    |      |   |             |       |
|----|--------|---------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V4 | V4-d5n | Weekday defrost no. 5 start minutes         | 35539 | 0 | 38568 | 12288 | RW | Word |   | 0...59      | min   |
| V4 | V4-d5t | 5th weekday defrost duration                | 35540 | 0 | 38568 | 49152 | RW | Word |   | 0...250     | min   |
| V4 | V4-d5S | 5th weekday defrost end temperature         | 35541 | 0 | 38569 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-d6H | Weekday defrost no. 6 start hour            | 35542 | 0 | 38569 | 12    | RW | Word |   | V4-d5H...24 | hours |
| V4 | V4-d6n | Weekday defrost no. 6 start minutes         | 35543 | 0 | 38569 | 48    | RW | Word |   | 0...59      | min   |
| V4 | V4-d6t | 6th weekday defrost duration                | 35544 | 0 | 38569 | 192   | RW | Word |   | 0...250     | min   |
| V4 | V4-d6S | 6th weekday defrost end temperature         | 35545 | 0 | 38569 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-F1H | Weekend/holiday defrost no. 1 start hour    | 35546 | 0 | 38569 | 3072  | RW | Word |   | 0...24      | hours |
| V4 | V4-F1n | Weekend/holiday defrost no. 1 start minute  | 35547 | 0 | 38569 | 12288 | RW | Word |   | 0...59      | min   |
| V4 | V4-F1t | 1st weekend/holiday defrost duration        | 35548 | 0 | 38569 | 49152 | RW | Word |   | 0...250     | min   |
| V4 | V4-F1S | 1st weekend/holiday defrost end temperature | 35549 | 0 | 38570 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-F2H | Weekend/holiday defrost no. 2 start hour    | 35550 | 0 | 38570 | 12    | RW | Word |   | V4-F1H...24 | hours |
| V4 | V4-F2n | Weekend/holiday defrost no. 2 start minutes | 35551 | 0 | 38570 | 48    | RW | Word |   | 0...59      | min   |
| V4 | V4-F2t | 2nd weekend/holiday defrost duration        | 35552 | 0 | 38570 | 192   | RW | Word |   | 0...250     | min   |
| V4 | V4-F2S | 2nd weekend/holiday defrost end temperature | 35553 | 0 | 38570 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-F3H | Weekend/holiday defrost no. 3 start hour    | 35554 | 0 | 38570 | 3072  | RW | Word |   | V4-F2H...24 | hours |
| V4 | V4-F3n | Weekend/holiday defrost no. 3 start minutes | 35555 | 0 | 38570 | 12288 | RW | Word |   | 0...59      | min   |
| V4 | V4-F3t | 3rd weekend/holiday defrost duration        | 35556 | 0 | 38570 | 49152 | RW | Word |   | 0...250     | min   |
| V4 | V4-F3S | 3rd weekend/holiday defrost end temperature | 35557 | 0 | 38571 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-F4H | Weekend/holiday defrost no. 4 start hour    | 35558 | 0 | 38571 | 12    | RW | Word |   | V4-F3H...24 | hours |
| V4 | V4-F4n | Weekend/holiday defrost no. 4 start minutes | 35559 | 0 | 38571 | 48    | RW | Word |   | 0...59      | min   |
| V4 | V4-F4t | 4th weekend/holiday defrost duration        | 35560 | 0 | 38571 | 192   | RW | Word |   | 0...250     | min   |
| V4 | V4-F4S | 4th weekend/holiday defrost end temperature | 35561 | 0 | 38571 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-F5H | Weekend/holiday defrost no. 5 start hour    | 35562 | 0 | 38571 | 3072  | RW | Word |   | V4-F4H...24 | hours |
| V4 | V4-F5n | Weekend/holiday defrost no. 5 start minutes | 35563 | 0 | 38571 | 12288 | RW | Word |   | 0...59      | min   |
| V4 | V4-F5t | 5th weekend/holiday defrost duration        | 35564 | 0 | 38571 | 49152 | RW | Word |   | 0...250     | min   |

|    |        |                                                            |       |   |       |       |    |      |   |             |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V4 | V4-F5S | 5th weekend/holiday defrost end temperature                | 35565 | 0 | 38572 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-F6H | Weekend/holiday defrost no. 6 start hour                   | 35566 | 0 | 38572 | 12    | RW | Word |   | V4-F5H...24 | hours |
| V4 | V4-F6n | Weekend/holiday defrost no. 6 start minutes                | 35567 | 0 | 38572 | 48    | RW | Word |   | 0...59      | min   |
| V4 | V4-F6t | 6th weekend/holiday defrost duration                       | 35568 | 0 | 38572 | 192   | RW | Word |   | 0...250     | min   |
| V4 | V4-F6S | 6th weekend/holiday defrost end temperature                | 35569 | 0 | 38572 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-FP1 | Selection of evaporator fan probe in normal mode           | 35632 | 0 | 38572 | 3072  | RW | Word |   | 0...7       | num   |
| V4 | V4-FP2 | Selection of evaporator fan probe in defrost               | 35633 | 0 | 38572 | 12288 | RW | Word |   | 0...7       | num   |
| V4 | V4-FPt | FSt parameter mode (absolute or relative)                  | 35634 | 0 | 38572 | 49152 | RW | Word |   | 0...1       | flag  |
| V4 | V4-FSt | Evaporator fan disabling temperature                       | 35635 | 0 | 38573 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V4 | V4-FAd | Evaporator fan trigger differential                        | 35636 | 0 | 38573 | 12    | RW | Word |   | 0.1...25.0  | °C/°F |
| V4 | V4-Fdt | Evaporator fan activation delay time after a defrost cycle | 35637 | 0 | 38573 | 48    | RW | Word |   | 0...250     | min   |
| V4 | V4-dt  | Dripping time                                              | 35642 | 0 | 38573 | 192   | RW | Word |   | 0...250     | min   |
| V4 | V4-dFd | Evaporator fan cut-out during defrost                      | 35640 | 0 | 38573 | 768   | RW | Word |   | 0...1       | flag  |
| V4 | V4-FCO | Evaporator fan status with compressor output Off           | 35639 | 0 | 38573 | 3072  | RW | Word |   | 0...4       | num   |
| V4 | V4-Fod | Evaporator fan status with door open                       | 35641 | 0 | 38573 | 12288 | RW | Word |   | 0...1       | flag  |
| V4 | V4-FdC | Evaporator fan shutoff delay after compressor deactivation | 35638 | 0 | 38573 | 49152 | RW | Word |   | 0...250     | min   |
| V4 | V4-FOn | Evaporator fan On time in cyclical regulator mode          | 35643 | 0 | 38574 | 3     | RW | Word |   | 0...250     | min   |
| V4 | V4-FOF | Evaporator fan Off time in cyclical regulator mode         | 35644 | 0 | 38574 | 12    | RW | Word |   | 0...250     | min   |
| V4 | V4-Fnn | Evaporator fan ON time in night mode (duty cycle)          | 35645 | 0 | 38574 | 48    | RW | Word |   | 0...250     | min   |
| V4 | V4-FnF | Evaporator fan OFF time in night mode (duty cycle)         | 35646 | 0 | 38574 | 192   | RW | Word |   | 0...250     | min   |
| V4 | V4-FE1 | Variable speed fan probe selection                         | 35745 | 0 | 38598 | 48    | RW | Word |   | 0...12      | num   |
| V4 | V4-FEt | Setpoint mode                                              | 35746 | 0 | 38598 | 192   | RW | Word |   | 0...1       | flag  |
| V4 | V4-FES | Setpoint                                                   | 35747 | 0 | 38598 | 768   | RW | Word | Y | -58...302   | °C/°F |
| V4 | V4-FEd | Band                                                       | 35748 | 0 | 38598 | 3072  | RW | Word |   | 0.1...50.0  | °C/°F |
| V4 | V4-FEu | Cut-off band                                               | 35749 | 0 | 38598 | 12288 | RW | Word |   | 0.0...25.0  | °C/°F |
| V4 | V4-FEC | Cut-off differential                                       | 35750 | 0 | 38598 | 49152 | RW | Word |   | 0.1...25.0  | °C/°F |
| V4 | V4-FEr | Fan shutoff delay after compressor deactivation            | 35751 | 0 | 38599 | 3     | RW | Word |   | 0...250     | min   |
| V4 | V4-FE2 | Minimum day percentage                                     | 35752 | 0 | 38599 | 12    | RW | Word |   | 0...100     | %     |

|    |        |                                                                       |       |   |       |       |    |      |   |                |       |
|----|--------|-----------------------------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|-------|
| V4 | V4-FE3 | Maximum day percentage with compressor on                             | 35753 | 0 | 38599 | 48    | RW | Word |   | 0...100        | %     |
| V4 | V4-FE4 | Maximum day percentage with compressor off                            | 35754 | 0 | 38599 | 192   | RW | Word |   | 0...100        | %     |
| V4 | V4-FE5 | Minimum night percentage                                              | 35755 | 0 | 38599 | 768   | RW | Word |   | 0...100        | %     |
| V4 | V4-FE6 | Maximum night percentage with compressor on                           | 35756 | 0 | 38599 | 3072  | RW | Word |   | 0...100        | %     |
| V4 | V4-FE7 | Maximum night percentage with compressor off                          | 35757 | 0 | 38599 | 12288 | RW | Word |   | 0...100        | %     |
| V4 | V4-FE8 | Percentage during defrost                                             | 35758 | 0 | 38599 | 49152 | RW | Word |   | 0...100        | %     |
| V4 | V4-FE9 | Percentage in the event of probe error                                | 35759 | 0 | 38611 | 12    | RW | Word |   | 0...100        | %     |
| V4 | V4-FEA | Maximum pick-up speed                                                 | 35760 | 0 | 38611 | 48    | RW | Word |   | 0...100        | %     |
| V4 | V4-FEb | Fan pick-up time                                                      | 35761 | 0 | 38611 | 192   | RW | Word |   | 0...250        | s     |
| V4 | V4-FEP | Fan forcing period at pick-up speed                                   | 35762 | 0 | 38611 | 768   | RW | Word |   | 0...250        | min   |
| V4 | V4-rA1 | Temperature alarm probe 1 selection                                   | 35660 | 0 | 38574 | 768   | RW | Word |   | 0...7          | num   |
| V4 | V4-rA2 | Temperature alarm probe 2 selection                                   | 35661 | 0 | 38574 | 3072  | RW | Word |   | 0...7          | num   |
| V4 | V4-Att | Alarm mode (absolute or relative)                                     | 35662 | 0 | 38574 | 12288 | RW | Word |   | 0...1          | flag  |
| V4 | V4-AFd | Alarm activation differential                                         | 35663 | 0 | 38574 | 49152 | RW | Word |   | 0.1...25.0     | °C/°F |
| V4 | V4-HA1 | Maximum alarm 1 threshold                                             | 35664 | 0 | 38575 | 3     | RW | Word | Y | V4-LA1...302   | °C/°F |
| V4 | V4-LA1 | Minimum alarm 1 threshold                                             | 35665 | 0 | 38575 | 12    | RW | Word | Y | -58.0...V4-HA1 | °C/°F |
| V4 | V4-HA2 | Maximum alarm 2 threshold                                             | 35666 | 0 | 38575 | 48    | RW | Word | Y | V4-LA2...302   | °C/°F |
| V4 | V4-LA2 | Minimum alarm 2 threshold                                             | 35667 | 0 | 38575 | 192   | RW | Word | Y | -58.0...V4-HA2 | °C/°F |
| V4 | V4-PAO | Temperature alarm exclusion time from power-on                        | 35668 | 0 | 38575 | 768   | RW | Word |   | 0...10         | hours |
| V4 | V4-dAO | Exclusion time for temperature alarms after a defrost cycle           | 35670 | 0 | 38575 | 3072  | RW | Word |   | 0...250        | min   |
| V4 | V4-OAO | High and low temperature alarms exclusion time after closing the door | 35669 | 0 | 38575 | 12288 | RW | Word |   | 0...10         | hours |
| V4 | V4-tdO | Door open alarm exclusion time                                        | 35714 | 0 | 38575 | 49152 | RW | Word |   | 0...250        | min   |
| V4 | V4-tA1 | Probe 1 High/Minimum Alarm Delay                                      | 35671 | 0 | 38576 | 3     | RW | Word |   | 0...250        | min   |
| V4 | V4-tA2 | Probe 2 High/Minimum Alarm Delay                                      | 35672 | 0 | 38576 | 12    | RW | Word |   | 0...250        | min   |
| V4 | V4-dAt | Defrost ended due to timeout alarm signaling                          | 35630 | 0 | 38576 | 48    | RW | Word |   | 0...1          | flag  |
| V4 | V4-EAL | Regulators inhibited by external alarm                                | 35674 | 0 | 38576 | 192   | RW | Word |   | 0...2          | num   |
| V4 | V4-rA3 | Input used by the two threshold/LKD alarm regulator                   | 35733 | 0 | 38596 | 12288 | RW | Word |   | 0...8          | num   |

|    |        |                                                                           |       |   |       |       |    |      |  |              |        |
|----|--------|---------------------------------------------------------------------------|-------|---|-------|-------|----|------|--|--------------|--------|
| V4 | V4-ALL | Low alarm threshold (warning)                                             | 35734 | 0 | 38596 | 49152 | RW | Word |  | 0.0...V4-ALH | num    |
| V4 | V4-ALH | High alarm threshold (alarm)                                              | 35735 | 0 | 38597 | 3     | RW | Word |  | V4-ALL...100 | num    |
| V4 | V4-dAL | Alarm leak differential                                                   | 35736 | 0 | 38597 | 12    | RW | Word |  | 0.1...100    | °C/°F  |
| V4 | V4-AL1 | Time probe remains above the low threshold due to leak alarm activation   | 35737 | 0 | 38597 | 48    | RW | Word |  | 0...250      | min    |
| V4 | V4-AL2 | Time probe remains above the high threshold due to leak alarm activation  | 35744 | 0 | 38598 | 12    | RW | Word |  | 0...250      | min    |
| V4 | V4-tP  | Enables alarm acknowledgment with any key                                 | 35715 | 0 | 38576 | 768   | RW | Word |  | 0...1        | flag   |
| V4 | V4-Art | Regular watchdog alarm activation period                                  | 35659 | 0 | 38576 | 3072  | RW | Word |  | 0...250      | min*10 |
| V4 | V4-dSd | Enable light relay from door switch                                       | 35656 | 0 | 38576 | 12288 | RW | Word |  | 0...1        | flag   |
| V4 | V4-dLt | Light relay off delay from door closure                                   | 35657 | 0 | 38576 | 49152 | RW | Word |  | 0...250      | min    |
| V4 | V4-OFL | Enable cold room lights off via key during the delay set in parameter dLt | 35658 | 0 | 38577 | 3     | RW | Word |  | 0...1        | flag   |
| V4 | V4-dOd | Enable utility shutoff upon door switch activation                        | 35673 | 0 | 38577 | 12    | RW | Word |  | 0...3        | num    |
| V4 | V4-dOA | Behavior forced by digital input                                          | 35675 | 0 | 38577 | 48    | RW | Word |  | 0...5        | num    |
| V4 | V4-PEA | Enable forced behavior from door switch and/or external alarm.            | 35676 | 0 | 38577 | 192   | RW | Word |  | 0...3        | num    |
| V4 | V4-dCO | Compressor activation delay from acknowledgment                           | 35677 | 0 | 38577 | 768   | RW | Word |  | 0...250      | min    |
| V4 | V4-dFO | Fan enabling delay from acknowledgment                                    | 35678 | 0 | 38577 | 3072  | RW | Word |  | 0...250      | min    |
| V4 | V4-ASb | Instrument off active light/auxiliary digital input or key                | 35704 | 0 | 38577 | 12288 | RW | Word |  | 0...1        | flag   |
| V4 | V4-L00 | Shared probe                                                              | 35456 | 0 | 38577 | 49152 | RW | Word |  | 0...7        | num    |
| V4 | V4-L01 | Distributed viewing (refers to secondary)                                 | 35457 | 0 | 38578 | 3     | RW | Word |  | 0...2        | num    |
| V4 | V4-L02 | Setpoint synchronization                                                  | 35458 | 0 | 38578 | 12    | RW | Word |  | 0...1        | flag   |
| V4 | V4-L03 | Defrost synchronization                                                   | 35459 | 0 | 38578 | 48    | RW | Word |  | 0...2        | num    |
| V4 | V4-L04 | Inhibit resources at the end of defrost                                   | 35460 | 0 | 38578 | 192   | RW | Word |  | 0...1        | flag   |
| V4 | V4-L05 | Stand-by synchronization                                                  | 35461 | 0 | 38578 | 768   | RW | Word |  | 0...1        | flag   |
| V4 | V4-L06 | Lights synchronization                                                    | 35462 | 0 | 38578 | 3072  | RW | Word |  | 0...1        | flag   |
| V4 | V4-L07 | Reduced set synchronization                                               | 35463 | 0 | 38578 | 12288 | RW | Word |  | 0...1        | flag   |
| V4 | V4-L08 | AUX synchronization                                                       | 35464 | 0 | 38578 | 49152 | RW | Word |  | 0...1        | flag   |
| V4 | V4-L09 | Shared saturation probe                                                   | 35465 | 0 | 38579 | 3     | RW | Word |  | 0...1        | flag   |
| V4 | V4-L10 | Resource unlocking timeout during synchronized defrosts                   | 35716 | 0 | 38579 | 12    | RW | Word |  | 0...250      | min    |
| V4 | V4-L11 | Number of devices connected in Link2                                      | 35466 | 0 | 38596 | 48    | RW | Word |  | 0...8        | num    |

|    |        |                                                      |       |   |       |       |    |      |   |              |        |
|----|--------|------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|--------|
| V4 | V4-L12 | Alarm relay sharing in Link2                         | 35467 | 0 | 38596 | 192   | RW | Word |   | 0...2        | num    |
| V4 | V4-L13 | Link2 serial frame configuration                     | 35727 | 0 | 38595 | 12288 | RW | Word |   | 0...1        | flag   |
| V4 | V4-L14 | Force cool mode                                      | 35743 | 0 | 38598 | 3     | RW | Word |   | 0...1        | flag   |
| V4 | V4-L15 | Shared buzzer and alarm silenced via Link2           | 33035 | 0 | 38184 | 48    | RW | Word |   | 0...2        | num    |
| V4 | V4-dcS | Deep cooling setpoint                                | 35650 | 0 | 38579 | 768   | RW | Word | Y | -58.0...302  | °C/°F  |
| V4 | V4-tdC | Deep cooling duration                                | 35651 | 0 | 38579 | 3072  | RW | Word |   | 0...250      | min    |
| V4 | V4-dCC | Defrost delay after deep cooling                     | 35652 | 0 | 38579 | 12288 | RW | Word |   | 0...250      | min    |
| V4 | V4-ESt | Type of action for the Energy Saving function        | 35579 | 0 | 38579 | 49152 | RW | Word |   | 0...8        | num    |
| V4 | V4-ESF | Night mode activation (Energy Saving)                | 35647 | 0 | 38580 | 3     | RW | Word |   | 0...1        | flag   |
| V4 | V4-Cdt | Door closing time                                    | 35648 | 0 | 38580 | 12    | RW | Word |   | 0...255      | min*10 |
| V4 | V4-ESo | Low consumption mode disabling timeout (door switch) | 35649 | 0 | 38580 | 48    | RW | Word |   | 0...10       | num    |
| V4 | V4-OS1 | Offset on setpoint 1                                 | 35596 | 0 | 38580 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V4 | V4-OS2 | Offset on setpoint 2                                 | 35597 | 0 | 38580 | 768   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V4 | V4-Od1 | Refrigerated cabinets energy saving offset 1         | 35598 | 0 | 38580 | 3072  | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V4 | V4-Od2 | Refrigerated cabinets energy saving offset 2         | 35599 | 0 | 38580 | 12288 | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V4 | V4-dn1 | Differential during energy saving mode 1             | 35587 | 0 | 38580 | 49152 | RW | Word | Y | -58.0...302  | °C/°F  |
| V4 | V4-dn2 | Differential during energy saving mode 2             | 35588 | 0 | 38581 | 3     | RW | Word | Y | -58.0...302  | °C/°F  |
| V4 | V4-EdH | Weekday energy saving start hour                     | 35573 | 0 | 38581 | 12    | RW | Word |   | 0...24       | hours  |
| V4 | V4-Edn | Weekday energy saving start minutes                  | 35574 | 0 | 38581 | 48    | RW | Word |   | 0...59       | min    |
| V4 | V4-Edd | Weekday energy saving duration                       | 35575 | 0 | 38581 | 192   | RW | Word |   | 1...72       | hours  |
| V4 | V4-EFH | Weekend/holiday energy saving start hour             | 35576 | 0 | 38581 | 768   | RW | Word |   | 0...24       | hours  |
| V4 | V4-EFn | Weekend/holiday energy saving start minutes          | 35577 | 0 | 38581 | 3072  | RW | Word |   | 0...59       | min    |
| V4 | V4-EFd | Weekend/holiday energy saving duration               | 35578 | 0 | 38581 | 12288 | RW | Word |   | 1...72       | hours  |
| V4 | V4-FH  | Frame heater probe selection                         | 35679 | 0 | 38581 | 49152 | RW | Word |   | 0...9        | num    |
| V4 | V4-FHt | Frame heater period                                  | 35681 | 0 | 38582 | 3     | RW | Word |   | 1...250      | s      |
| V4 | V4-FH0 | Frame heater set                                     | 35682 | 0 | 38582 | 12    | RW | Word | Y | -58.0...302  | °C/°F  |
| V4 | V4-FH1 | Frame heater offset                                  | 35683 | 0 | 38582 | 48    | RW | Word |   | 0.0...25.0   | °C/°F  |
| V4 | V4-FH2 | Frame heater band                                    | 35684 | 0 | 38582 | 192   | RW | Word | Y | -58.0...302  | °C/°F  |
| V4 | V4-FH3 | Frame heater minimum percentage/duty-cycle           | 35685 | 0 | 38582 | 768   | RW | Word |   | 0...100      | %      |
| V4 | V4-FH4 | Frame heater maximum percentage/day duty-cycle       | 35686 | 0 | 38582 | 3072  | RW | Word |   | 0...100      | %      |
| V4 | V4-FH5 | Frame heater maximum percentage/night duty-cycle     | 35687 | 0 | 38582 | 12288 | RW | Word |   | 0...100      | %      |



|    |        |                                               |       |   |       |       |    |      |   |                |         |
|----|--------|-----------------------------------------------|-------|---|-------|-------|----|------|---|----------------|---------|
| V4 | V4-FH6 | Frame heater percentage/duty-cycle in defrost | 35688 | 0 | 38582 | 49152 | RW | Word |   | 0...100        | %       |
| V4 | V4-LOC | Disable terminal                              | 35691 | 0 | 38583 | 3     | RW | Word |   | 0...1          | flag    |
| V4 | V4-PS1 | Password 1 value                              | 35692 | 0 | 38583 | 12    | RW | Word |   | 0...250        | num     |
| V4 | V4-PS2 | Password 2 value                              | 35693 | 0 | 38583 | 48    | RW | Word |   | 0...250        | num     |
| V4 | V4-ndt | Display with decimal point                    | 35694 | 0 | 38583 | 192   | RW | Word |   | 0...1          | flag    |
| V4 | V4-CA1 | Analog input 1 calibration                    | 35500 | 0 | 38583 | 768   | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V4 | V4-CA2 | Analog input 2 calibration                    | 35501 | 0 | 38583 | 3072  | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V4 | V4-CA3 | Analog input 3 calibration                    | 35502 | 0 | 38583 | 12288 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V4 | V4-CA4 | Analog input 4 calibration                    | 35503 | 0 | 38583 | 49152 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V4 | V4-CA5 | Analog input 5 calibration                    | 35504 | 0 | 38584 | 3     | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V4 | V4-CA6 | Analog input 6 calibration                    | 35505 | 0 | 38584 | 12    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V4 | V4-CA7 | Analog input 7 calibration                    | 35506 | 0 | 38584 | 48    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V4 | V4-LdL | Minimum display value                         | 35695 | 0 | 38584 | 192   | RW | Word | Y | -58.0...V4-HdL | °C/°F   |
| V4 | V4-HdL | Maximum display value                         | 35696 | 0 | 38584 | 768   | RW | Word | Y | V4-LdL...302   | °C/°F   |
| V4 | V4-ddL | Display lock mode during a defrost            | 35697 | 0 | 38584 | 3072  | RW | Word |   | 0...2          | num     |
| V4 | V4-Ldd | Display lock timeout from end of defrost      | 35698 | 0 | 38584 | 12288 | RW | Word |   | 0...250        | min     |
| V4 | V4-dro | Select °C / °F                                | 35699 | 0 | 38584 | 49152 | RW | Word |   | 0...1          | flag    |
| V4 | V4-SbP | Pressure unit of measure                      | 35700 | 0 | 38585 | 3     | RW | Word |   | 0...1          | flag    |
| V4 | V4-ddd | Select main display value                     | 35701 | 0 | 38585 | 12    | RW | Word |   | 0...8          | num     |
| V4 | V4-ddE | Resource displayed on ECHO                    | 35702 | 0 | 38585 | 48    | RW | Word |   | 0...11         | num     |
| V4 | V4-rPH | Receiver maximum valve opening %              | 35653 | 0 | 38585 | 192   | RW | Word |   | 0...5          | num     |
| V4 | V4-H00 | Select analog input type NTC/PTC              | 35468 | 0 | 38585 | 768   | RW | Word |   | 0...2          | num     |
| V4 | V4-H02 | Function activation time from terminal        | 35703 | 0 | 38585 | 3072  | RW | Word |   | 0...250        | s       |
| V4 | V4-H08 | Stand-by operating mode                       | 35705 | 0 | 38585 | 12288 | RW | Word |   | 0...2          | num     |
| V4 | V4-H11 | Digital input 1 configurability and polarity  | 35471 | 0 | 38585 | 49152 | RW | Word | Y | -19...19       | num     |
| V4 | V4-H12 | Digital input 2 configurability and polarity  | 35472 | 0 | 38586 | 3     | RW | Word | Y | -19...19       | num     |
| V4 | V4-H13 | Digital input 3 configurability and polarity  | 35473 | 0 | 38586 | 12    | RW | Word | Y | -19...19       | num     |
| V4 | V4-H14 | Digital input 4 configurability and polarity  | 35474 | 0 | 38586 | 48    | RW | Word | Y | -19...19       | num     |
| V4 | V4-H15 | Digital input 5 configurability and polarity  | 35475 | 0 | 38586 | 192   | RW | Word | Y | -19...19       | num     |
| V4 | V4-H16 | Digital input 6 configurability and polarity  | 35476 | 0 | 38586 | 768   | RW | Word | Y | -19...19       | num     |

|    |        |                                               |       |   |       |       |    |      |   |          |      |
|----|--------|-----------------------------------------------|-------|---|-------|-------|----|------|---|----------|------|
| V4 | V4-H17 | Digital input 7 configurability and polarity  | 35477 | 0 | 38586 | 3072  | RW | Word | Y | -19...19 | num  |
| V4 | V4-H18 | Digital input 8 configurability and polarity  | 35478 | 0 | 38586 | 12288 | RW | Word | Y | -19...19 | num  |
| V4 | V4-i01 | Digital input 9 configurability and polarity  | 35738 | 0 | 38597 | 192   | RW | Word | Y | -19...19 | num  |
| V4 | V4-i02 | Digital input 10 configurability and polarity | 35739 | 0 | 38597 | 768   | RW | Word | Y | -19...19 | num  |
| V4 | V4-dti | Digital inputs 1 and 2 delay unit of measure  | 35487 | 0 | 38586 | 49152 | RW | Word |   | 0...1    | flag |
| V4 | V4-d11 | D.I. 1 activation indication delay time       | 35479 | 0 | 38587 | 3     | RW | Word |   | 0...255  | min  |
| V4 | V4-d12 | D.I. 2 activation indication delay time       | 35480 | 0 | 38587 | 12    | RW | Word |   | 0...255  | min  |
| V4 | V4-d13 | D.I. 3 activation indication delay time       | 35481 | 0 | 38587 | 48    | RW | Word |   | 0...255  | min  |
| V4 | V4-d14 | D.I. 4 activation indication delay time       | 35482 | 0 | 38587 | 192   | RW | Word |   | 0...255  | min  |
| V4 | V4-d15 | D.I. 5 activation indication delay time       | 35483 | 0 | 38587 | 768   | RW | Word |   | 0...255  | min  |
| V4 | V4-d16 | D.I. 6 activation indication delay time       | 35484 | 0 | 38587 | 3072  | RW | Word |   | 0...255  | min  |
| V4 | V4-d17 | D.I. 7 activation indication delay time       | 35485 | 0 | 38587 | 12288 | RW | Word |   | 0...255  | min  |
| V4 | V4-d18 | D.I. 8 activation indication delay time       | 35486 | 0 | 38587 | 49152 | RW | Word |   | 0...255  | min  |
| V4 | V4-01i | D.I. 9 activation indication delay time       | 35740 | 0 | 38597 | 3072  | RW | Word |   | 0...255  | min  |
| V4 | V4-02i | D.I. 10 activation indication delay time      | 35741 | 0 | 38597 | 12288 | RW | Word |   | 0...255  | min  |
| V4 | V4-H21 | Configurability of digital output 1           | 35508 | 0 | 38588 | 3     | RW | Word |   | 0...19   | num  |
| V4 | V4-H22 | Configurability of digital output 2           | 35509 | 0 | 38588 | 12    | RW | Word |   | 0...19   | num  |
| V4 | V4-H23 | Configurability of digital output 3           | 35510 | 0 | 38588 | 48    | RW | Word |   | 0...19   | num  |
| V4 | V4-H24 | Configurability of digital output 4           | 35511 | 0 | 38588 | 192   | RW | Word |   | 0...19   | num  |
| V4 | V4-H25 | Configurability of digital output 5           | 35512 | 0 | 38588 | 768   | RW | Word |   | 0...19   | num  |
| V4 | V4-H27 | Configurability of digital output 7           | 35514 | 0 | 38588 | 12288 | RW | Word |   | 0...19   | num  |
| V4 | V4-H29 | Enable buzzer                                 | 35515 | 0 | 38588 | 49152 | RW | Word |   | 0...1    | num  |
| V4 | V4-d01 | Configurability of digital output 8           | 35731 | 0 | 38596 | 768   | RW | Word |   | 0...19   | num  |
| V4 | V4-d02 | Configurability of digital output 9           | 35732 | 0 | 38596 | 3072  | RW | Word |   | 0...19   | num  |
| V4 | V4-H31 | Configurability of the UP key                 | 35706 | 0 | 38589 | 3     | RW | Word |   | 0...9    | num  |
| V4 | V4-H32 | Configurability of the DOWN key               | 35707 | 0 | 38589 | 12    | RW | Word |   | 0...9    | num  |
| V4 | V4-H33 | Configurability of the ESC key                | 35708 | 0 | 38589 | 48    | RW | Word |   | 0...9    | num  |
| V4 | V4-H34 | Configurability of the Free 1 key             | 35709 | 0 | 38589 | 192   | RW | Word |   | 0...9    | num  |
| V4 | V4-H35 | Configurability of the Free 2 key             | 35710 | 0 | 38589 | 768   | RW | Word |   | 0...9    | num  |

|    |        |                                                                             |       |   |       |       |    |      |   |                 |       |
|----|--------|-----------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V4 | V4-H36 | Configurability of the Free 3 key                                           | 35711 | 0 | 38589 | 3072  | RW | Word |   | 0...9           | num   |
| V4 | V4-H37 | Configurability of the Free 4 key                                           | 35712 | 0 | 38589 | 12288 | RW | Word |   | 0...9           | num   |
| V4 | V4-H41 | Configurability of analog input 1                                           | 35488 | 0 | 38589 | 49152 | RW | Word |   | 0...2           | num   |
| V4 | V4-H42 | Configurability of analog input 2                                           | 35489 | 0 | 38590 | 3     | RW | Word |   | 0...2           | num   |
| V4 | V4-H43 | Configurability of analog input 3                                           | 35490 | 0 | 38590 | 12    | RW | Word |   | 0...2           | num   |
| V4 | V4-H44 | Configurability of analog input 4                                           | 35491 | 0 | 38590 | 48    | RW | Word |   | 0...2           | num   |
| V4 | V4-H45 | Configurability of analog input 5                                           | 35492 | 0 | 38590 | 192   | RW | Word |   | 0...2           | num   |
| V4 | V4-H46 | Configurability of analog input 6                                           | 35493 | 0 | 38590 | 768   | RW | Word |   | 0...2           | num   |
| V4 | V4-H47 | Configurability of analog input 7                                           | 35494 | 0 | 38590 | 3072  | RW | Word |   | 0...2           | num   |
| V4 | V4-H48 | Configurability of analog input 8                                           | 35742 | 0 | 38597 | 49152 | RW | Word |   | 0...2           | num   |
| V4 | V4-H50 | Configurability of analog output 1                                          | 35516 | 0 | 38590 | 12288 | RW | Word |   | 0...1           | num   |
| V4 | V4-H51 | Function associated with analog output                                      | 35517 | 0 | 38590 | 49152 | RW | Word |   | 0...3           | num   |
| V4 | V4-H68 | RTC present                                                                 | 35518 | 0 | 38591 | 3     | RW | Word |   | 0...1           | num   |
| V4 | V4-H70 | Selection of 1st sensor for virtual probe                                   | 35496 | 0 | 38591 | 12    | RW | Word |   | 0...5           | num   |
| V4 | V4-H71 | Selection of 2nd sensor for virtual probe                                   | 35497 | 0 | 38591 | 48    | RW | Word |   | 0...5           | num   |
| V4 | V4-H72 | Day virtual probe calculation %                                             | 35498 | 0 | 38591 | 192   | RW | Word |   | 0...100         | %     |
| V4 | V4-H73 | Night virtual probe calculation %                                           | 35499 | 0 | 38591 | 768   | RW | Word |   | 0...100         | %     |
| V4 | V4-H74 | Selection of 1st sensor for filtered virtual probe                          | 35727 | 0 | 38595 | 49152 | RW | Word |   | 0...65635       | num   |
| V4 | V4-H75 | Percentage in thousandths of the incoming signal for filtered virtual probe | 35728 | 0 | 38596 | 3     | RW | Word |   | 0...65635       | num   |
| V4 | V4-H76 | Filtered virtual probe offset                                               | 35730 | 0 | 38596 | 12    | RW | Word |   | 0...65635       | num   |
| V4 | V4-EtY | Selection of electronic expansion valve driver                              | 35713 | 0 | 38591 | 3072  | RW | Word |   | 0...1           | flag  |
| V4 | UL     | Visibility of parameter transfer function (Device -> UNICARD/MFK)           | -     | - | 38594 | 3     | RW | Word |   | 0...3           | num   |
| V4 | dL     | Visibility of parameter transfer function (UNICARD/MFK -> Device)           | -     | - | 38594 | 12    | RW | Word |   | 0...3           | num   |
| V4 | Fr     | Visibility of UNICARD/MFK formatting function                               | -     | - | 38594 | 48    | RW | Word |   | 0...3           | num   |
| V4 | V4-OHP | Selection of oil temperature probe                                          | 35720 | 0 | 38594 | 12288 | RW | Word |   | 0...8           | num   |
| V4 | V4-OSP | Oil heater setpoint                                                         | 35721 | 0 | 38594 | 49152 | RW | Word | Y | V4-OLS...V4-OHS | °C/°F |
| V4 | V4-OHd | Oil heater differential                                                     | 35722 | 0 | 38595 | 3     | RW | Word |   | 0.1...25.0      | °C/°F |
| V4 | V4-OHS | Maximum oil heater setpoint value that can be set                           | 35724 | 0 | 38595 | 48    | RW | Word | Y | V4-OLS...302    | °C/°F |
| V4 | V4-OLS | Minimum oil heater setpoint value that can be set                           | 35725 | 0 | 38595 | 192   | RW | Word | Y | -58.0...V4-OHS  | °C/°F |

| Application 5 parameters |        |                                                           |       |   |       |       |    |      |   |                 |       |
|--------------------------|--------|-----------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V5                       | V5-rE  | Regulation type                                           | 35964 | 0 | 38656 | 3     | RW | Word |   | 0...6           | num   |
| V5                       | V5-rP1 | Thermostat regulation probe 1                             | 35965 | 0 | 38656 | 12    | RW | Word |   | 0...8           | num   |
| V5                       | V5-rP2 | Thermostat regulation probe 2                             | 35966 | 0 | 38656 | 48    | RW | Word |   | 0...9           | num   |
| V5                       | V5-SP1 | Regulation setpoint 1                                     | 35967 | 0 | 38656 | 192   | RW | Word | Y | V5-LS1...V5-HS1 | °C/°F |
| V5                       | V5-dF1 | Setpoint differential 1                                   | 35968 | 0 | 38656 | 768   | RW | Word | Y | -58.0...302     | °C/°F |
| V5                       | V5-SP2 | Regulation setpoint 2                                     | 35969 | 0 | 38656 | 3072  | RW | Word | Y | V5-LS2...V5-HS2 | °C/°F |
| V5                       | V5-dF2 | Setpoint differential 2                                   | 35970 | 0 | 38656 | 12288 | RW | Word | Y | -58.0...302     | °C/°F |
| V5                       | V5-Stt | Differential management mode                              | 35973 | 0 | 38656 | 49152 | RW | Word |   | 0...1           | flag  |
| V5                       | V5-HS1 | Maximum value that can be set for Setpoint 1              | 35976 | 0 | 38657 | 3     | RW | Word | Y | V5-LS1...V5-HdL | °C/°F |
| V5                       | V5-LS1 | Minimum value that can be set for Setpoint 1              | 35977 | 0 | 38657 | 12    | RW | Word | Y | V5-LdL...V5-HS1 | °C/°F |
| V5                       | V5-HS2 | Maximum value that can be set for Setpoint 2              | 35978 | 0 | 38657 | 48    | RW | Word | Y | V5-LS2...V5-HdL | °C/°F |
| V5                       | V5-LS2 | Minimum value that can be set for Setpoint 2              | 35979 | 0 | 38657 | 192   | RW | Word | Y | V5-LdL...V5-HS2 | °C/°F |
| V5                       | V5-HC1 | Setpoint 1 operating mode (Heating/Cooling)               | 35974 | 0 | 38657 | 768   | RW | Word |   | 0...1           | flag  |
| V5                       | V5-HC2 | Setpoint 2 operating mode (Heating/Cooling)               | 35975 | 0 | 38657 | 3072  | RW | Word |   | 0...1           | flag  |
| V5                       | V5-Cit | Minimum compressor output activation time                 | 35984 | 0 | 38657 | 49152 | RW | Word |   | 0...250         | min   |
| V5                       | V5-CAt | Maximum compressor output activation time                 | 35985 | 0 | 38658 | 3     | RW | Word |   | 0...250         | min   |
| V5                       | V5-Ont | Compressor output ON time if regulation probe is faulty   | 35990 | 0 | 38658 | 12    | RW | Word |   | 0...250         | min   |
| V5                       | V5-OFt | Compressor output OFF time if regulation probe is faulty  | 35991 | 0 | 38658 | 48    | RW | Word |   | 0...250         | min   |
| V5                       | V5-dOn | Compressor output activation delay from call              | 35986 | 0 | 38658 | 192   | RW | Word |   | 0...250         | s     |
| V5                       | V5-dOF | Compressor output activation delay from switch-off        | 35987 | 0 | 38658 | 768   | RW | Word |   | 0...250         | min   |
| V5                       | V5-dbi | Delay between two consecutive compressor output power-ons | 35988 | 0 | 38658 | 3072  | RW | Word |   | 0...250         | min   |
| V5                       | V5-OdO | Output activation delay at startup                        | 35989 | 0 | 38658 | 12288 | RW | Word |   | 0...250         | min   |
| V5                       | V5-CFP | Condenser pre-ventilation time in Heat/Cool               | 36073 | 0 | 38659 | 12    | RW | Word |   | 0...255         | s     |
| V5                       | V5-CFd | Condenser fan cut-out during defrosting.                  | 36074 | 0 | 38659 | 48    | RW | Word |   | 0...1           | flag  |
| V5                       | V5-OF1 | Remote offset                                             | 35995 | 0 | 38659 | 192   | RW | Word | Y | -50.0...50.0    | °C/°F |
| V5                       | V5-Pot | Pump down time                                            | 36101 | 0 | 38690 | 192   | RW | Word |   | 0...250         | s     |
| V5                       | V5-SS1 | Compressor softstart: advance hotgas valve opening        | 36102 | 0 | 38690 | 768   | RW | Word |   | 0...250         | s     |
| V5                       | V5-SS2 | Compressor softstart: delay hotgas valve closing          | 36103 | 0 | 38690 | 3072  | RW | Word |   | 0...250         | s     |

|    |        |                                                                 |       |   |       |       |    |      |   |             |       |
|----|--------|-----------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V5 | V5-dP1 | Select defrost probe 1                                          | 35996 | 0 | 38659 | 768   | RW | Word |   | 0...8       | num   |
| V5 | V5-dP2 | Defrost probe 2 selection                                       | 35997 | 0 | 38659 | 3072  | RW | Word |   | 0...8       | num   |
| V5 | V5-dty | Type of defrost                                                 | 36000 | 0 | 38659 | 12288 | RW | Word |   | 0...4       | num   |
| V5 | V5-dFt | Dual evaporator defrost activation mode                         | 35998 | 0 | 38659 | 49152 | RW | Word |   | 0...2       | num   |
| V5 | V5-dit | Interval between defrosts                                       | 36001 | 0 | 38660 | 3     | RW | Word |   | 0...250     | hours |
| V5 | V5-dt1 | Unit of measure for defrost intervals                           | 36004 | 0 | 38660 | 12    | RW | Word |   | 0...2       | num   |
| V5 | V5-dt2 | Unit of measure for defrost duration                            | 36005 | 0 | 38660 | 48    | RW | Word |   | 0...2       | num   |
| V5 | V5-dCt | Defrost interval count mode                                     | 35999 | 0 | 38660 | 192   | RW | Word |   | 0...5       | num   |
| V5 | V5-dOH | Defrost cycle activation delay from the call                    | 36006 | 0 | 38660 | 768   | RW | Word |   | 0...250     | min   |
| V5 | V5-dE1 | Evaporator 1 defrost maximum duration                           | 36002 | 0 | 38660 | 3072  | RW | Word |   | 1...250     | min   |
| V5 | V5-dE2 | Evaporator 2 defrost maximum duration                           | 36003 | 0 | 38660 | 12288 | RW | Word |   | 1...250     | min   |
| V5 | V5-dS1 | Evaporator 1 defrost end temperature                            | 36008 | 0 | 38660 | 49152 | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-dS2 | Evaporator 2 defrost end temperature                            | 36009 | 0 | 38661 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-dSS | Temperature threshold for starting defrost                      | 36007 | 0 | 38661 | 12    | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-dPO | Defrost activation request at power-on                          | 36010 | 0 | 38661 | 48    | RW | Word |   | 0...1       | flag  |
| V5 | V5-tcd | Compressor output activation/deactivation time before a defrost | 36011 | 0 | 38661 | 192   | RW | Word | Y | -60...60    | min   |
| V5 | V5-ndE | minimum defrost duration time                                   | 36012 | 0 | 38661 | 768   | RW | Word |   | 0...250     | min   |
| V5 | V5-PdC | Hot gas extraction time at the end of the defrost               | 36013 | 0 | 38661 | 3072  | RW | Word |   | 0...250     | min   |
| V5 | V5-tPd | Pump down time before defrost start                             | 36015 | 0 | 38661 | 12288 | RW | Word |   | 0...255     | min   |
| V5 | V5-dPH | Regular defrost start hour                                      | 35954 | 0 | 38661 | 49152 | RW | Word |   | 0...24      | hours |
| V5 | V5-dPn | Regular defrost start minutes                                   | 35955 | 0 | 38662 | 3     | RW | Word |   | 0...59      | min   |
| V5 | V5-dPd | Regular defrost interval duration                               | 35956 | 0 | 38662 | 12    | RW | Word |   | 1...7       | day   |
| V5 | V5-Fd1 | 1st weekend/holiday day                                         | 35903 | 0 | 38662 | 48    | RW | Word |   | 0...7       | num   |
| V5 | V5-Fd2 | 2nd weekend/holiday day                                         | 35904 | 0 | 38662 | 192   | RW | Word |   | 0...7       | num   |
| V5 | V5-Edt | Timeout and defrost end temperature specific to each event      | 35905 | 0 | 38662 | 768   | RW | Word |   | 0...1       | flag  |
| V5 | V5-Fdn | Weekday defrost number                                          | 35853 | 0 | 38696 | 3     | RW | Word |   | 0...250     | num   |
| V5 | V5-FFn | Weekend/holiday defrost number                                  | 35854 | 0 | 38696 | 12    | RW | Word |   | 0...250     | num   |
| V5 | V5-PrH | Basin heater pre-activation time                                | 36110 | 0 | 38691 | 3072  | RW | Word |   | 0...255     | min   |
| V5 | V5-d1H | Weekday defrost no. 1 start hour                                | 35906 | 0 | 38662 | 3072  | RW | Word |   | 0...24      | hours |
| V5 | V5-d1n | Weekday defrost no. 1 start minute                              | 35907 | 0 | 38662 | 12288 | RW | Word |   | 0...59      | min   |
| V5 | V5-d1t | 1st weekday defrost duration                                    | 35908 | 0 | 38662 | 49152 | RW | Word |   | 0...250     | min   |

|    |        |                                             |       |   |       |       |    |      |   |             |       |
|----|--------|---------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V5 | V5-d1S | 1st weekday defrost end temperature         | 35909 | 0 | 38663 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-d2H | Weekday defrost no. 2 start hour            | 35910 | 0 | 38663 | 12    | RW | Word |   | V5-d1H...24 | hours |
| V5 | V5-d2n | Weekday defrost no. 2 start minutes         | 35911 | 0 | 38663 | 48    | RW | Word |   | 0...59      | min   |
| V5 | V5-d2t | 2nd weekday defrost duration                | 35912 | 0 | 38663 | 192   | RW | Word |   | 0...250     | min   |
| V5 | V5-d2S | 2nd weekday defrost end temperature         | 35913 | 0 | 38663 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-d3H | Weekday defrost no. 3 start hour            | 35914 | 0 | 38663 | 3072  | RW | Word |   | V5-d2H...24 | hours |
| V5 | V5-d3n | Weekday defrost no. 3 start minutes         | 35915 | 0 | 38663 | 12288 | RW | Word |   | 0...59      | min   |
| V5 | V5-d3t | 3rd weekday defrost duration                | 35916 | 0 | 38663 | 49152 | RW | Word |   | 0...250     | min   |
| V5 | V5-d3S | 3rd weekday defrost end temperature         | 35917 | 0 | 38664 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-d4H | Weekday defrost no. 4 start hour            | 35918 | 0 | 38664 | 12    | RW | Word |   | V5-d3H...24 | hours |
| V5 | V5-d4n | Weekday defrost no. 4 start minutes         | 35919 | 0 | 38664 | 48    | RW | Word |   | 0...59      | min   |
| V5 | V5-d4t | 4th weekday defrost duration                | 35920 | 0 | 38664 | 192   | RW | Word |   | 0...250     | min   |
| V5 | V5-d4S | 4th weekday defrost end temperature         | 35921 | 0 | 38664 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-d5H | Weekday defrost no. 5 start hour            | 35922 | 0 | 38664 | 3072  | RW | Word |   | V5-d4H...24 | hours |
| V5 | V5-d5n | Weekday defrost no. 5 start minutes         | 35923 | 0 | 38664 | 12288 | RW | Word |   | 0...59      | min   |
| V5 | V5-d5t | 5th weekday defrost duration                | 35924 | 0 | 38664 | 49152 | RW | Word |   | 0...250     | min   |
| V5 | V5-d5S | 5th weekday defrost end temperature         | 35925 | 0 | 38665 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-d6H | Weekday defrost no. 6 start hour            | 35926 | 0 | 38665 | 12    | RW | Word |   | V5-d5H...24 | hours |
| V5 | V5-d6n | Weekday defrost no. 6 start minutes         | 35927 | 0 | 38665 | 48    | RW | Word |   | 0...59      | min   |
| V5 | V5-d6t | 6th weekday defrost duration                | 35928 | 0 | 38665 | 192   | RW | Word |   | 0...250     | min   |
| V5 | V5-d6S | 6th weekday defrost end temperature         | 35929 | 0 | 38665 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-F1H | Weekend/holiday defrost no. 1 start hour    | 35930 | 0 | 38665 | 3072  | RW | Word |   | 0...24      | hours |
| V5 | V5-F1n | Weekend/holiday defrost no. 1 start minute  | 35931 | 0 | 38665 | 12288 | RW | Word |   | 0...59      | min   |
| V5 | V5-F1t | 1st weekend/holiday defrost duration        | 35932 | 0 | 38665 | 49152 | RW | Word |   | 0...250     | min   |
| V5 | V5-F1S | 1st weekend/holiday defrost end temperature | 35933 | 0 | 38666 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-F2H | Weekend/holiday defrost no. 2 start hour    | 35934 | 0 | 38666 | 12    | RW | Word |   | V5-F1H...24 | hours |
| V5 | V5-F2n | Weekend/holiday defrost no. 2 start minutes | 35935 | 0 | 38666 | 48    | RW | Word |   | 0...59      | min   |
| V5 | V5-F2t | 2nd weekend/holiday defrost duration        | 35936 | 0 | 38666 | 192   | RW | Word |   | 0...250     | min   |
| V5 | V5-F2S | 2nd weekend/holiday defrost end temperature | 35937 | 0 | 38666 | 768   | RW | Word | Y | -58.0...302 | °C/°F |

|    |        |                                                            |       |   |       |       |    |      |   |             |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V5 | V5-F3H | Weekend/holiday defrost no. 3 start hour                   | 35938 | 0 | 38666 | 3072  | RW | Word |   | V5-F2H...24 | hours |
| V5 | V5-F3n | Weekend/holiday defrost no. 3 start minutes                | 35939 | 0 | 38666 | 12288 | RW | Word |   | 0...59      | min   |
| V5 | V5-F3t | 3rd weekend/holiday defrost duration                       | 35940 | 0 | 38666 | 49152 | RW | Word |   | 0...250     | min   |
| V5 | V5-F3S | 3rd weekend/holiday defrost end temperature                | 35941 | 0 | 38667 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-F4H | Weekend/holiday defrost no. 4 start hour                   | 35942 | 0 | 38667 | 12    | RW | Word |   | V5-F3H...24 | hours |
| V5 | V5-F4n | Weekend/holiday defrost no. 4 start minutes                | 35943 | 0 | 38667 | 48    | RW | Word |   | 0...59      | min   |
| V5 | V5-F4t | 4th weekend/holiday defrost duration                       | 35944 | 0 | 38667 | 192   | RW | Word |   | 0...250     | min   |
| V5 | V5-F4S | 4th weekend/holiday defrost end temperature                | 35945 | 0 | 38667 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-F5H | Weekend/holiday defrost no. 5 start hour                   | 35946 | 0 | 38667 | 3072  | RW | Word |   | V5-F4H...24 | hours |
| V5 | V5-F5n | Weekend/holiday defrost no. 5 start minutes                | 35947 | 0 | 38667 | 12288 | RW | Word |   | 0...59      | min   |
| V5 | V5-F5t | 5th weekend/holiday defrost duration                       | 35948 | 0 | 38667 | 49152 | RW | Word |   | 0...250     | min   |
| V5 | V5-F5S | 5th weekend/holiday defrost end temperature                | 35949 | 0 | 38668 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-F6H | Weekend/holiday defrost no. 6 start hour                   | 35950 | 0 | 38668 | 12    | RW | Word |   | V5-F5H...24 | hours |
| V5 | V5-F6n | Weekend/holiday defrost no. 6 start minutes                | 35951 | 0 | 38668 | 48    | RW | Word |   | 0...59      | min   |
| V5 | V5-F6t | 6th weekend/holiday defrost duration                       | 35952 | 0 | 38668 | 192   | RW | Word |   | 0...250     | min   |
| V5 | V5-F6S | 6th weekend/holiday defrost end temperature                | 35953 | 0 | 38668 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-FP1 | Selection of evaporator fan probe in normal mode           | 36016 | 0 | 38668 | 3072  | RW | Word |   | 0...7       | num   |
| V5 | V5-FP2 | Selection of evaporator fan probe in defrost               | 36017 | 0 | 38668 | 12288 | RW | Word |   | 0...7       | num   |
| V5 | V5-FPt | FSt parameter mode (absolute or relative)                  | 36018 | 0 | 38668 | 49152 | RW | Word |   | 0...1       | flag  |
| V5 | V5-FSt | Evaporator fan disabling temperature                       | 36019 | 0 | 38669 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V5 | V5-FAd | Evaporator fan trigger differential                        | 36020 | 0 | 38669 | 12    | RW | Word |   | 0.1...25.0  | °C/°F |
| V5 | V5-Fdt | Evaporator fan activation delay time after a defrost cycle | 36021 | 0 | 38669 | 48    | RW | Word |   | 0...250     | min   |
| V5 | V5-dt  | Dripping time                                              | 36026 | 0 | 38669 | 192   | RW | Word |   | 0...250     | min   |
| V5 | V5-dFd | Evaporator fan cut-out during defrost                      | 36024 | 0 | 38669 | 768   | RW | Word |   | 0...1       | flag  |
| V5 | V5-FCO | Evaporator fan status with compressor output Off           | 36023 | 0 | 38669 | 3072  | RW | Word |   | 0...4       | num   |
| V5 | V5-Fod | Evaporator fan status with door open                       | 36025 | 0 | 38669 | 12288 | RW | Word |   | 0...1       | flag  |

|    |        |                                                            |       |   |       |       |    |      |   |                |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|-------|
| V5 | V5-FdC | Evaporator fan shutoff delay after compressor deactivation | 36022 | 0 | 38669 | 49152 | RW | Word |   | 0...250        | min   |
| V5 | V5-FOn | Evaporator fan On time in cyclical regulator mode          | 36027 | 0 | 38670 | 3     | RW | Word |   | 0...250        | min   |
| V5 | V5-FOF | Evaporator fan Off time in cyclical regulator mode         | 36028 | 0 | 38670 | 12    | RW | Word |   | 0...250        | min   |
| V5 | V5-Fnn | Evaporator fan ON time in night mode (duty cycle)          | 36029 | 0 | 38670 | 48    | RW | Word |   | 0...250        | min   |
| V5 | V5-FnF | Evaporator fan OFF time in night mode (duty cycle)         | 36030 | 0 | 38670 | 192   | RW | Word |   | 0...250        | min   |
| V5 | V5-FE1 | Variable speed fan probe selection                         | 36129 | 0 | 38694 | 48    | RW | Word |   | 0...12         | num   |
| V5 | V5-FEt | Setpoint mode                                              | 36130 | 0 | 38694 | 192   | RW | Word |   | 0...1          | flag  |
| V5 | V5-FES | Setpoint                                                   | 36131 | 0 | 38694 | 768   | RW | Word | Y | -58...302      | °C/°F |
| V5 | V5-FEd | Band                                                       | 36132 | 0 | 38694 | 3072  | RW | Word |   | 0.1...50.0     | °C/°F |
| V5 | V5-FEu | Cut-off band                                               | 36133 | 0 | 38694 | 12288 | RW | Word |   | 0.0...25.0     | °C/°F |
| V5 | V5-FEC | Cut-off differential                                       | 36134 | 0 | 38694 | 49152 | RW | Word |   | 0.1...25.0     | °C/°F |
| V5 | V5-FEr | Fan shutoff delay after compressor deactivation            | 36135 | 0 | 38695 | 3     | RW | Word |   | 0...250        | min   |
| V5 | V5-FE2 | Minimum day percentage                                     | 36136 | 0 | 38695 | 12    | RW | Word |   | 0...100        | %     |
| V5 | V5-FE3 | Maximum day percentage with compressor on                  | 36137 | 0 | 38695 | 48    | RW | Word |   | 0...100        | %     |
| V5 | V5-FE4 | Maximum day percentage with compressor off                 | 36138 | 0 | 38695 | 192   | RW | Word |   | 0...100        | %     |
| V5 | V5-FE5 | Minimum night percentage                                   | 36139 | 0 | 38695 | 768   | RW | Word |   | 0...100        | %     |
| V5 | V5-FE6 | Maximum night percentage with compressor on                | 36140 | 0 | 38695 | 3072  | RW | Word |   | 0...100        | %     |
| V5 | V5-FE7 | Maximum night percentage with compressor off               | 36141 | 0 | 38695 | 12288 | RW | Word |   | 0...100        | %     |
| V5 | V5-FE8 | Percentage during defrost                                  | 36142 | 0 | 38695 | 49152 | RW | Word |   | 0...100        | %     |
| V5 | V5-FE9 | Percentage in the event of probe error                     | 36143 | 0 | 38707 | 12    | RW | Word |   | 0...100        | %     |
| V5 | V5-FEA | Maximum pick-up speed                                      | 36144 | 0 | 38707 | 48    | RW | Word |   | 0...100        | %     |
| V5 | V5-FEb | Fan pick-up time                                           | 36145 | 0 | 38707 | 192   | RW | Word |   | 0...250        | s     |
| V5 | V5-FEP | Fan forcing period at pick-up speed                        | 36146 | 0 | 38707 | 768   | RW | Word |   | 0...250        | min   |
| V5 | V5-rA1 | Temperature alarm probe 1 selection                        | 36044 | 0 | 38670 | 768   | RW | Word |   | 0...7          | num   |
| V5 | V5-rA2 | Temperature alarm probe 2 selection                        | 36045 | 0 | 38670 | 3072  | RW | Word |   | 0...7          | num   |
| V5 | V5-Att | Alarm mode (absolute or relative)                          | 36046 | 0 | 38670 | 12288 | RW | Word |   | 0...1          | flag  |
| V5 | V5-AFd | Alarm activation differential                              | 36047 | 0 | 38670 | 49152 | RW | Word |   | 0.1...25.0     | °C/°F |
| V5 | V5-HA1 | Maximum alarm 1 threshold                                  | 36048 | 0 | 38671 | 3     | RW | Word | Y | V5-LA1...302   | °C/°F |
| V5 | V5-LA1 | Minimum alarm 1 threshold                                  | 36049 | 0 | 38671 | 12    | RW | Word | Y | -58.0...V5-HA1 | °C/°F |



|    |        |                                                                           |       |   |       |       |    |      |   |                |        |
|----|--------|---------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|--------|
| V5 | V5-HA2 | Maximum alarm 2 threshold                                                 | 36050 | 0 | 38671 | 48    | RW | Word | Y | V5-LA2...302   | °C/°F  |
| V5 | V5-LA2 | Minimum alarm 2 threshold                                                 | 36051 | 0 | 38671 | 192   | RW | Word | Y | -58.0...V5-HA2 | °C/°F  |
| V5 | V5-PAO | Temperature alarm exclusion time from power-on                            | 36052 | 0 | 38671 | 768   | RW | Word |   | 0...10         | hours  |
| V5 | V5-dAO | Exclusion time for temperature alarms after a defrost cycle               | 36054 | 0 | 38671 | 3072  | RW | Word |   | 0...250        | min    |
| V5 | V5-OAO | High and low temperature alarms exclusion time after closing the door     | 36053 | 0 | 38671 | 12288 | RW | Word |   | 0...10         | hours  |
| V5 | V5-tdO | Door open alarm exclusion time                                            | 36098 | 0 | 38671 | 49152 | RW | Word |   | 0...250        | min    |
| V5 | V5-tA1 | Probe 1 High/Minimum Alarm Delay                                          | 36055 | 0 | 38672 | 3     | RW | Word |   | 0...250        | min    |
| V5 | V5-tA2 | Probe 2 High/Minimum Alarm Delay                                          | 36056 | 0 | 38672 | 12    | RW | Word |   | 0...250        | min    |
| V5 | V5-dAt | Defrost ended due to timeout alarm signaling                              | 36014 | 0 | 38672 | 48    | RW | Word |   | 0...1          | flag   |
| V5 | V5-EAL | Regulators inhibited by external alarm                                    | 36058 | 0 | 38672 | 192   | RW | Word |   | 0...2          | num    |
| V5 | V5-rA3 | Input used by the two threshold/LKD alarm regulator                       | 36117 | 0 | 38692 | 12288 | RW | Word |   | 0...8          | num    |
| V5 | V5-ALL | Low alarm threshold (warning)                                             | 36118 | 0 | 38692 | 49152 | RW | Word |   | 0.0...V5-ALH   | num    |
| V5 | V5-ALH | High alarm threshold (alarm)                                              | 36119 | 0 | 38693 | 3     | RW | Word |   | V5-ALL...100   | num    |
| V5 | V5-dAL | Alarm leak differential                                                   | 36120 | 0 | 38693 | 12    | RW | Word |   | 0.1...100      | °C/°F  |
| V5 | V5-AL1 | Time probe remains above the low threshold due to leak alarm activation   | 36121 | 0 | 38693 | 48    | RW | Word |   | 0...250        | min    |
| V5 | V5-AL2 | Time probe remains above the high threshold due to leak alarm activation  | 36128 | 0 | 38694 | 12    | RW | Word |   | 0...250        | min    |
| V5 | V5-tP  | Enables alarm acknowledgment with any key                                 | 36099 | 0 | 38672 | 768   | RW | Word |   | 0...1          | flag   |
| V5 | V5-Art | Regular watchdog alarm activation period                                  | 36043 | 0 | 38672 | 3072  | RW | Word |   | 0...250        | min*10 |
| V5 | V5-dSd | Enable light relay from door switch                                       | 36040 | 0 | 38672 | 12288 | RW | Word |   | 0...1          | flag   |
| V5 | V5-dLt | Light relay off delay from door closure                                   | 36041 | 0 | 38672 | 49152 | RW | Word |   | 0...250        | min    |
| V5 | V5-OFL | Enable cold room lights off via key during the delay set in parameter dLt | 36042 | 0 | 38673 | 3     | RW | Word |   | 0...1          | flag   |
| V5 | V5-dOd | Enable utility shutoff upon door switch activation                        | 36057 | 0 | 38673 | 12    | RW | Word |   | 0...3          | num    |
| V5 | V5-dOA | Behavior forced by digital input                                          | 36059 | 0 | 38673 | 48    | RW | Word |   | 0...5          | num    |
| V5 | V5-PEA | Enable forced behavior from door switch and/or external alarm.            | 36060 | 0 | 38673 | 192   | RW | Word |   | 0...3          | num    |
| V5 | V5-dCO | Compressor activation delay from acknowledgment                           | 36061 | 0 | 38673 | 768   | RW | Word |   | 0...250        | min    |

|    |         |                                                            |       |   |       |       |    |      |   |              |        |
|----|---------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|--------|
| V5 | V5-dFO  | Fan enabling delay from acknowledgment                     | 36062 | 0 | 38673 | 3072  | RW | Word |   | 0...250      | min    |
| V5 | V5-ASb  | Instrument off active light/auxiliary digital input or key | 36088 | 0 | 38673 | 12288 | RW | Word |   | 0...1        | flag   |
| V5 | V5-L00  | Shared probe                                               | 35840 | 0 | 38673 | 49152 | RW | Word |   | 0...7        | num    |
| V5 | V5-L01  | Distributed viewing (refers to secondary)                  | 35841 | 0 | 38674 | 3     | RW | Word |   | 0...2        | num    |
| V5 | V5-L02  | Setpoint synchronization                                   | 35842 | 0 | 38674 | 12    | RW | Word |   | 0...1        | flag   |
| V5 | V5-L03  | Defrost synchronization                                    | 35843 | 0 | 38674 | 48    | RW | Word |   | 0...2        | num    |
| V5 | V5-L04  | Inhibit resources at the end of defrost                    | 35844 | 0 | 38674 | 192   | RW | Word |   | 0...1        | flag   |
| V5 | V5-L05  | Stand-by synchronization                                   | 35845 | 0 | 38674 | 768   | RW | Word |   | 0...1        | flag   |
| V5 | V5-L06  | Lights synchronization                                     | 35846 | 0 | 38674 | 3072  | RW | Word |   | 0...1        | flag   |
| V5 | V5-L07  | Reduced set synchronization                                | 35847 | 0 | 38674 | 12288 | RW | Word |   | 0...1        | flag   |
| V5 | V5-L08  | AUX synchronization                                        | 35848 | 0 | 38674 | 49152 | RW | Word |   | 0...1        | flag   |
| V5 | V5-L09  | Shared saturation probe                                    | 35849 | 0 | 38675 | 3     | RW | Word |   | 0...1        | flag   |
| V5 | V5-L10  | Resource unlocking timeout during synchronized defrosts    | 36100 | 0 | 38675 | 12    | RW | Word |   | 0...250      | min    |
| V5 | V5-L11  | Number of devices connected in Link2                       | 35850 | 0 | 38692 | 48    | RW | Word |   | 0...8        | num    |
| V5 | V5-L12  | Alarm relay sharing in Link2                               | 35851 | 0 | 38692 | 192   | RW | Word |   | 0...2        | num    |
| V5 | V5-L13  | Link2 serial frame configuration                           | 36111 | 0 | 38691 | 12288 | RW | Word |   | 0...1        | flag   |
| V5 | V5-L14  | Force cool mode                                            | 36127 | 0 | 38694 | 3     | RW | Word |   | 0...1        | flag   |
| V5 | V5-L15  | Shared buzzer and alarm silenced via Link2                 | 36107 | 0 | 38696 | 48    | RW | Word |   | 0...2        | num    |
| V5 | V5-dcS  | Deep cooling setpoint                                      | 36034 | 0 | 38675 | 768   | RW | Word | Y | -58.0...302  | °C/°F  |
| V5 | V5-tdC  | Deep cooling duration                                      | 36035 | 0 | 38675 | 3072  | RW | Word |   | 0...250      | min    |
| V5 | V5-dCC  | Defrost delay after deep cooling                           | 36036 | 0 | 38675 | 12288 | RW | Word |   | 0...250      | min    |
| V5 | V5-ESst | Type of action for the Energy Saving function              | 35963 | 0 | 38675 | 49152 | RW | Word |   | 0...8        | num    |
| V5 | V5-ESF  | Night mode activation (Energy Saving)                      | 36031 | 0 | 38676 | 3     | RW | Word |   | 0...1        | flag   |
| V5 | V5-Cdt  | Door closing time                                          | 36032 | 0 | 38676 | 12    | RW | Word |   | 0...255      | min*10 |
| V5 | V5-ESo  | Low consumption mode disabling timeout (door switch)       | 36033 | 0 | 38676 | 48    | RW | Word |   | 0...10       | num    |
| V5 | V5-OS1  | Offset on setpoint 1                                       | 35980 | 0 | 38676 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V5 | V5-OS2  | Offset on setpoint 2                                       | 35981 | 0 | 38676 | 768   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V5 | V5-Od1  | Refrigerated cabinets energy saving offset 1               | 35982 | 0 | 38676 | 3072  | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V5 | V5-Od2  | Refrigerated cabinets energy saving offset 2               | 35983 | 0 | 38676 | 12288 | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V5 | V5-dn1  | Differential during energy saving mode 1                   | 35971 | 0 | 38676 | 49152 | RW | Word | Y | -58.0...302  | °C/°F  |
| V5 | V5-dn2  | Differential during energy saving mode 2                   | 35972 | 0 | 38677 | 3     | RW | Word | Y | -58.0...302  | °C/°F  |
| V5 | V5-EdH  | Weekday energy saving start hour                           | 35957 | 0 | 38677 | 12    | RW | Word |   | 0...24       | hours  |
| V5 | V5-Edn  | Weekday energy saving start minutes                        | 35958 | 0 | 38677 | 48    | RW | Word |   | 0...59       | min    |

|    |        |                                                  |       |   |       |       |    |      |   |                |         |
|----|--------|--------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|---------|
| V5 | V5-Edd | Weekday energy saving duration                   | 35959 | 0 | 38677 | 192   | RW | Word |   | 1...72         | hours   |
| V5 | V5-EFH | Weekend/holiday energy saving start hour         | 35960 | 0 | 38677 | 768   | RW | Word |   | 0...24         | hours   |
| V5 | V5-EFn | Weekend/holiday energy saving start minutes      | 35961 | 0 | 38677 | 3072  | RW | Word |   | 0...59         | min     |
| V5 | V5-EFd | Weekend/holiday energy saving duration           | 35962 | 0 | 38677 | 12288 | RW | Word |   | 1...72         | hours   |
| V5 | V5-FH  | Frame heater probe selection                     | 36063 | 0 | 38677 | 49152 | RW | Word |   | 0...9          | num     |
| V5 | V5-FHt | Frame heater period                              | 36065 | 0 | 38678 | 3     | RW | Word |   | 1...250        | s       |
| V5 | V5-FH0 | Frame heater set                                 | 36066 | 0 | 38678 | 12    | RW | Word | Y | -58.0...302    | °C/°F   |
| V5 | V5-FH1 | Frame heater offset                              | 36067 | 0 | 38678 | 48    | RW | Word |   | 0.0...25.0     | °C/°F   |
| V5 | V5-FH2 | Frame heater band                                | 36068 | 0 | 38678 | 192   | RW | Word | Y | -58.0...302    | °C/°F   |
| V5 | V5-FH3 | Frame heater minimum percentage/duty-cycle       | 36069 | 0 | 38678 | 768   | RW | Word |   | 0...100        | %       |
| V5 | V5-FH4 | Frame heater maximum percentage/day duty-cycle   | 36070 | 0 | 38678 | 3072  | RW | Word |   | 0...100        | %       |
| V5 | V5-FH5 | Frame heater maximum percentage/night duty-cycle | 36071 | 0 | 38678 | 12288 | RW | Word |   | 0...100        | %       |
| V5 | V5-FH6 | Frame heater percentage/duty-cycle in defrost    | 36072 | 0 | 38678 | 49152 | RW | Word |   | 0...100        | %       |
| V5 | V5-LOC | Disable terminal                                 | 36075 | 0 | 38679 | 3     | RW | Word |   | 0...1          | flag    |
| V5 | V5-PS1 | Password 1 value                                 | 36076 | 0 | 38679 | 12    | RW | Word |   | 0...250        | num     |
| V5 | V5-PS2 | Password 2 value                                 | 36077 | 0 | 38679 | 48    | RW | Word |   | 0...250        | num     |
| V5 | V5-ndt | Display with decimal point                       | 36078 | 0 | 38679 | 192   | RW | Word |   | 0...1          | flag    |
| V5 | V5-CA1 | Analog input 1 calibration                       | 35884 | 0 | 38679 | 768   | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V5 | V5-CA2 | Analog input 2 calibration                       | 35885 | 0 | 38679 | 3072  | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V5 | V5-CA3 | Analog input 3 calibration                       | 35886 | 0 | 38679 | 12288 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V5 | V5-CA4 | Analog input 4 calibration                       | 35887 | 0 | 38679 | 49152 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V5 | V5-CA5 | Analog input 5 calibration                       | 35888 | 0 | 38680 | 3     | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V5 | V5-CA6 | Analog input 6 calibration                       | 35889 | 0 | 38680 | 12    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V5 | V5-CA7 | Analog input 7 calibration                       | 35890 | 0 | 38680 | 48    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V5 | V5-LdL | Minimum display value                            | 36079 | 0 | 38680 | 192   | RW | Word | Y | -58.0...V5-HdL | °C/°F   |
| V5 | V5-HdL | Maximum display value                            | 36080 | 0 | 38680 | 768   | RW | Word | Y | V5-LdL...302   | °C/°F   |
| V5 | V5-ddL | Display lock mode during a defrost               | 36081 | 0 | 38680 | 3072  | RW | Word |   | 0...2          | num     |
| V5 | V5-Ldd | Display lock timeout from end of defrost         | 36082 | 0 | 38680 | 12288 | RW | Word |   | 0...250        | min     |
| V5 | V5-dro | Select °C / °F                                   | 36083 | 0 | 38680 | 49152 | RW | Word |   | 0...1          | flag    |
| V5 | V5-SbP | Pressure unit of measure                         | 36084 | 0 | 38681 | 3     | RW | Word |   | 0...1          | flag    |
| V5 | V5-ddd | Select main display value                        | 36085 | 0 | 38681 | 12    | RW | Word |   | 0...8          | num     |
| V5 | V5-ddE | Resource displayed on ECHO                       | 36086 | 0 | 38681 | 48    | RW | Word |   | 0...11         | num     |

|    |        |                                               |       |   |       |       |    |      |   |          |      |
|----|--------|-----------------------------------------------|-------|---|-------|-------|----|------|---|----------|------|
| V5 | V5-rPH | Receiver maximum valve opening %              | 36037 | 0 | 38681 | 192   | RW | Word |   | 0...5    | num  |
| V5 | V5-H00 | Select analog input type NTC/PTC              | 35852 | 0 | 38681 | 768   | RW | Word |   | 0...2    | num  |
| V5 | V5-H02 | Function activation time from terminal        | 36087 | 0 | 38681 | 3072  | RW | Word |   | 0...250  | s    |
| V5 | V5-H08 | Stand-by operating mode                       | 36089 | 0 | 38681 | 12288 | RW | Word |   | 0...2    | num  |
| V5 | V5-H11 | Digital input 1 configurability and polarity  | 35855 | 0 | 38681 | 49152 | RW | Word | Y | -19...19 | num  |
| V5 | V5-H12 | Digital input 2 configurability and polarity  | 35856 | 0 | 38682 | 3     | RW | Word | Y | -19...19 | num  |
| V5 | V5-H13 | Digital input 3 configurability and polarity  | 35857 | 0 | 38682 | 12    | RW | Word | Y | -19...19 | num  |
| V5 | V5-H14 | Digital input 4 configurability and polarity  | 35858 | 0 | 38682 | 48    | RW | Word | Y | -19...19 | num  |
| V5 | V5-H15 | Digital input 5 configurability and polarity  | 35859 | 0 | 38682 | 192   | RW | Word | Y | -19...19 | num  |
| V5 | V5-H16 | Digital input 6 configurability and polarity  | 35860 | 0 | 38682 | 768   | RW | Word | Y | -19...19 | num  |
| V5 | V5-H17 | Digital input 7 configurability and polarity  | 35861 | 0 | 38682 | 3072  | RW | Word | Y | -19...19 | num  |
| V5 | V5-H18 | Digital input 8 configurability and polarity  | 35862 | 0 | 38682 | 12288 | RW | Word | Y | -19...19 | num  |
| V5 | V5-i01 | Digital input 9 configurability and polarity  | 36122 | 0 | 38693 | 192   | RW | Word | Y | -19...19 | num  |
| V5 | V5-i02 | Digital input 10 configurability and polarity | 36123 | 0 | 38693 | 768   | RW | Word | Y | -19...19 | num  |
| V5 | V5-dti | Digital inputs 1 and 2 delay unit of measure  | 35871 | 0 | 38682 | 49152 | RW | Word |   | 0...1    | flag |
| V5 | V5-d11 | D.I. 1 activation indication delay time       | 35863 | 0 | 38683 | 3     | RW | Word |   | 0...255  | min  |
| V5 | V5-d12 | D.I. 2 activation indication delay time       | 35864 | 0 | 38683 | 12    | RW | Word |   | 0...255  | min  |
| V5 | V5-d13 | D.I. 3 activation indication delay time       | 35865 | 0 | 38683 | 48    | RW | Word |   | 0...255  | min  |
| V5 | V5-d14 | D.I. 4 activation indication delay time       | 35866 | 0 | 38683 | 192   | RW | Word |   | 0...255  | min  |
| V5 | V5-d15 | D.I. 5 activation indication delay time       | 35867 | 0 | 38683 | 768   | RW | Word |   | 0...255  | min  |
| V5 | V5-d16 | D.I. 6 activation indication delay time       | 35868 | 0 | 38683 | 3072  | RW | Word |   | 0...255  | min  |
| V5 | V5-d17 | D.I. 7 activation indication delay time       | 35869 | 0 | 38683 | 12288 | RW | Word |   | 0...255  | min  |
| V5 | V5-d18 | D.I. 8 activation indication delay time       | 35870 | 0 | 38683 | 49152 | RW | Word |   | 0...255  | min  |
| V5 | V5-01i | D.I. 9 activation indication delay time       | 36124 | 0 | 38693 | 3072  | RW | Word |   | 0...255  | min  |
| V5 | V5-02i | D.I. 10 activation indication delay time      | 36125 | 0 | 38693 | 12288 | RW | Word |   | 0...255  | min  |
| V5 | V5-H21 | Configurability of digital output 1           | 35892 | 0 | 38684 | 3     | RW | Word |   | 0...19   | num  |

|    |        |                                                    |       |   |       |       |    |      |  |           |     |
|----|--------|----------------------------------------------------|-------|---|-------|-------|----|------|--|-----------|-----|
| V5 | V5-H22 | Configurability of digital output 2                | 35893 | 0 | 38684 | 12    | RW | Word |  | 0...19    | num |
| V5 | V5-H23 | Configurability of digital output 3                | 35894 | 0 | 38684 | 48    | RW | Word |  | 0...19    | num |
| V5 | V5-H24 | Configurability of digital output 4                | 35895 | 0 | 38684 | 192   | RW | Word |  | 0...19    | num |
| V5 | V5-H25 | Configurability of digital output 5                | 35896 | 0 | 38684 | 768   | RW | Word |  | 0...19    | num |
| V5 | V5-H27 | Configurability of digital output 7                | 35898 | 0 | 38684 | 12288 | RW | Word |  | 0...19    | num |
| V5 | V5-H29 | Enable buzzer                                      | 35899 | 0 | 38684 | 49152 | RW | Word |  | 0...1     | num |
| V5 | V5-d01 | Configurability of digital output 8                | 36115 | 0 | 38692 | 768   | RW | Word |  | 0...19    | num |
| V5 | V5-d02 | Configurability of digital output 9                | 36116 | 0 | 38692 | 3072  | RW | Word |  | 0...19    | num |
| V5 | V5-H31 | Configurability of the UP key                      | 36090 | 0 | 38685 | 3     | RW | Word |  | 0...9     | num |
| V5 | V5-H32 | Configurability of the DOWN key                    | 36091 | 0 | 38685 | 12    | RW | Word |  | 0...9     | num |
| V5 | V5-H33 | Configurability of the ESC key                     | 36092 | 0 | 38685 | 48    | RW | Word |  | 0...9     | num |
| V5 | V5-H34 | Configurability of the Free 1 key                  | 36093 | 0 | 38685 | 192   | RW | Word |  | 0...9     | num |
| V5 | V5-H35 | Configurability of the Free 2 key                  | 36094 | 0 | 38685 | 768   | RW | Word |  | 0...9     | num |
| V5 | V5-H36 | Configurability of the Free 3 key                  | 36095 | 0 | 38685 | 3072  | RW | Word |  | 0...9     | num |
| V5 | V5-H37 | Configurability of the Free 4 key                  | 36096 | 0 | 38685 | 12288 | RW | Word |  | 0...9     | num |
| V5 | V5-H41 | Configurability of analog input 1                  | 35872 | 0 | 38685 | 49152 | RW | Word |  | 0...2     | num |
| V5 | V5-H42 | Configurability of analog input 2                  | 35873 | 0 | 38686 | 3     | RW | Word |  | 0...2     | num |
| V5 | V5-H43 | Configurability of analog input 3                  | 35874 | 0 | 38686 | 12    | RW | Word |  | 0...2     | num |
| V5 | V5-H44 | Configurability of analog input 4                  | 35875 | 0 | 38686 | 48    | RW | Word |  | 0...2     | num |
| V5 | V5-H45 | Configurability of analog input 5                  | 35876 | 0 | 38686 | 192   | RW | Word |  | 0...2     | num |
| V5 | V5-H46 | Configurability of analog input 6                  | 35877 | 0 | 38686 | 768   | RW | Word |  | 0...2     | num |
| V5 | V5-H47 | Configurability of analog input 7                  | 35878 | 0 | 38686 | 3072  | RW | Word |  | 0...2     | num |
| V5 | V5-H48 | Configurability of analog input 8                  | 36126 | 0 | 38693 | 49152 | RW | Word |  | 0...2     | num |
| V5 | V5-H50 | Configurability of analog output 1                 | 35900 | 0 | 38686 | 12288 | RW | Word |  | 0...1     | num |
| V5 | V5-H51 | Function associated with analog output             | 35901 | 0 | 38686 | 49152 | RW | Word |  | 0...3     | num |
| V5 | V5-H68 | RTC present                                        | 35902 | 0 | 38687 | 3     | RW | Word |  | 0...1     | num |
| V5 | V5-H70 | Selection of 1st sensor for virtual probe          | 35880 | 0 | 38687 | 12    | RW | Word |  | 0...5     | num |
| V5 | V5-H71 | Selection of 2nd sensor for virtual probe          | 35881 | 0 | 38687 | 48    | RW | Word |  | 0...5     | num |
| V5 | V5-H72 | Day virtual probe calculation %                    | 35882 | 0 | 38687 | 192   | RW | Word |  | 0...100   | %   |
| V5 | V5-H73 | Night virtual probe calculation %                  | 35883 | 0 | 38687 | 768   | RW | Word |  | 0...100   | %   |
| V5 | V5-H74 | Selection of 1st sensor for filtered virtual probe | 36112 | 0 | 38691 | 49152 | RW | Word |  | 0...65635 | num |

|    |        |                                                                             |       |   |       |       |    |      |   |                 |       |
|----|--------|-----------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V5 | V5-H75 | Percentage in thousandths of the incoming signal for filtered virtual probe | 36113 | 0 | 38692 | 3     | RW | Word |   | 0...65635       | num   |
| V5 | V5-H76 | Filtered virtual probe offset                                               | 36114 | 0 | 38692 | 12    | RW | Word |   | 0...65635       | num   |
| V5 | V5-EtY | Selection of electronic expansion valve driver                              | 36097 | 0 | 38687 | 3072  | RW | Word |   | 0...1           | flag  |
| V5 | UL     | Visibility of parameter transfer function (Device -> UNICARD/MFK)           | -     | - | 38690 | 3     | RW | Word |   | 0...3           | num   |
| V5 | dL     | Visibility of parameter transfer function (UNICARD/MFK -> Device)           | -     | - | 38690 | 12    | RW | Word |   | 0...3           | num   |
| V5 | Fr     | Visibility of UNICARD/MFK formatting function                               | -     | - | 38690 | 48    | RW | Word |   | 0...3           | num   |
| V5 | V5-OHP | Selection of oil temperature probe                                          | 36104 | 0 | 38690 | 12288 | RW | Word |   | 0...8           | num   |
| V5 | V5-OSP | Oil heater setpoint                                                         | 36105 | 0 | 38690 | 49152 | RW | Word | Y | V5-OLS...V5-OHS | °C/°F |
| V5 | V5-OHd | Oil heater differential                                                     | 36106 | 0 | 38691 | 3     | RW | Word |   | 0.1...25.0      | °C/°F |
| V5 | V5-OHS | Maximum oil heater setpoint value that can be set                           | 36108 | 0 | 38691 | 48    | RW | Word | Y | V5-OLS...302    | °C/°F |
| V5 | V5-OLS | Minimum oil heater setpoint value that can be set                           | 36109 | 0 | 38691 | 192   | RW | Word | Y | -58.0...V5-OHS  | °C/°F |

**Application 6 parameters**

|    |        |                                              |       |   |       |       |    |      |   |                 |       |
|----|--------|----------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V6 | V6-rE  | Regulation type                              | 36348 | 0 | 38752 | 3     | RW | Word |   | 0...6           | num   |
| V6 | V6-rP1 | Thermostat regulation probe 1                | 36349 | 0 | 38752 | 12    | RW | Word |   | 0...8           | num   |
| V6 | V6-rP2 | Thermostat regulation probe 2                | 36350 | 0 | 38752 | 48    | RW | Word |   | 0...9           | num   |
| V6 | V6-SP1 | Regulation setpoint 1                        | 36351 | 0 | 38752 | 192   | RW | Word | Y | V6-LS1...V6-HS1 | °C/°F |
| V6 | V6-dF1 | Setpoint differential 1                      | 36352 | 0 | 38752 | 768   | RW | Word | Y | -58.0...302     | °C/°F |
| V6 | V6-SP2 | Regulation setpoint 2                        | 36353 | 0 | 38752 | 3072  | RW | Word | Y | V6-LS2...V6-HS2 | °C/°F |
| V6 | V6-dF2 | Setpoint differential 2                      | 36354 | 0 | 38752 | 12288 | RW | Word | Y | -58.0...302     | °C/°F |
| V6 | V6-Stt | Differential management mode                 | 36357 | 0 | 38752 | 49152 | RW | Word |   | 0...1           | flag  |
| V6 | V6-HS1 | Maximum value that can be set for Setpoint 1 | 36360 | 0 | 38753 | 3     | RW | Word | Y | V6-LS1...V6-HdL | °C/°F |
| V6 | V6-LS1 | Minimum value that can be set for Setpoint 1 | 36361 | 0 | 38753 | 12    | RW | Word | Y | V6-LdL...V6-HS1 | °C/°F |
| V6 | V6-HS2 | Maximum value that can be set for Setpoint 2 | 36362 | 0 | 38753 | 48    | RW | Word | Y | V6-LS2...V6-HdL | °C/°F |
| V6 | V6-LS2 | Minimum value that can be set for Setpoint 2 | 36363 | 0 | 38753 | 192   | RW | Word | Y | V6-LdL...V6-HS2 | °C/°F |
| V6 | V6-HC1 | Setpoint 1 operating mode (Heating/Cooling)  | 36358 | 0 | 38753 | 768   | RW | Word |   | 0...1           | flag  |
| V6 | V6-HC2 | Setpoint 2 operating mode (Heating/Cooling)  | 36359 | 0 | 38753 | 3072  | RW | Word |   | 0...1           | flag  |
| V6 | V6-Cit | Minimum compressor output activation time    | 36368 | 0 | 38753 | 49152 | RW | Word |   | 0...250         | min   |
| V6 | V6-CAt | Maximum compressor output activation time    | 36369 | 0 | 38754 | 3     | RW | Word |   | 0...250         | min   |

|    |        |                                                                 |       |   |       |       |    |      |   |              |       |
|----|--------|-----------------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|-------|
| V6 | V6-Ont | Compressor output ON time if regulation probe is faulty         | 36374 | 0 | 38754 | 12    | RW | Word |   | 0...250      | min   |
| V6 | V6-OFt | Compressor output OFF time if regulation probe is faulty        | 36375 | 0 | 38754 | 48    | RW | Word |   | 0...250      | min   |
| V6 | V6-dOn | Compressor output activation delay from call                    | 36370 | 0 | 38754 | 192   | RW | Word |   | 0...250      | s     |
| V6 | V6-dOF | Compressor output activation delay from switch-off              | 36371 | 0 | 38754 | 768   | RW | Word |   | 0...250      | min   |
| V6 | V6-dbi | Delay between two consecutive compressor output power-ons       | 36372 | 0 | 38754 | 3072  | RW | Word |   | 0...250      | min   |
| V6 | V6-OdO | Output activation delay at startup                              | 36373 | 0 | 38754 | 12288 | RW | Word |   | 0...250      | min   |
| V6 | V6-CFP | Condenser pre-ventilation time in Heat/Cool                     | 36457 | 0 | 38755 | 12    | RW | Word |   | 0...255      | s     |
| V6 | V6-CFd | Condenser fan cut-out during defrosting.                        | 36458 | 0 | 38755 | 48    | RW | Word |   | 0...1        | flag  |
| V6 | V6-OF1 | Remote offset                                                   | 36379 | 0 | 38755 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F |
| V6 | V6-Pot | Pump down time                                                  | 36485 | 0 | 38786 | 192   | RW | Word |   | 0...250      | s     |
| V6 | V6-SS1 | Compressor softstart: advance hotgas valve opening              | 36486 | 0 | 38786 | 768   | RW | Word |   | 0...250      | s     |
| V6 | V6-SS2 | Compressor softstart: delay hotgas valve closing                | 36487 | 0 | 38786 | 3072  | RW | Word |   | 0...250      | s     |
| V6 | V6-dP1 | Select defrost probe 1                                          | 36380 | 0 | 38755 | 768   | RW | Word |   | 0...8        | num   |
| V6 | V6-dP2 | Defrost probe 2 selection                                       | 36381 | 0 | 38755 | 3072  | RW | Word |   | 0...8        | num   |
| V6 | V6-dty | Type of defrost                                                 | 36384 | 0 | 38755 | 12288 | RW | Word |   | 0...4        | num   |
| V6 | V6-dFt | Dual evaporator defrost activation mode                         | 36382 | 0 | 38755 | 49152 | RW | Word |   | 0...2        | num   |
| V6 | V6-dit | Interval between defrosts                                       | 36385 | 0 | 38756 | 3     | RW | Word |   | 0...250      | hours |
| V6 | V6-dt1 | Unit of measure for defrost intervals                           | 36388 | 0 | 38756 | 12    | RW | Word |   | 0...2        | num   |
| V6 | V6-dt2 | Unit of measure for defrost duration                            | 36389 | 0 | 38756 | 48    | RW | Word |   | 0...2        | num   |
| V6 | V6-dCt | Defrost interval count mode                                     | 36383 | 0 | 38756 | 192   | RW | Word |   | 0...5        | num   |
| V6 | V6-dOH | Defrost cycle activation delay from the call                    | 36390 | 0 | 38756 | 768   | RW | Word |   | 0...250      | min   |
| V6 | V6-dE1 | Evaporator 1 defrost maximum duration                           | 36386 | 0 | 38756 | 3072  | RW | Word |   | 1...250      | min   |
| V6 | V6-dE2 | Evaporator 2 defrost maximum duration                           | 36387 | 0 | 38756 | 12288 | RW | Word |   | 1...250      | min   |
| V6 | V6-dS1 | Evaporator 1 defrost end temperature                            | 36392 | 0 | 38756 | 49152 | RW | Word | Y | -58.0...302  | °C/°F |
| V6 | V6-dS2 | Evaporator 2 defrost end temperature                            | 36393 | 0 | 38757 | 3     | RW | Word | Y | -58.0...302  | °C/°F |
| V6 | V6-dSS | Temperature threshold for starting defrost                      | 36391 | 0 | 38757 | 12    | RW | Word | Y | -58.0...302  | °C/°F |
| V6 | V6-dPO | Defrost activation request at power-on                          | 36394 | 0 | 38757 | 48    | RW | Word |   | 0...1        | flag  |
| V6 | V6-tcd | Compressor output activation/deactivation time before a defrost | 36395 | 0 | 38757 | 192   | RW | Word | Y | -60...60     | min   |

|    |        |                                                            |       |   |       |       |    |      |   |             |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V6 | V6-ndE | minimum defrost duration time                              | 36396 | 0 | 38757 | 768   | RW | Word |   | 0...250     | min   |
| V6 | V6-PdC | Hot gas extraction time at the end of the defrost          | 36397 | 0 | 38757 | 3072  | RW | Word |   | 0...250     | min   |
| V6 | V6-tPd | Pump down time before defrost start                        | 36399 | 0 | 38757 | 12288 | RW | Word |   | 0...255     | min   |
| V6 | V6-dPH | Regular defrost start hour                                 | 36338 | 0 | 38757 | 49152 | RW | Word |   | 0...24      | hours |
| V6 | V6-dPn | Regular defrost start minutes                              | 36339 | 0 | 38758 | 3     | RW | Word |   | 0...59      | min   |
| V6 | V6-dPd | Regular defrost interval duration                          | 36340 | 0 | 38758 | 12    | RW | Word |   | 1...7       | day   |
| V6 | V6-Fd1 | 1st weekend/holiday day                                    | 36287 | 0 | 38758 | 48    | RW | Word |   | 0...7       | num   |
| V6 | V6-Fd2 | 2nd weekend/holiday day                                    | 36288 | 0 | 38758 | 192   | RW | Word |   | 0...7       | num   |
| V6 | V6-Edt | Timeout and defrost end temperature specific to each event | 36289 | 0 | 38758 | 768   | RW | Word |   | 0...1       | flag  |
| V6 | V6-Fdn | Weekday defrost number                                     | 36237 | 0 | 38792 | 3     | RW | Word |   | 0...250     | num   |
| V6 | V6-FFn | Weekend/holiday defrost number                             | 36238 | 0 | 38792 | 12    | RW | Word |   | 0...250     | num   |
| V6 | V6-PrH | Basin heater pre-activation time                           | 36494 | 0 | 38787 | 3072  | RW | Word |   | 0...255     | min   |
| V6 | V6-d1H | Weekday defrost no. 1 start hour                           | 36290 | 0 | 38758 | 3072  | RW | Word |   | 0...24      | hours |
| V6 | V6-d1n | Weekday defrost no. 1 start minute                         | 36291 | 0 | 38758 | 12288 | RW | Word |   | 0...59      | min   |
| V6 | V6-d1t | 1st weekday defrost duration                               | 36292 | 0 | 38758 | 49152 | RW | Word |   | 0...250     | min   |
| V6 | V6-d1S | 1st weekday defrost end temperature                        | 36293 | 0 | 38759 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-d2H | Weekday defrost no. 2 start hour                           | 36294 | 0 | 38759 | 12    | RW | Word |   | V6-d1H...24 | hours |
| V6 | V6-d2n | Weekday defrost no. 2 start minutes                        | 36295 | 0 | 38759 | 48    | RW | Word |   | 0...59      | min   |
| V6 | V6-d2t | 2nd weekday defrost duration                               | 36296 | 0 | 38759 | 192   | RW | Word |   | 0...250     | min   |
| V6 | V6-d2S | 2nd weekday defrost end temperature                        | 36297 | 0 | 38759 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-d3H | Weekday defrost no. 3 start hour                           | 36298 | 0 | 38759 | 3072  | RW | Word |   | V6-d2H...24 | hours |
| V6 | V6-d3n | Weekday defrost no. 3 start minutes                        | 36299 | 0 | 38759 | 12288 | RW | Word |   | 0...59      | min   |
| V6 | V6-d3t | 3rd weekday defrost duration                               | 36300 | 0 | 38759 | 49152 | RW | Word |   | 0...250     | min   |
| V6 | V6-d3S | 3rd weekday defrost end temperature                        | 36301 | 0 | 38760 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-d4H | Weekday defrost no. 4 start hour                           | 36302 | 0 | 38760 | 12    | RW | Word |   | V6-d3H...24 | hours |
| V6 | V6-d4n | Weekday defrost no. 4 start minutes                        | 36303 | 0 | 38760 | 48    | RW | Word |   | 0...59      | min   |
| V6 | V6-d4t | 4th weekday defrost duration                               | 36304 | 0 | 38760 | 192   | RW | Word |   | 0...250     | min   |
| V6 | V6-d4S | 4th weekday defrost end temperature                        | 36305 | 0 | 38760 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-d5H | Weekday defrost no. 5 start hour                           | 36306 | 0 | 38760 | 3072  | RW | Word |   | V6-d4H...24 | hours |
| V6 | V6-d5n | Weekday defrost no. 5 start minutes                        | 36307 | 0 | 38760 | 12288 | RW | Word |   | 0...59      | min   |



|    |        |                                             |       |   |       |       |    |      |   |             |       |
|----|--------|---------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V6 | V6-d5t | 5th weekday defrost duration                | 36308 | 0 | 38760 | 49152 | RW | Word |   | 0...250     | min   |
| V6 | V6-d5S | 5th weekday defrost end temperature         | 36309 | 0 | 38761 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-d6H | Weekday defrost no. 6 start hour            | 36310 | 0 | 38761 | 12    | RW | Word |   | V6-d5H...24 | hours |
| V6 | V6-d6n | Weekday defrost no. 6 start minutes         | 36311 | 0 | 38761 | 48    | RW | Word |   | 0...59      | min   |
| V6 | V6-d6t | 6th weekday defrost duration                | 36312 | 0 | 38761 | 192   | RW | Word |   | 0...250     | min   |
| V6 | V6-d6S | 6th weekday defrost end temperature         | 36313 | 0 | 38761 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-F1H | Weekend/holiday defrost no. 1 start hour    | 36314 | 0 | 38761 | 3072  | RW | Word |   | 0...24      | hours |
| V6 | V6-F1n | Weekend/holiday defrost no. 1 start minute  | 36315 | 0 | 38761 | 12288 | RW | Word |   | 0...59      | min   |
| V6 | V6-F1t | 1st weekend/holiday defrost duration        | 36316 | 0 | 38761 | 49152 | RW | Word |   | 0...250     | min   |
| V6 | V6-F1S | 1st weekend/holiday defrost end temperature | 36317 | 0 | 38762 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-F2H | Weekend/holiday defrost no. 2 start hour    | 36318 | 0 | 38762 | 12    | RW | Word |   | V6-F1H...24 | hours |
| V6 | V6-F2n | Weekend/holiday defrost no. 2 start minutes | 36319 | 0 | 38762 | 48    | RW | Word |   | 0...59      | min   |
| V6 | V6-F2t | 2nd weekend/holiday defrost duration        | 36320 | 0 | 38762 | 192   | RW | Word |   | 0...250     | min   |
| V6 | V6-F2S | 2nd weekend/holiday defrost end temperature | 36321 | 0 | 38762 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-F3H | Weekend/holiday defrost no. 3 start hour    | 36322 | 0 | 38762 | 3072  | RW | Word |   | V6-F2H...24 | hours |
| V6 | V6-F3n | Weekend/holiday defrost no. 3 start minutes | 36323 | 0 | 38762 | 12288 | RW | Word |   | 0...59      | min   |
| V6 | V6-F3t | 3rd weekend/holiday defrost duration        | 36324 | 0 | 38762 | 49152 | RW | Word |   | 0...250     | min   |
| V6 | V6-F3S | 3rd weekend/holiday defrost end temperature | 36325 | 0 | 38763 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-F4H | Weekend/holiday defrost no. 4 start hour    | 36326 | 0 | 38763 | 12    | RW | Word |   | V6-F3H...24 | hours |
| V6 | V6-F4n | Weekend/holiday defrost no. 4 start minutes | 36327 | 0 | 38763 | 48    | RW | Word |   | 0...59      | min   |
| V6 | V6-F4t | 4th weekend/holiday defrost duration        | 36328 | 0 | 38763 | 192   | RW | Word |   | 0...250     | min   |
| V6 | V6-F4S | 4th weekend/holiday defrost end temperature | 36329 | 0 | 38763 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-F5H | Weekend/holiday defrost no. 5 start hour    | 36330 | 0 | 38763 | 3072  | RW | Word |   | V6-F4H...24 | hours |
| V6 | V6-F5n | Weekend/holiday defrost no. 5 start minutes | 36331 | 0 | 38763 | 12288 | RW | Word |   | 0...59      | min   |
| V6 | V6-F5t | 5th weekend/holiday defrost duration        | 36332 | 0 | 38763 | 49152 | RW | Word |   | 0...250     | min   |
| V6 | V6-F5S | 5th weekend/holiday defrost end temperature | 36333 | 0 | 38764 | 3     | RW | Word | Y | -58.0...302 | °C/°F |

|    |        |                                                            |       |   |       |       |    |      |   |             |       |
|----|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V6 | V6-F6H | Weekend/holiday defrost no. 6 start hour                   | 36334 | 0 | 38764 | 12    | RW | Word |   | V6-F5H...24 | hours |
| V6 | V6-F6n | Weekend/holiday defrost no. 6 start minutes                | 36335 | 0 | 38764 | 48    | RW | Word |   | 0...59      | min   |
| V6 | V6-F6t | 6th weekend/holiday defrost duration                       | 36336 | 0 | 38764 | 192   | RW | Word |   | 0...250     | min   |
| V6 | V6-F6S | 6th weekend/holiday defrost end temperature                | 36337 | 0 | 38764 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-FP1 | Selection of evaporator fan probe in normal mode           | 36400 | 0 | 38764 | 3072  | RW | Word |   | 0...7       | num   |
| V6 | V6-FP2 | Selection of evaporator fan probe in defrost               | 36401 | 0 | 38764 | 12288 | RW | Word |   | 0...7       | num   |
| V6 | V6-FPt | FSt parameter mode (absolute or relative)                  | 36402 | 0 | 38764 | 49152 | RW | Word |   | 0...1       | flag  |
| V6 | V6-FSt | Evaporator fan disabling temperature                       | 36403 | 0 | 38765 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V6 | V6-FAd | Evaporator fan trigger differential                        | 36404 | 0 | 38765 | 12    | RW | Word |   | 0.1...25.0  | °C/°F |
| V6 | V6-Fdt | Evaporator fan activation delay time after a defrost cycle | 36405 | 0 | 38765 | 48    | RW | Word |   | 0...250     | min   |
| V6 | V6-dt  | Dripping time                                              | 36410 | 0 | 38765 | 192   | RW | Word |   | 0...250     | min   |
| V6 | V6-dFd | Evaporator fan cut-out during defrost                      | 36408 | 0 | 38765 | 768   | RW | Word |   | 0...1       | flag  |
| V6 | V6-FCO | Evaporator fan status with compressor output Off           | 36407 | 0 | 38765 | 3072  | RW | Word |   | 0...4       | num   |
| V6 | V6-Fod | Evaporator fan status with door open                       | 36409 | 0 | 38765 | 12288 | RW | Word |   | 0...1       | flag  |
| V6 | V6-FdC | Evaporator fan shutoff delay after compressor deactivation | 36406 | 0 | 38765 | 49152 | RW | Word |   | 0...250     | min   |
| V6 | V6-FOn | Evaporator fan On time in cyclical regulator mode          | 36411 | 0 | 38766 | 3     | RW | Word |   | 0...250     | min   |
| V6 | V6-FOF | Evaporator fan Off time in cyclical regulator mode         | 36412 | 0 | 38766 | 12    | RW | Word |   | 0...250     | min   |
| V6 | V6-Fnn | Evaporator fan ON time in night mode (duty cycle)          | 36413 | 0 | 38766 | 48    | RW | Word |   | 0...250     | min   |
| V6 | V6-FnF | Evaporator fan OFF time in night mode (duty cycle)         | 36414 | 0 | 38766 | 192   | RW | Word |   | 0...250     | min   |
| V6 | V6-FE1 | Variable speed fan probe selection                         | 36513 | 0 | 38790 | 48    | RW | Word |   | 0...12      | num   |
| V6 | V6-FEt | Setpoint mode                                              | 36514 | 0 | 38790 | 192   | RW | Word |   | 0...1       | flag  |
| V6 | V6-FES | Setpoint                                                   | 36515 | 0 | 38790 | 768   | RW | Word | Y | -58...302   | °C/°F |
| V6 | V6-FEd | Band                                                       | 36516 | 0 | 38790 | 3072  | RW | Word |   | 0.1...50.0  | °C/°F |
| V6 | V6-FEu | Cut-off band                                               | 36517 | 0 | 38790 | 12288 | RW | Word |   | 0.0...25.0  | °C/°F |
| V6 | V6-FEC | Cut-off differential                                       | 36518 | 0 | 38790 | 49152 | RW | Word |   | 0.1...25.0  | °C/°F |
| V6 | V6-FEr | Fan shutoff delay after compressor deactivation            | 36519 | 0 | 38791 | 3     | RW | Word |   | 0...250     | min   |
| V6 | V6-FE2 | Minimum day percentage                                     | 36520 | 0 | 38791 | 12    | RW | Word |   | 0...100     | %     |
| V6 | V6-FE3 | Maximum day percentage with compressor on                  | 36521 | 0 | 38791 | 48    | RW | Word |   | 0...100     | %     |

|    |        |                                                                       |       |   |       |       |    |      |   |                |       |
|----|--------|-----------------------------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|-------|
| V6 | V6-FE4 | Maximum day percentage with compressor off                            | 36522 | 0 | 38791 | 192   | RW | Word |   | 0...100        | %     |
| V6 | V6-FE5 | Minimum night percentage                                              | 36523 | 0 | 38791 | 768   | RW | Word |   | 0...100        | %     |
| V6 | V6-FE6 | Maximum night percentage with compressor on                           | 36524 | 0 | 38791 | 3072  | RW | Word |   | 0...100        | %     |
| V6 | V6-FE7 | Maximum night percentage with compressor off                          | 36525 | 0 | 38791 | 12288 | RW | Word |   | 0...100        | %     |
| V6 | V6-FE8 | Percentage during defrost                                             | 36526 | 0 | 38791 | 49152 | RW | Word |   | 0...100        | %     |
| V6 | V6-FE9 | Percentage in the event of probe error                                | 36527 | 0 | 38803 | 12    | RW | Word |   | 0...100        | %     |
| V6 | V6-FEA | Maximum pick-up speed                                                 | 36528 | 0 | 38803 | 48    | RW | Word |   | 0...100        | %     |
| V6 | V6-FEb | Fan pick-up time                                                      | 36529 | 0 | 38803 | 192   | RW | Word |   | 0...250        | s     |
| V6 | V6-FEP | Fan forcing period at pick-up speed                                   | 36530 | 0 | 38803 | 768   | RW | Word |   | 0...250        | min   |
| V6 | V6-rA1 | Temperature alarm probe 1 selection                                   | 36428 | 0 | 38766 | 768   | RW | Word |   | 0...7          | num   |
| V6 | V6-rA2 | Temperature alarm probe 2 selection                                   | 36429 | 0 | 38766 | 3072  | RW | Word |   | 0...7          | num   |
| V6 | V6-Att | Alarm mode (absolute or relative)                                     | 36430 | 0 | 38766 | 12288 | RW | Word |   | 0...1          | flag  |
| V6 | V6-AFd | Alarm activation differential                                         | 36431 | 0 | 38766 | 49152 | RW | Word |   | 0.1...25.0     | °C/°F |
| V6 | V6-HA1 | Maximum alarm 1 threshold                                             | 36432 | 0 | 38767 | 3     | RW | Word | Y | V6-LA1...302   | °C/°F |
| V6 | V6-LA1 | Minimum alarm 1 threshold                                             | 36433 | 0 | 38767 | 12    | RW | Word | Y | -58.0...V6-HA1 | °C/°F |
| V6 | V6-HA2 | Maximum alarm 2 threshold                                             | 36434 | 0 | 38767 | 48    | RW | Word | Y | V6-LA2...302   | °C/°F |
| V6 | V6-LA2 | Minimum alarm 2 threshold                                             | 36435 | 0 | 38767 | 192   | RW | Word | Y | -58.0...V6-HA2 | °C/°F |
| V6 | V6-PAO | Temperature alarm exclusion time from power-on                        | 36436 | 0 | 38767 | 768   | RW | Word |   | 0...10         | hours |
| V6 | V6-dAO | Exclusion time for temperature alarms after a defrost cycle           | 36438 | 0 | 38767 | 3072  | RW | Word |   | 0...250        | min   |
| V6 | V6-OAO | High and low temperature alarms exclusion time after closing the door | 36437 | 0 | 38767 | 12288 | RW | Word |   | 0...10         | hours |
| V6 | V6-tdO | Door open alarm exclusion time                                        | 36482 | 0 | 38767 | 49152 | RW | Word |   | 0...250        | min   |
| V6 | V6-tA1 | Probe 1 High/Minimum Alarm Delay                                      | 36439 | 0 | 38768 | 3     | RW | Word |   | 0...250        | min   |
| V6 | V6-tA2 | Probe 2 High/Minimum Alarm Delay                                      | 36440 | 0 | 38768 | 12    | RW | Word |   | 0...250        | min   |
| V6 | V6-dAt | Defrost ended due to timeout alarm signaling                          | 36398 | 0 | 38768 | 48    | RW | Word |   | 0...1          | flag  |
| V6 | V6-EAL | Regulators inhibited by external alarm                                | 36442 | 0 | 38768 | 192   | RW | Word |   | 0...2          | num   |
| V6 | V6-rA3 | Input used by the two threshold/LKD alarm regulator                   | 36501 | 0 | 38788 | 12288 | RW | Word |   | 0...8          | num   |
| V6 | V6-ALL | Low alarm threshold (warning)                                         | 36502 | 0 | 38788 | 49152 | RW | Word |   | 0.0...V6-ALH   | num   |
| V6 | V6-ALH | High alarm threshold (alarm)                                          | 36503 | 0 | 38789 | 3     | RW | Word |   | V6-ALL...100   | num   |

|    |        |                                                                           |       |   |       |       |    |      |  |           |        |
|----|--------|---------------------------------------------------------------------------|-------|---|-------|-------|----|------|--|-----------|--------|
| V6 | V6-dAL | Alarm leak differential                                                   | 36504 | 0 | 38789 | 12    | RW | Word |  | 0.1...100 | °C/°F  |
| V6 | V6-AL1 | Time probe remains above the low threshold due to leak alarm activation   | 36505 | 0 | 38789 | 48    | RW | Word |  | 0...250   | min    |
| V6 | V6-AL2 | Time probe remains above the high threshold due to leak alarm activation  | 36512 | 0 | 38790 | 12    | RW | Word |  | 0...250   | min    |
| V6 | V6-tP  | Enables alarm acknowledgment with any key                                 | 36483 | 0 | 38768 | 768   | RW | Word |  | 0...1     | flag   |
| V6 | V6-Art | Regular watchdog alarm activation period                                  | 36427 | 0 | 38768 | 3072  | RW | Word |  | 0...250   | min*10 |
| V6 | V6-dSd | Enable light relay from door switch                                       | 36424 | 0 | 38768 | 12288 | RW | Word |  | 0...1     | flag   |
| V6 | V6-dLt | Light relay off delay from door closure                                   | 36425 | 0 | 38768 | 49152 | RW | Word |  | 0...250   | min    |
| V6 | V6-OFL | Enable cold room lights off via key during the delay set in parameter dLt | 36426 | 0 | 38769 | 3     | RW | Word |  | 0...1     | flag   |
| V6 | V6-dOd | Enable utility shutoff upon door switch activation                        | 36441 | 0 | 38769 | 12    | RW | Word |  | 0...3     | num    |
| V6 | V6-dOA | Behavior forced by digital input                                          | 36443 | 0 | 38769 | 48    | RW | Word |  | 0...5     | num    |
| V6 | V6-PEA | Enable forced behavior from door switch and/or external alarm.            | 36444 | 0 | 38769 | 192   | RW | Word |  | 0...3     | num    |
| V6 | V6-dCO | Compressor activation delay from acknowledgment                           | 36445 | 0 | 38769 | 768   | RW | Word |  | 0...250   | min    |
| V6 | V6-dFO | Fan enabling delay from acknowledgment                                    | 36446 | 0 | 38769 | 3072  | RW | Word |  | 0...250   | min    |
| V6 | V6-ASb | Instrument off active light/auxiliary digital input or key                | 36472 | 0 | 38769 | 12288 | RW | Word |  | 0...1     | flag   |
| V6 | V6-L00 | Shared probe                                                              | 36224 | 0 | 38769 | 49152 | RW | Word |  | 0...7     | num    |
| V6 | V6-L01 | Distributed viewing (refers to secondary)                                 | 36225 | 0 | 38770 | 3     | RW | Word |  | 0...2     | num    |
| V6 | V6-L02 | Setpoint synchronization                                                  | 36226 | 0 | 38770 | 12    | RW | Word |  | 0...1     | flag   |
| V6 | V6-L03 | Defrost synchronization                                                   | 36227 | 0 | 38770 | 48    | RW | Word |  | 0...2     | num    |
| V6 | V6-L04 | Inhibit resources at the end of defrost                                   | 36228 | 0 | 38770 | 192   | RW | Word |  | 0...1     | flag   |
| V6 | V6-L05 | Stand-by synchronization                                                  | 36229 | 0 | 38770 | 768   | RW | Word |  | 0...1     | flag   |
| V6 | V6-L06 | Lights synchronization                                                    | 36230 | 0 | 38770 | 3072  | RW | Word |  | 0...1     | flag   |
| V6 | V6-L07 | Reduced set synchronization                                               | 36231 | 0 | 38770 | 12288 | RW | Word |  | 0...1     | flag   |
| V6 | V6-L08 | AUX synchronization                                                       | 36232 | 0 | 38770 | 49152 | RW | Word |  | 0...1     | flag   |
| V6 | V6-L09 | Shared saturation probe                                                   | 36233 | 0 | 38771 | 3     | RW | Word |  | 0...1     | flag   |
| V6 | V6-L10 | Resource unlocking timeout during synchronized defrosts                   | 36484 | 0 | 38771 | 12    | RW | Word |  | 0...250   | min    |
| V6 | V6-L11 | Number of devices connected in Link2                                      | 36234 | 0 | 38788 | 48    | RW | Word |  | 0...8     | num    |
| V6 | V6-L12 | Alarm relay sharing in Link2                                              | 36235 | 0 | 38788 | 192   | RW | Word |  | 0...2     | num    |
| V6 | V6-L13 | Link2 serial frame configuration                                          | 36495 | 0 | 38787 | 12288 | RW | Word |  | 0...1     | flag   |

|    |         |                                                      |       |   |       |       |    |      |   |              |        |
|----|---------|------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|--------|
| V6 | V6-L14  | Force cool mode                                      | 36511 | 0 | 38790 | 3     | RW | Word |   | 0...1        | flag   |
| V6 | V6-L15  | Shared buzzer and alarm silenced via Link2           | 36491 | 0 | 38792 | 48    | RW | Word |   | 0...2        | num    |
| V6 | V6-dcS  | Deep cooling setpoint                                | 36418 | 0 | 38771 | 768   | RW | Word | Y | -58.0...302  | °C/°F  |
| V6 | V6-tdC  | Deep cooling duration                                | 36419 | 0 | 38771 | 3072  | RW | Word |   | 0...250      | min    |
| V6 | V6-dCC  | Defrost delay after deep cooling                     | 36420 | 0 | 38771 | 12288 | RW | Word |   | 0...250      | min    |
| V6 | V6-ESSt | Type of action for the Energy Saving function        | 36347 | 0 | 38771 | 49152 | RW | Word |   | 0...8        | num    |
| V6 | V6-ESF  | Night mode activation (Energy Saving)                | 36415 | 0 | 38772 | 3     | RW | Word |   | 0...1        | flag   |
| V6 | V6-Cdt  | Door closing time                                    | 36416 | 0 | 38772 | 12    | RW | Word |   | 0...255      | min*10 |
| V6 | V6-ESo  | Low consumption mode disabling timeout (door switch) | 36417 | 0 | 38772 | 48    | RW | Word |   | 0...10       | num    |
| V6 | V6-OS1  | Offset on setpoint 1                                 | 36364 | 0 | 38772 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V6 | V6-OS2  | Offset on setpoint 2                                 | 36365 | 0 | 38772 | 768   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V6 | V6-Od1  | Refrigerated cabinets energy saving offset 1         | 36366 | 0 | 38772 | 3072  | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V6 | V6-Od2  | Refrigerated cabinets energy saving offset 2         | 36367 | 0 | 38772 | 12288 | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V6 | V6-dn1  | Differential during energy saving mode 1             | 36355 | 0 | 38772 | 49152 | RW | Word | Y | -58.0...302  | °C/°F  |
| V6 | V6-dn2  | Differential during energy saving mode 2             | 36356 | 0 | 38773 | 3     | RW | Word | Y | -58.0...302  | °C/°F  |
| V6 | V6-EdH  | Weekday energy saving start hour                     | 36341 | 0 | 38773 | 12    | RW | Word |   | 0...24       | hours  |
| V6 | V6-Edn  | Weekday energy saving start minutes                  | 36342 | 0 | 38773 | 48    | RW | Word |   | 0...59       | min    |
| V6 | V6-Edd  | Weekday energy saving duration                       | 36343 | 0 | 38773 | 192   | RW | Word |   | 1...72       | hours  |
| V6 | V6-EFH  | Weekend/holiday energy saving start hour             | 36344 | 0 | 38773 | 768   | RW | Word |   | 0...24       | hours  |
| V6 | V6-EFn  | Weekend/holiday energy saving start minutes          | 36345 | 0 | 38773 | 3072  | RW | Word |   | 0...59       | min    |
| V6 | V6-EFd  | Weekend/holiday energy saving duration               | 36346 | 0 | 38773 | 12288 | RW | Word |   | 1...72       | hours  |
| V6 | V6-FH   | Frame heater probe selection                         | 36447 | 0 | 38773 | 49152 | RW | Word |   | 0...9        | num    |
| V6 | V6-FHt  | Frame heater period                                  | 36449 | 0 | 38774 | 3     | RW | Word |   | 1...250      | s      |
| V6 | V6-FH0  | Frame heater set                                     | 36450 | 0 | 38774 | 12    | RW | Word | Y | -58.0...302  | °C/°F  |
| V6 | V6-FH1  | Frame heater offset                                  | 36451 | 0 | 38774 | 48    | RW | Word |   | 0.0...25.0   | °C/°F  |
| V6 | V6-FH2  | Frame heater band                                    | 36452 | 0 | 38774 | 192   | RW | Word | Y | -58.0...302  | °C/°F  |
| V6 | V6-FH3  | Frame heater minimum percentage/duty-cycle           | 36453 | 0 | 38774 | 768   | RW | Word |   | 0...100      | %      |
| V6 | V6-FH4  | Frame heater maximum percentage/day duty-cycle       | 36454 | 0 | 38774 | 3072  | RW | Word |   | 0...100      | %      |
| V6 | V6-FH5  | Frame heater maximum percentage/night duty-cycle     | 36455 | 0 | 38774 | 12288 | RW | Word |   | 0...100      | %      |
| V6 | V6-FH6  | Frame heater percentage/duty-cycle in defrost        | 36456 | 0 | 38774 | 49152 | RW | Word |   | 0...100      | %      |
| V6 | V6-LOC  | Disable terminal                                     | 36459 | 0 | 38775 | 3     | RW | Word |   | 0...1        | flag   |
| V6 | V6-PS1  | Password 1 value                                     | 36460 | 0 | 38775 | 12    | RW | Word |   | 0...250      | num    |

|    |        |                                              |       |   |       |       |    |      |   |                |         |
|----|--------|----------------------------------------------|-------|---|-------|-------|----|------|---|----------------|---------|
| V6 | V6-PS2 | Password 2 value                             | 36461 | 0 | 38775 | 48    | RW | Word |   | 0...250        | num     |
| V6 | V6-ndt | Display with decimal point                   | 36462 | 0 | 38775 | 192   | RW | Word |   | 0...1          | flag    |
| V6 | V6-CA1 | Analog input 1 calibration                   | 36268 | 0 | 38775 | 768   | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V6 | V6-CA2 | Analog input 2 calibration                   | 36269 | 0 | 38775 | 3072  | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V6 | V6-CA3 | Analog input 3 calibration                   | 36270 | 0 | 38775 | 12288 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V6 | V6-CA4 | Analog input 4 calibration                   | 36271 | 0 | 38775 | 49152 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V6 | V6-CA5 | Analog input 5 calibration                   | 36272 | 0 | 38776 | 3     | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V6 | V6-CA6 | Analog input 6 calibration                   | 36273 | 0 | 38776 | 12    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V6 | V6-CA7 | Analog input 7 calibration                   | 36274 | 0 | 38776 | 48    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V6 | V6-LdL | Minimum display value                        | 36463 | 0 | 38776 | 192   | RW | Word | Y | -58.0...V6-HdL | °C/°F   |
| V6 | V6-HdL | Maximum display value                        | 36464 | 0 | 38776 | 768   | RW | Word | Y | V6-LdL...302   | °C/°F   |
| V6 | V6-ddL | Display lock mode during a defrost           | 36465 | 0 | 38776 | 3072  | RW | Word |   | 0...2          | num     |
| V6 | V6-Ldd | Display lock timeout from end of defrost     | 36466 | 0 | 38776 | 12288 | RW | Word |   | 0...250        | min     |
| V6 | V6-dro | Select °C / °F                               | 36467 | 0 | 38776 | 49152 | RW | Word |   | 0...1          | flag    |
| V6 | V6-SbP | Pressure unit of measure                     | 36468 | 0 | 38777 | 3     | RW | Word |   | 0...1          | flag    |
| V6 | V6-ddd | Select main display value                    | 36469 | 0 | 38777 | 12    | RW | Word |   | 0...8          | num     |
| V6 | V6-ddE | Resource displayed on ECHO                   | 36470 | 0 | 38777 | 48    | RW | Word |   | 0...11         | num     |
| V6 | V6-rPH | Receiver maximum valve opening %             | 36421 | 0 | 38777 | 192   | RW | Word |   | 0...5          | num     |
| V6 | V6-H00 | Select analog input type NTC/PTC             | 36236 | 0 | 38777 | 768   | RW | Word |   | 0...2          | num     |
| V6 | V6-H02 | Function activation time from terminal       | 36471 | 0 | 38777 | 3072  | RW | Word |   | 0...250        | s       |
| V6 | V6-H08 | Stand-by operating mode                      | 36473 | 0 | 38777 | 12288 | RW | Word |   | 0...2          | num     |
| V6 | V6-H11 | Digital input 1 configurability and polarity | 36239 | 0 | 38777 | 49152 | RW | Word | Y | -19...19       | num     |
| V6 | V6-H12 | Digital input 2 configurability and polarity | 36240 | 0 | 38778 | 3     | RW | Word | Y | -19...19       | num     |
| V6 | V6-H13 | Digital input 3 configurability and polarity | 36241 | 0 | 38778 | 12    | RW | Word | Y | -19...19       | num     |
| V6 | V6-H14 | Digital input 4 configurability and polarity | 36242 | 0 | 38778 | 48    | RW | Word | Y | -19...19       | num     |
| V6 | V6-H15 | Digital input 5 configurability and polarity | 36243 | 0 | 38778 | 192   | RW | Word | Y | -19...19       | num     |
| V6 | V6-H16 | Digital input 6 configurability and polarity | 36244 | 0 | 38778 | 768   | RW | Word | Y | -19...19       | num     |
| V6 | V6-H17 | Digital input 7 configurability and polarity | 36245 | 0 | 38778 | 3072  | RW | Word | Y | -19...19       | num     |
| V6 | V6-H18 | Digital input 8 configurability and polarity | 36246 | 0 | 38778 | 12288 | RW | Word | Y | -19...19       | num     |

|    |        |                                               |       |   |       |       |    |      |   |          |      |
|----|--------|-----------------------------------------------|-------|---|-------|-------|----|------|---|----------|------|
| V6 | V6-i01 | Digital input 9 configurability and polarity  | 36506 | 0 | 38789 | 192   | RW | Word | Y | -19...19 | num  |
| V6 | V6-i02 | Digital input 10 configurability and polarity | 36507 | 0 | 38789 | 768   | RW | Word | Y | -19...19 | num  |
| V6 | V6-dti | Digital inputs 1 and 2 delay unit of measure  | 36255 | 0 | 38778 | 49152 | RW | Word |   | 0...1    | flag |
| V6 | V6-d11 | D.I. 1 activation indication delay time       | 36247 | 0 | 38779 | 3     | RW | Word |   | 0...255  | min  |
| V6 | V6-d12 | D.I. 2 activation indication delay time       | 36248 | 0 | 38779 | 12    | RW | Word |   | 0...255  | min  |
| V6 | V6-d13 | D.I. 3 activation indication delay time       | 36249 | 0 | 38779 | 48    | RW | Word |   | 0...255  | min  |
| V6 | V6-d14 | D.I. 4 activation indication delay time       | 36250 | 0 | 38779 | 192   | RW | Word |   | 0...255  | min  |
| V6 | V6-d15 | D.I. 5 activation indication delay time       | 36251 | 0 | 38779 | 768   | RW | Word |   | 0...255  | min  |
| V6 | V6-d16 | D.I. 6 activation indication delay time       | 36252 | 0 | 38779 | 3072  | RW | Word |   | 0...255  | min  |
| V6 | V6-d17 | D.I. 7 activation indication delay time       | 36253 | 0 | 38779 | 12288 | RW | Word |   | 0...255  | min  |
| V6 | V6-d18 | D.I. 8 activation indication delay time       | 36254 | 0 | 38779 | 49152 | RW | Word |   | 0...255  | min  |
| V6 | V6-01i | D.I. 9 activation indication delay time       | 36508 | 0 | 38789 | 3072  | RW | Word |   | 0...255  | min  |
| V6 | V6-02i | D.I. 10 activation indication delay time      | 36509 | 0 | 38789 | 12288 | RW | Word |   | 0...255  | min  |
| V6 | V6-H21 | Configurability of digital output 1           | 36276 | 0 | 38780 | 3     | RW | Word |   | 0...19   | num  |
| V6 | V6-H22 | Configurability of digital output 2           | 36277 | 0 | 38780 | 12    | RW | Word |   | 0...19   | num  |
| V6 | V6-H23 | Configurability of digital output 3           | 36278 | 0 | 38780 | 48    | RW | Word |   | 0...19   | num  |
| V6 | V6-H24 | Configurability of digital output 4           | 36279 | 0 | 38780 | 192   | RW | Word |   | 0...19   | num  |
| V6 | V6-H25 | Configurability of digital output 5           | 36280 | 0 | 38780 | 768   | RW | Word |   | 0...19   | num  |
| V6 | V6-H27 | Configurability of digital output 7           | 36282 | 0 | 38780 | 12288 | RW | Word |   | 0...19   | num  |
| V6 | V6-H29 | Enable buzzer                                 | 36283 | 0 | 38780 | 49152 | RW | Word |   | 0...1    | num  |
| V6 | V6-d01 | Configurability of digital output 8           | 36499 | 0 | 38788 | 768   | RW | Word |   | 0...19   | num  |
| V6 | V6-d02 | Configurability of digital output 9           | 36500 | 0 | 38788 | 3072  | RW | Word |   | 0...19   | num  |
| V6 | V6-H31 | Configurability of the UP key                 | 36474 | 0 | 38781 | 3     | RW | Word |   | 0...9    | num  |
| V6 | V6-H32 | Configurability of the DOWN key               | 36475 | 0 | 38781 | 12    | RW | Word |   | 0...9    | num  |
| V6 | V6-H33 | Configurability of the ESC key                | 36476 | 0 | 38781 | 48    | RW | Word |   | 0...9    | num  |
| V6 | V6-H34 | Configurability of the Free 1 key             | 36477 | 0 | 38781 | 192   | RW | Word |   | 0...9    | num  |
| V6 | V6-H35 | Configurability of the Free 2 key             | 36478 | 0 | 38781 | 768   | RW | Word |   | 0...9    | num  |
| V6 | V6-H36 | Configurability of the Free 3 key             | 36479 | 0 | 38781 | 3072  | RW | Word |   | 0...9    | num  |
| V6 | V6-H37 | Configurability of the Free 4 key             | 36480 | 0 | 38781 | 12288 | RW | Word |   | 0...9    | num  |
| V6 | V6-H41 | Configurability of analog input 1             | 36256 | 0 | 38781 | 49152 | RW | Word |   | 0...2    | num  |

|    |        |                                                                             |       |   |       |       |    |      |   |                 |       |
|----|--------|-----------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V6 | V6-H42 | Configurability of analog input 2                                           | 36257 | 0 | 38782 | 3     | RW | Word |   | 0...2           | num   |
| V6 | V6-H43 | Configurability of analog input 3                                           | 36258 | 0 | 38782 | 12    | RW | Word |   | 0...2           | num   |
| V6 | V6-H44 | Configurability of analog input 4                                           | 36259 | 0 | 38782 | 48    | RW | Word |   | 0...2           | num   |
| V6 | V6-H45 | Configurability of analog input 5                                           | 36260 | 0 | 38782 | 192   | RW | Word |   | 0...2           | num   |
| V6 | V6-H46 | Configurability of analog input 6                                           | 36261 | 0 | 38782 | 768   | RW | Word |   | 0...2           | num   |
| V6 | V6-H47 | Configurability of analog input 7                                           | 36262 | 0 | 38782 | 3072  | RW | Word |   | 0...2           | num   |
| V6 | V6-H48 | Configurability of analog input 8                                           | 36510 | 0 | 38789 | 49152 | RW | Word |   | 0...2           | num   |
| V6 | V6-H50 | Configurability of analog output 1                                          | 36284 | 0 | 38782 | 12288 | RW | Word |   | 0...1           | num   |
| V6 | V6-H51 | Function associated with analog output                                      | 36285 | 0 | 38782 | 49152 | RW | Word |   | 0...3           | num   |
| V6 | V6-H68 | RTC present                                                                 | 36286 | 0 | 38783 | 3     | RW | Word |   | 0...1           | num   |
| V6 | V6-H70 | Selection of 1st sensor for virtual probe                                   | 36264 | 0 | 38783 | 12    | RW | Word |   | 0...5           | num   |
| V6 | V6-H71 | Selection of 2nd sensor for virtual probe                                   | 36265 | 0 | 38783 | 48    | RW | Word |   | 0...5           | num   |
| V6 | V6-H72 | Day virtual probe calculation %                                             | 36266 | 0 | 38783 | 192   | RW | Word |   | 0...100         | %     |
| V6 | V6-H73 | Night virtual probe calculation %                                           | 36267 | 0 | 38783 | 768   | RW | Word |   | 0...100         | %     |
| V6 | V6-H74 | Selection of 1st sensor for filtered virtual probe                          | 36496 | 0 | 38787 | 49152 | RW | Word |   | 0...65635       | num   |
| V6 | V6-H75 | Percentage in thousandths of the incoming signal for filtered virtual probe | 36497 | 0 | 38788 | 3     | RW | Word |   | 0...65635       | num   |
| V6 | V6-H76 | Filtered virtual probe offset                                               | 36498 | 0 | 38788 | 12    | RW | Word |   | 0...65635       | num   |
| V6 | V6-EtY | Selection of electronic expansion valve driver                              | 36481 | 0 | 38783 | 3072  | RW | Word |   | 0...1           | flag  |
| V6 | UL     | Visibility of parameter transfer function (Device -> UNICARD/MFK)           | -     | - | 38786 | 3     | RW | Word |   | 0...3           | num   |
| V6 | dL     | Visibility of parameter transfer function (UNICARD/MFK -> Device)           | -     | - | 38786 | 12    | RW | Word |   | 0...3           | num   |
| V6 | Fr     | Visibility of UNICARD/MFK formatting function                               | -     | - | 38786 | 48    | RW | Word |   | 0...3           | num   |
| V6 | V6-OHP | Selection of oil temperature probe                                          | 36488 | 0 | 38786 | 12288 | RW | Word |   | 0...8           | num   |
| V6 | V6-OSP | Oil heater setpoint                                                         | 36489 | 0 | 38786 | 49152 | RW | Word | Y | V6-OLS...V6-OHS | °C/°F |
| V6 | V6-OHd | Oil heater differential                                                     | 36490 | 0 | 38787 | 3     | RW | Word |   | 0.1...25.0      | °C/°F |
| V6 | V6-OHS | Maximum oil heater setpoint value that can be set                           | 36492 | 0 | 38787 | 48    | RW | Word | Y | V6-OLS...302    | °C/°F |
| V6 | V6-OLS | Minimum oil heater setpoint value that can be set                           | 36493 | 0 | 38787 | 192   | RW | Word | Y | -58.0...V6-OHS  | °C/°F |

**Application 7 parameters**

|    |        |                               |       |   |       |    |    |      |  |       |     |
|----|--------|-------------------------------|-------|---|-------|----|----|------|--|-------|-----|
| V7 | V7-rE  | Regulation type               | 36732 | 0 | 38848 | 3  | RW | Word |  | 0...6 | num |
| V7 | V7-rP1 | Thermostat regulation probe 1 | 36733 | 0 | 38848 | 12 | RW | Word |  | 0...8 | num |



| Application 7 parameters |        |                                                           |       |   |       |       |    |      |   |                 |       |
|--------------------------|--------|-----------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V7                       | V7-rP2 | Thermostat regulation probe 2                             | 36734 | 0 | 38848 | 48    | RW | Word |   | 0...9           | num   |
| V7                       | V7-SP1 | Regulation setpoint 1                                     | 36735 | 0 | 38848 | 192   | RW | Word | Y | V7-LS1...V7-HS1 | °C/°F |
| V7                       | V7-dF1 | Setpoint differential 1                                   | 36736 | 0 | 38848 | 768   | RW | Word | Y | -58.0...302     | °C/°F |
| V7                       | V7-SP2 | Regulation setpoint 2                                     | 36737 | 0 | 38848 | 3072  | RW | Word | Y | V7-LS2...V7-HS2 | °C/°F |
| V7                       | V7-dF2 | Setpoint differential 2                                   | 36738 | 0 | 38848 | 12288 | RW | Word | Y | -58.0...302     | °C/°F |
| V7                       | V7-Stt | Differential management mode                              | 36741 | 0 | 38848 | 49152 | RW | Word |   | 0...1           | flag  |
| V7                       | V7-HS1 | Maximum value that can be set for Setpoint 1              | 36744 | 0 | 38849 | 3     | RW | Word | Y | V7-LS1...V7-HdL | °C/°F |
| V7                       | V7-LS1 | Minimum value that can be set for Setpoint 1              | 36745 | 0 | 38849 | 12    | RW | Word | Y | V7-LdL...V7-HS1 | °C/°F |
| V7                       | V7-HS2 | Maximum value that can be set for Setpoint 2              | 36746 | 0 | 38849 | 48    | RW | Word | Y | V7-LS2...V7-HdL | °C/°F |
| V7                       | V7-LS2 | Minimum value that can be set for Setpoint 2              | 36747 | 0 | 38849 | 192   | RW | Word | Y | V7-LdL...V7-HS2 | °C/°F |
| V7                       | V7-HC1 | Setpoint 1 operating mode (Heating/Cooling)               | 36742 | 0 | 38849 | 768   | RW | Word |   | 0...1           | flag  |
| V7                       | V7-HC2 | Setpoint 2 operating mode (Heating/Cooling)               | 36743 | 0 | 38849 | 3072  | RW | Word |   | 0...1           | flag  |
| V7                       | V7-Cit | Minimum compressor output activation time                 | 36752 | 0 | 38849 | 49152 | RW | Word |   | 0...250         | min   |
| V7                       | V7-CAt | Maximum compressor output activation time                 | 36753 | 0 | 38850 | 3     | RW | Word |   | 0...250         | min   |
| V7                       | V7-Ont | Compressor output ON time if regulation probe is faulty   | 36758 | 0 | 38850 | 12    | RW | Word |   | 0...250         | min   |
| V7                       | V7-OFt | Compressor output OFF time if regulation probe is faulty  | 36759 | 0 | 38850 | 48    | RW | Word |   | 0...250         | min   |
| V7                       | V7-dOn | Compressor output activation delay from call              | 36754 | 0 | 38850 | 192   | RW | Word |   | 0...250         | s     |
| V7                       | V7-dOF | Compressor output activation delay from switch-off        | 36755 | 0 | 38850 | 768   | RW | Word |   | 0...250         | min   |
| V7                       | V7-dbi | Delay between two consecutive compressor output power-ons | 36756 | 0 | 38850 | 3072  | RW | Word |   | 0...250         | min   |
| V7                       | V7-OdO | Output activation delay at startup                        | 36757 | 0 | 38850 | 12288 | RW | Word |   | 0...250         | min   |
| V7                       | V7-CFP | Condenser pre-ventilation time in Heat/Cool               | 36841 | 0 | 38851 | 12    | RW | Word |   | 0...255         | s     |
| V7                       | V7-CFd | Condenser fan cut-out during defrosting.                  | 36842 | 0 | 38851 | 48    | RW | Word |   | 0...1           | flag  |
| V7                       | V7-OF1 | Remote offset                                             | 36763 | 0 | 38851 | 192   | RW | Word | Y | -50.0...50.0    | °C/°F |
| V7                       | V7-Pot | Pump down time                                            | 36869 | 0 | 38882 | 192   | RW | Word |   | 0...250         | s     |
| V7                       | V7-SS1 | Compressor softstart: advance hotgas valve opening        | 36870 | 0 | 38882 | 768   | RW | Word |   | 0...250         | s     |
| V7                       | V7-SS2 | Compressor softstart: delay hotgas valve closing          | 36871 | 0 | 38882 | 3072  | RW | Word |   | 0...250         | s     |
| V7                       | V7-dP1 | Select defrost probe 1                                    | 36764 | 0 | 38851 | 768   | RW | Word |   | 0...8           | num   |
| V7                       | V7-dP2 | Defrost probe 2 selection                                 | 36765 | 0 | 38851 | 3072  | RW | Word |   | 0...8           | num   |

| Application 7 parameters |        |                                                                 |       |   |       |       |    |      |   |             |       |
|--------------------------|--------|-----------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V7                       | V7-dty | Type of defrost                                                 | 36768 | 0 | 38851 | 12288 | RW | Word |   | 0...4       | num   |
| V7                       | V7-dFt | Dual evaporator defrost activation mode                         | 36766 | 0 | 38851 | 49152 | RW | Word |   | 0...2       | num   |
| V7                       | V7-dit | Interval between defrosts                                       | 36769 | 0 | 38852 | 3     | RW | Word |   | 0...250     | hours |
| V7                       | V7-dt1 | Unit of measure for defrost intervals                           | 36772 | 0 | 38852 | 12    | RW | Word |   | 0...2       | num   |
| V7                       | V7-dt2 | Unit of measure for defrost duration                            | 36773 | 0 | 38852 | 48    | RW | Word |   | 0...2       | num   |
| V7                       | V7-dCt | Defrost interval count mode                                     | 36767 | 0 | 38852 | 192   | RW | Word |   | 0...5       | num   |
| V7                       | V7-dOH | Defrost cycle activation delay from the call                    | 36774 | 0 | 38852 | 768   | RW | Word |   | 0...250     | min   |
| V7                       | V7-dE1 | Evaporator 1 defrost maximum duration                           | 36770 | 0 | 38852 | 3072  | RW | Word |   | 1...250     | min   |
| V7                       | V7-dE2 | Evaporator 2 defrost maximum duration                           | 36771 | 0 | 38852 | 12288 | RW | Word |   | 1...250     | min   |
| V7                       | V7-dS1 | Evaporator 1 defrost end temperature                            | 36776 | 0 | 38852 | 49152 | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-dS2 | Evaporator 2 defrost end temperature                            | 36777 | 0 | 38853 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-dSS | Temperature threshold for starting defrost                      | 36775 | 0 | 38853 | 12    | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-dPO | Defrost activation request at power-on                          | 36778 | 0 | 38853 | 48    | RW | Word |   | 0...1       | flag  |
| V7                       | V7-tcd | Compressor output activation/deactivation time before a defrost | 36779 | 0 | 38853 | 192   | RW | Word | Y | -60...60    | min   |
| V7                       | V7-ndE | minimum defrost duration time                                   | 36780 | 0 | 38853 | 768   | RW | Word |   | 0...250     | min   |
| V7                       | V7-PdC | Hot gas extraction time at the end of the defrost               | 36781 | 0 | 38853 | 3072  | RW | Word |   | 0...250     | min   |
| V7                       | V7-tPd | Pump down time before defrost start                             | 36783 | 0 | 38853 | 12288 | RW | Word |   | 0...255     | min   |
| V7                       | V7-dPH | Regular defrost start hour                                      | 36722 | 0 | 38853 | 49152 | RW | Word |   | 0...24      | hours |
| V7                       | V7-dPn | Regular defrost start minutes                                   | 36723 | 0 | 38854 | 3     | RW | Word |   | 0...59      | min   |
| V7                       | V7-dPd | Regular defrost interval duration                               | 36724 | 0 | 38854 | 12    | RW | Word |   | 1...7       | day   |
| V7                       | V7-Fd1 | 1st weekend/holiday day                                         | 36671 | 0 | 38854 | 48    | RW | Word |   | 0...7       | num   |
| V7                       | V7-Fd2 | 2nd weekend/holiday day                                         | 36672 | 0 | 38854 | 192   | RW | Word |   | 0...7       | num   |
| V7                       | V7-Edt | Timeout and defrost end temperature specific to each event      | 36673 | 0 | 38854 | 768   | RW | Word |   | 0...1       | flag  |
| V7                       | V7-Fdn | Weekday defrost number                                          | 36621 | 0 | 38888 | 3     | RW | Word |   | 0...250     | num   |
| V7                       | V7-FFn | Weekend/holiday defrost number                                  | 36622 | 0 | 38888 | 12    | RW | Word |   | 0...250     | num   |
| V7                       | V7-PrH | Basin heater pre-activation time                                | 36878 | 0 | 38883 | 3072  | RW | Word |   | 0...255     | min   |
| V7                       | V7-d1H | Weekday defrost no. 1 start hour                                | 36674 | 0 | 38854 | 3072  | RW | Word |   | 0...24      | hours |
| V7                       | V7-d1n | Weekday defrost no. 1 start minute                              | 36675 | 0 | 38854 | 12288 | RW | Word |   | 0...59      | min   |
| V7                       | V7-d1t | 1st weekday defrost duration                                    | 36676 | 0 | 38854 | 49152 | RW | Word |   | 0...250     | min   |
| V7                       | V7-d1S | 1st weekday defrost end temperature                             | 36677 | 0 | 38855 | 3     | RW | Word | Y | -58.0...302 | °C/°F |

| Application 7 parameters |        |                                             |       |   |       |       |    |      |   |             |       |
|--------------------------|--------|---------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V7                       | V7-d2H | Weekday defrost no. 2 start hour            | 36678 | 0 | 38855 | 12    | RW | Word |   | V7-d1H...24 | hours |
| V7                       | V7-d2n | Weekday defrost no. 2 start minutes         | 36679 | 0 | 38855 | 48    | RW | Word |   | 0...59      | min   |
| V7                       | V7-d2t | 2nd weekday defrost duration                | 36680 | 0 | 38855 | 192   | RW | Word |   | 0...250     | min   |
| V7                       | V7-d2S | 2nd weekday defrost end temperature         | 36681 | 0 | 38855 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-d3H | Weekday defrost no. 3 start hour            | 36682 | 0 | 38855 | 3072  | RW | Word |   | V7-d2H...24 | hours |
| V7                       | V7-d3n | Weekday defrost no. 3 start minutes         | 36683 | 0 | 38855 | 12288 | RW | Word |   | 0...59      | min   |
| V7                       | V7-d3t | 3rd weekday defrost duration                | 36684 | 0 | 38855 | 49152 | RW | Word |   | 0...250     | min   |
| V7                       | V7-d3S | 3rd weekday defrost end temperature         | 36685 | 0 | 38856 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-d4H | Weekday defrost no. 4 start hour            | 36686 | 0 | 38856 | 12    | RW | Word |   | V7-d3H...24 | hours |
| V7                       | V7-d4n | Weekday defrost no. 4 start minutes         | 36687 | 0 | 38856 | 48    | RW | Word |   | 0...59      | min   |
| V7                       | V7-d4t | 4th weekday defrost duration                | 36688 | 0 | 38856 | 192   | RW | Word |   | 0...250     | min   |
| V7                       | V7-d4S | 4th weekday defrost end temperature         | 36689 | 0 | 38856 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-d5H | Weekday defrost no. 5 start hour            | 36690 | 0 | 38856 | 3072  | RW | Word |   | V7-d4H...24 | hours |
| V7                       | V7-d5n | Weekday defrost no. 5 start minutes         | 36691 | 0 | 38856 | 12288 | RW | Word |   | 0...59      | min   |
| V7                       | V7-d5t | 5th weekday defrost duration                | 36692 | 0 | 38856 | 49152 | RW | Word |   | 0...250     | min   |
| V7                       | V7-d5S | 5th weekday defrost end temperature         | 36693 | 0 | 38857 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-d6H | Weekday defrost no. 6 start hour            | 36694 | 0 | 38857 | 12    | RW | Word |   | V7-d5H...24 | hours |
| V7                       | V7-d6n | Weekday defrost no. 6 start minutes         | 36695 | 0 | 38857 | 48    | RW | Word |   | 0...59      | min   |
| V7                       | V7-d6t | 6th weekday defrost duration                | 36696 | 0 | 38857 | 192   | RW | Word |   | 0...250     | min   |
| V7                       | V7-d6S | 6th weekday defrost end temperature         | 36697 | 0 | 38857 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-F1H | Weekend/holiday defrost no. 1 start hour    | 36698 | 0 | 38857 | 3072  | RW | Word |   | 0...24      | hours |
| V7                       | V7-F1n | Weekend/holiday defrost no. 1 start minute  | 36699 | 0 | 38857 | 12288 | RW | Word |   | 0...59      | min   |
| V7                       | V7-F1t | 1st weekend/holiday defrost duration        | 36700 | 0 | 38857 | 49152 | RW | Word |   | 0...250     | min   |
| V7                       | V7-F1S | 1st weekend/holiday defrost end temperature | 36701 | 0 | 38858 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-F2H | Weekend/holiday defrost no. 2 start hour    | 36702 | 0 | 38858 | 12    | RW | Word |   | V7-F1H...24 | hours |
| V7                       | V7-F2n | Weekend/holiday defrost no. 2 start minutes | 36703 | 0 | 38858 | 48    | RW | Word |   | 0...59      | min   |
| V7                       | V7-F2t | 2nd weekend/holiday defrost duration        | 36704 | 0 | 38858 | 192   | RW | Word |   | 0...250     | min   |
| V7                       | V7-F2S | 2nd weekend/holiday defrost end temperature | 36705 | 0 | 38858 | 768   | RW | Word | Y | -58.0...302 | °C/°F |

| Application 7 parameters |        |                                                            |       |   |       |       |    |      |   |             |       |
|--------------------------|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V7                       | V7-F3H | Weekend/holiday defrost no. 3 start hour                   | 36706 | 0 | 38858 | 3072  | RW | Word |   | V7-F2H...24 | hours |
| V7                       | V7-F3n | Weekend/holiday defrost no. 3 start minutes                | 36707 | 0 | 38858 | 12288 | RW | Word |   | 0...59      | min   |
| V7                       | V7-F3t | 3rd weekend/holiday defrost duration                       | 36708 | 0 | 38858 | 49152 | RW | Word |   | 0...250     | min   |
| V7                       | V7-F3S | 3rd weekend/holiday defrost end temperature                | 36709 | 0 | 38859 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-F4H | Weekend/holiday defrost no. 4 start hour                   | 36710 | 0 | 38859 | 12    | RW | Word |   | V7-F3H...24 | hours |
| V7                       | V7-F4n | Weekend/holiday defrost no. 4 start minutes                | 36711 | 0 | 38859 | 48    | RW | Word |   | 0...59      | min   |
| V7                       | V7-F4t | 4th weekend/holiday defrost duration                       | 36712 | 0 | 38859 | 192   | RW | Word |   | 0...250     | min   |
| V7                       | V7-F4S | 4th weekend/holiday defrost end temperature                | 36713 | 0 | 38859 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-F5H | Weekend/holiday defrost no. 5 start hour                   | 36714 | 0 | 38859 | 3072  | RW | Word |   | V7-F4H...24 | hours |
| V7                       | V7-F5n | Weekend/holiday defrost no. 5 start minutes                | 36715 | 0 | 38859 | 12288 | RW | Word |   | 0...59      | min   |
| V7                       | V7-F5t | 5th weekend/holiday defrost duration                       | 36716 | 0 | 38859 | 49152 | RW | Word |   | 0...250     | min   |
| V7                       | V7-F5S | 5th weekend/holiday defrost end temperature                | 36717 | 0 | 38860 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-F6H | Weekend/holiday defrost no. 6 start hour                   | 36718 | 0 | 38860 | 12    | RW | Word |   | V7-F5H...24 | hours |
| V7                       | V7-F6n | Weekend/holiday defrost no. 6 start minutes                | 36719 | 0 | 38860 | 48    | RW | Word |   | 0...59      | min   |
| V7                       | V7-F6t | 6th weekend/holiday defrost duration                       | 36720 | 0 | 38860 | 192   | RW | Word |   | 0...250     | min   |
| V7                       | V7-F6S | 6th weekend/holiday defrost end temperature                | 36721 | 0 | 38860 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-FP1 | Selection of evaporator fan probe in normal mode           | 36784 | 0 | 38860 | 3072  | RW | Word |   | 0...7       | num   |
| V7                       | V7-FP2 | Selection of evaporator fan probe in defrost               | 36785 | 0 | 38860 | 12288 | RW | Word |   | 0...7       | num   |
| V7                       | V7-FPt | FSt parameter mode (absolute or relative)                  | 36786 | 0 | 38860 | 49152 | RW | Word |   | 0...1       | flag  |
| V7                       | V7-FSt | Evaporator fan disabling temperature                       | 36787 | 0 | 38861 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V7                       | V7-FAd | Evaporator fan trigger differential                        | 36788 | 0 | 38861 | 12    | RW | Word |   | 0.1...25.0  | °C/°F |
| V7                       | V7-Fdt | Evaporator fan activation delay time after a defrost cycle | 36789 | 0 | 38861 | 48    | RW | Word |   | 0...250     | min   |
| V7                       | V7-dt  | Dripping time                                              | 36794 | 0 | 38861 | 192   | RW | Word |   | 0...250     | min   |
| V7                       | V7-dFd | Evaporator fan cut-out during defrost                      | 36792 | 0 | 38861 | 768   | RW | Word |   | 0...1       | flag  |
| V7                       | V7-FCO | Evaporator fan status with compressor output Off           | 36791 | 0 | 38861 | 3072  | RW | Word |   | 0...4       | num   |
| V7                       | V7-Fod | Evaporator fan status with door open                       | 36793 | 0 | 38861 | 12288 | RW | Word |   | 0...1       | flag  |

| Application 7 parameters |        |                                                            |       |   |       |       |    |      |   |              |       |
|--------------------------|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|-------|
| V7                       | V7-FdC | Evaporator fan shutoff delay after compressor deactivation | 36790 | 0 | 38861 | 49152 | RW | Word |   | 0...250      | min   |
| V7                       | V7-FOn | Evaporator fan On time in cyclical regulator mode          | 36795 | 0 | 38862 | 3     | RW | Word |   | 0...250      | min   |
| V7                       | V7-FOF | Evaporator fan Off time in cyclical regulator mode         | 36796 | 0 | 38862 | 12    | RW | Word |   | 0...250      | min   |
| V7                       | V7-Fnn | Evaporator fan ON time in night mode (duty cycle)          | 36797 | 0 | 38862 | 48    | RW | Word |   | 0...250      | min   |
| V7                       | V7-FnF | Evaporator fan OFF time in night mode (duty cycle)         | 36798 | 0 | 38862 | 192   | RW | Word |   | 0...250      | min   |
| V7                       | V7-FE1 | Variable speed fan probe selection                         | 36897 | 0 | 38886 | 48    | RW | Word |   | 0...12       | num   |
| V7                       | V7-FEt | Setpoint mode                                              | 36898 | 0 | 38886 | 192   | RW | Word |   | 0...1        | flag  |
| V7                       | V7-FES | Setpoint                                                   | 36899 | 0 | 38886 | 768   | RW | Word | Y | -58...302    | °C/°F |
| V7                       | V7-FEd | Band                                                       | 36900 | 0 | 38886 | 3072  | RW | Word |   | 0.1...50.0   | °C/°F |
| V7                       | V7-FEu | Cut-off band                                               | 36901 | 0 | 38886 | 12288 | RW | Word |   | 0.0...25.0   | °C/°F |
| V7                       | V7-FEC | Cut-off differential                                       | 36902 | 0 | 38886 | 49152 | RW | Word |   | 0.1...25.0   | °C/°F |
| V7                       | V7-FEr | Fan shutoff delay after compressor deactivation            | 36903 | 0 | 38887 | 3     | RW | Word |   | 0...250      | min   |
| V7                       | V7-FE2 | Minimum day percentage                                     | 36904 | 0 | 38887 | 12    | RW | Word |   | 0...100      | %     |
| V7                       | V7-FE3 | Maximum day percentage with compressor on                  | 36905 | 0 | 38887 | 48    | RW | Word |   | 0...100      | %     |
| V7                       | V7-FE4 | Maximum day percentage with compressor off                 | 36906 | 0 | 38887 | 192   | RW | Word |   | 0...100      | %     |
| V7                       | V7-FE5 | Minimum night percentage                                   | 36907 | 0 | 38887 | 768   | RW | Word |   | 0...100      | %     |
| V7                       | V7-FE6 | Maximum night percentage with compressor on                | 36908 | 0 | 38887 | 3072  | RW | Word |   | 0...100      | %     |
| V7                       | V7-FE7 | Maximum night percentage with compressor off               | 36909 | 0 | 38887 | 12288 | RW | Word |   | 0...100      | %     |
| V7                       | V7-FE8 | Percentage during defrost                                  | 36910 | 0 | 38887 | 49152 | RW | Word |   | 0...100      | %     |
| V7                       | V7-FE9 | Percentage in the event of probe error                     | 36911 | 0 | 38899 | 12    | RW | Word |   | 0...100      | %     |
| V7                       | V7-FEA | Maximum pick-up speed                                      | 36912 | 0 | 38899 | 48    | RW | Word |   | 0...100      | %     |
| V7                       | V7-FEb | Fan pick-up time                                           | 36913 | 0 | 38899 | 192   | RW | Word |   | 0...250      | s     |
| V7                       | V7-FEP | Fan forcing period at pick-up speed                        | 36914 | 0 | 38899 | 768   | RW | Word |   | 0...250      | min   |
| V7                       | V7-rA1 | Temperature alarm probe 1 selection                        | 36812 | 0 | 38862 | 768   | RW | Word |   | 0...7        | num   |
| V7                       | V7-rA2 | Temperature alarm probe 2 selection                        | 36813 | 0 | 38862 | 3072  | RW | Word |   | 0...7        | num   |
| V7                       | V7-Att | Alarm mode (absolute or relative)                          | 36814 | 0 | 38862 | 12288 | RW | Word |   | 0...1        | flag  |
| V7                       | V7-AFd | Alarm activation differential                              | 36815 | 0 | 38862 | 49152 | RW | Word |   | 0.1...25.0   | °C/°F |
| V7                       | V7-HA1 | Maximum alarm 1 threshold                                  | 36816 | 0 | 38863 | 3     | RW | Word | Y | V7-LA1...302 | °C/°F |

| Application 7 parameters |        |                                                                           |       |   |       |       |    |      |   |                |        |
|--------------------------|--------|---------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|--------|
| V7                       | V7-LA1 | Minimum alarm 1 threshold                                                 | 36817 | 0 | 38863 | 12    | RW | Word | Y | -58.0...V7-HA1 | °C/°F  |
| V7                       | V7-HA2 | Maximum alarm 2 threshold                                                 | 36818 | 0 | 38863 | 48    | RW | Word | Y | V7-LA2...302   | °C/°F  |
| V7                       | V7-LA2 | Minimum alarm 2 threshold                                                 | 36819 | 0 | 38863 | 192   | RW | Word | Y | -58.0...V7-HA2 | °C/°F  |
| V7                       | V7-PAO | Temperature alarm exclusion time from power-on                            | 36820 | 0 | 38863 | 768   | RW | Word |   | 0...10         | hours  |
| V7                       | V7-dAO | Exclusion time for temperature alarms after a defrost cycle               | 36822 | 0 | 38863 | 3072  | RW | Word |   | 0...250        | min    |
| V7                       | V7-OAO | High and low temperature alarms exclusion time after closing the door     | 36821 | 0 | 38863 | 12288 | RW | Word |   | 0...10         | hours  |
| V7                       | V7-tdO | Door open alarm exclusion time                                            | 36866 | 0 | 38863 | 49152 | RW | Word |   | 0...250        | min    |
| V7                       | V7-tA1 | Probe 1 High/Minimum Alarm Delay                                          | 36823 | 0 | 38864 | 3     | RW | Word |   | 0...250        | min    |
| V7                       | V7-tA2 | Probe 2 High/Minimum Alarm Delay                                          | 36824 | 0 | 38864 | 12    | RW | Word |   | 0...250        | min    |
| V7                       | V7-dAt | Defrost ended due to timeout alarm signaling                              | 36782 | 0 | 38864 | 48    | RW | Word |   | 0...1          | flag   |
| V7                       | V7-EAL | Regulators inhibited by external alarm                                    | 36826 | 0 | 38864 | 192   | RW | Word |   | 0...2          | num    |
| V7                       | V7-rA3 | Input used by the two threshold/LKD alarm regulator                       | 36885 | 0 | 38884 | 12288 | RW | Word |   | 0...8          | num    |
| V7                       | V7-ALL | Low alarm threshold (warning)                                             | 36886 | 0 | 38884 | 49152 | RW | Word |   | 0.0...V7-ALH   | num    |
| V7                       | V7-ALH | High alarm threshold (alarm)                                              | 36887 | 0 | 38885 | 3     | RW | Word |   | V7-ALL...100   | num    |
| V7                       | V7-dAL | Alarm leak differential                                                   | 36888 | 0 | 38885 | 12    | RW | Word |   | 0.1...100      | °C/°F  |
| V7                       | V7-AL1 | Time probe remains above the low threshold due to leak alarm activation   | 36889 | 0 | 38885 | 48    | RW | Word |   | 0...250        | min    |
| V7                       | V7-AL2 | Time probe remains above the high threshold due to leak alarm activation  | 36896 | 0 | 38886 | 12    | RW | Word |   | 0...250        | min    |
| V7                       | V7-tP  | Enables alarm acknowledgment with any key                                 | 36867 | 0 | 38864 | 768   | RW | Word |   | 0...1          | flag   |
| V7                       | V7-Art | Regular watchdog alarm activation period                                  | 36811 | 0 | 38864 | 3072  | RW | Word |   | 0...250        | min*10 |
| V7                       | V7-dSd | Enable light relay from door switch                                       | 36808 | 0 | 38864 | 12288 | RW | Word |   | 0...1          | flag   |
| V7                       | V7-dLt | Light relay off delay from door closure                                   | 36809 | 0 | 38864 | 49152 | RW | Word |   | 0...250        | min    |
| V7                       | V7-OFL | Enable cold room lights off via key during the delay set in parameter dLt | 36810 | 0 | 38865 | 3     | RW | Word |   | 0...1          | flag   |
| V7                       | V7-dOd | Enable utility shutoff upon door switch activation                        | 36825 | 0 | 38865 | 12    | RW | Word |   | 0...3          | num    |
| V7                       | V7-dOA | Behavior forced by digital input                                          | 36827 | 0 | 38865 | 48    | RW | Word |   | 0...5          | num    |
| V7                       | V7-PEA | Enable forced behavior from door switch and/or external alarm.            | 36828 | 0 | 38865 | 192   | RW | Word |   | 0...3          | num    |

| Application 7 parameters |         |                                                            |       |   |       |       |    |      |   |              |        |
|--------------------------|---------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|--------|
| V7                       | V7-dCO  | Compressor activation delay from acknowledgment            | 36829 | 0 | 38865 | 768   | RW | Word |   | 0...250      | min    |
| V7                       | V7-dFO  | Fan enabling delay from acknowledgment                     | 36830 | 0 | 38865 | 3072  | RW | Word |   | 0...250      | min    |
| V7                       | V7-ASb  | Instrument off active light/auxiliary digital input or key | 36856 | 0 | 38865 | 12288 | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L00  | Shared probe                                               | 36608 | 0 | 38865 | 49152 | RW | Word |   | 0...7        | num    |
| V7                       | V7-L01  | Distributed viewing (refers to secondary)                  | 36609 | 0 | 38866 | 3     | RW | Word |   | 0...2        | num    |
| V7                       | V7-L02  | Setpoint synchronization                                   | 36610 | 0 | 38866 | 12    | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L03  | Defrost synchronization                                    | 36611 | 0 | 38866 | 48    | RW | Word |   | 0...2        | num    |
| V7                       | V7-L04  | Inhibit resources at the end of defrost                    | 36612 | 0 | 38866 | 192   | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L05  | Stand-by synchronization                                   | 36613 | 0 | 38866 | 768   | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L06  | Lights synchronization                                     | 36614 | 0 | 38866 | 3072  | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L07  | Reduced set synchronization                                | 36615 | 0 | 38866 | 12288 | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L08  | AUX synchronization                                        | 36616 | 0 | 38866 | 49152 | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L09  | Shared saturation probe                                    | 36617 | 0 | 38867 | 3     | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L10  | Resource unlocking timeout during synchronized defrosts    | 36868 | 0 | 38867 | 12    | RW | Word |   | 0...250      | min    |
| V7                       | V7-L11  | Number of devices connected in Link2                       | 36618 | 0 | 38884 | 48    | RW | Word |   | 0...8        | num    |
| V7                       | V7-L12  | Alarm relay sharing in Link2                               | 36619 | 0 | 38884 | 192   | RW | Word |   | 0...2        | num    |
| V7                       | V7-L13  | Link2 serial frame configuration                           | 36879 | 0 | 38883 | 12288 | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L14  | Force cool mode                                            | 36895 | 0 | 38886 | 3     | RW | Word |   | 0...1        | flag   |
| V7                       | V7-L15  | Shared buzzer and alarm silenced via Link2                 | 36875 | 0 | 38888 | 48    | RW | Word |   | 0...2        | num    |
| V7                       | V7-dcS  | Deep cooling setpoint                                      | 36802 | 0 | 38867 | 768   | RW | Word | Y | -58.0...302  | °C/°F  |
| V7                       | V7-tdC  | Deep cooling duration                                      | 36803 | 0 | 38867 | 3072  | RW | Word |   | 0...250      | min    |
| V7                       | V7-dCC  | Defrost delay after deep cooling                           | 36804 | 0 | 38867 | 12288 | RW | Word |   | 0...250      | min    |
| V7                       | V7-ESSt | Type of action for the Energy Saving function              | 36731 | 0 | 38867 | 49152 | RW | Word |   | 0...8        | num    |
| V7                       | V7-ESF  | Night mode activation (Energy Saving)                      | 36799 | 0 | 38868 | 3     | RW | Word |   | 0...1        | flag   |
| V7                       | V7-Cdt  | Door closing time                                          | 36800 | 0 | 38868 | 12    | RW | Word |   | 0...255      | min*10 |
| V7                       | V7-ESo  | Low consumption mode disabling timeout (door switch)       | 36801 | 0 | 38868 | 48    | RW | Word |   | 0...10       | num    |
| V7                       | V7-OS1  | Offset on setpoint 1                                       | 36748 | 0 | 38868 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V7                       | V7-OS2  | Offset on setpoint 2                                       | 36749 | 0 | 38868 | 768   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V7                       | V7-Od1  | Refrigerated cabinets energy saving offset 1               | 36750 | 0 | 38868 | 3072  | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V7                       | V7-Od2  | Refrigerated cabinets energy saving offset 2               | 36751 | 0 | 38868 | 12288 | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V7                       | V7-dn1  | Differential during energy saving mode 1                   | 36739 | 0 | 38868 | 49152 | RW | Word | Y | -58.0...302  | °C/°F  |
| V7                       | V7-dn2  | Differential during energy saving mode 2                   | 36740 | 0 | 38869 | 3     | RW | Word | Y | -58.0...302  | °C/°F  |

| Application 7 parameters |        |                                                  |       |   |       |       |    |      |   |                |         |
|--------------------------|--------|--------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|---------|
| V7                       | V7-EdH | Weekday energy saving start hour                 | 36725 | 0 | 38869 | 12    | RW | Word |   | 0...24         | hours   |
| V7                       | V7-Edn | Weekday energy saving start minutes              | 36726 | 0 | 38869 | 48    | RW | Word |   | 0...59         | min     |
| V7                       | V7-Edd | Weekday energy saving duration                   | 36727 | 0 | 38869 | 192   | RW | Word |   | 1...72         | hours   |
| V7                       | V7-EFH | Weekend/holiday energy saving start hour         | 36728 | 0 | 38869 | 768   | RW | Word |   | 0...24         | hours   |
| V7                       | V7-EFn | Weekend/holiday energy saving start minutes      | 36729 | 0 | 38869 | 3072  | RW | Word |   | 0...59         | min     |
| V7                       | V7-EFd | Weekend/holiday energy saving duration           | 36730 | 0 | 38869 | 12288 | RW | Word |   | 1...72         | hours   |
| V7                       | V7-FH  | Frame heater probe selection                     | 36831 | 0 | 38869 | 49152 | RW | Word |   | 0...9          | num     |
| V7                       | V7-FHt | Frame heater period                              | 36833 | 0 | 38870 | 3     | RW | Word |   | 1...250        | s       |
| V7                       | V7-FH0 | Frame heater set                                 | 36834 | 0 | 38870 | 12    | RW | Word | Y | -58.0...302    | °C/°F   |
| V7                       | V7-FH1 | Frame heater offset                              | 36835 | 0 | 38870 | 48    | RW | Word |   | 0.0...25.0     | °C/°F   |
| V7                       | V7-FH2 | Frame heater band                                | 36836 | 0 | 38870 | 192   | RW | Word | Y | -58.0...302    | °C/°F   |
| V7                       | V7-FH3 | Frame heater minimum percentage/duty-cycle       | 36837 | 0 | 38870 | 768   | RW | Word |   | 0...100        | %       |
| V7                       | V7-FH4 | Frame heater maximum percentage/day duty-cycle   | 36838 | 0 | 38870 | 3072  | RW | Word |   | 0...100        | %       |
| V7                       | V7-FH5 | Frame heater maximum percentage/night duty-cycle | 36839 | 0 | 38870 | 12288 | RW | Word |   | 0...100        | %       |
| V7                       | V7-FH6 | Frame heater percentage/duty-cycle in defrost    | 36840 | 0 | 38870 | 49152 | RW | Word |   | 0...100        | %       |
| V7                       | V7-LOC | Disable terminal                                 | 36843 | 0 | 38871 | 3     | RW | Word |   | 0...1          | flag    |
| V7                       | V7-PS1 | Password 1 value                                 | 36844 | 0 | 38871 | 12    | RW | Word |   | 0...250        | num     |
| V7                       | V7-PS2 | Password 2 value                                 | 36845 | 0 | 38871 | 48    | RW | Word |   | 0...250        | num     |
| V7                       | V7-ndt | Display with decimal point                       | 36846 | 0 | 38871 | 192   | RW | Word |   | 0...1          | flag    |
| V7                       | V7-CA1 | Analog input 1 calibration                       | 36652 | 0 | 38871 | 768   | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V7                       | V7-CA2 | Analog input 2 calibration                       | 36653 | 0 | 38871 | 3072  | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V7                       | V7-CA3 | Analog input 3 calibration                       | 36654 | 0 | 38871 | 12288 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V7                       | V7-CA4 | Analog input 4 calibration                       | 36655 | 0 | 38871 | 49152 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V7                       | V7-CA5 | Analog input 5 calibration                       | 36656 | 0 | 38872 | 3     | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V7                       | V7-CA6 | Analog input 6 calibration                       | 36657 | 0 | 38872 | 12    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V7                       | V7-CA7 | Analog input 7 calibration                       | 36658 | 0 | 38872 | 48    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V7                       | V7-LdL | Minimum display value                            | 36847 | 0 | 38872 | 192   | RW | Word | Y | -58.0...V7-HdL | °C/°F   |
| V7                       | V7-HdL | Maximum display value                            | 36848 | 0 | 38872 | 768   | RW | Word | Y | V7-LdL...302   | °C/°F   |
| V7                       | V7-ddL | Display lock mode during a defrost               | 36849 | 0 | 38872 | 3072  | RW | Word |   | 0...2          | num     |
| V7                       | V7-Ldd | Display lock timeout from end of defrost         | 36850 | 0 | 38872 | 12288 | RW | Word |   | 0...250        | min     |
| V7                       | V7-dro | Select °C / °F                                   | 36851 | 0 | 38872 | 49152 | RW | Word |   | 0...1          | flag    |



| Application 7 parameters |        |                                               |       |   |       |       |    |      |   |          |      |
|--------------------------|--------|-----------------------------------------------|-------|---|-------|-------|----|------|---|----------|------|
| V7                       | V7-SbP | Pressure unit of measure                      | 36852 | 0 | 38873 | 3     | RW | Word |   | 0...1    | flag |
| V7                       | V7-ddd | Select main display value                     | 36853 | 0 | 38873 | 12    | RW | Word |   | 0...8    | num  |
| V7                       | V7-ddE | Resource displayed on ECHO                    | 36854 | 0 | 38873 | 48    | RW | Word |   | 0...11   | num  |
| V7                       | V7-rPH | Receiver maximum valve opening %              | 36805 | 0 | 38873 | 192   | RW | Word |   | 0...5    | num  |
| V7                       | V7-H00 | Select analog input type NTC/PTC              | 36620 | 0 | 38873 | 768   | RW | Word |   | 0...2    | num  |
| V7                       | V7-H02 | Function activation time from terminal        | 36855 | 0 | 38873 | 3072  | RW | Word |   | 0...250  | s    |
| V7                       | V7-H08 | Stand-by operating mode                       | 36857 | 0 | 38873 | 12288 | RW | Word |   | 0...2    | num  |
| V7                       | V7-H11 | Digital input 1 configurability and polarity  | 36623 | 0 | 38873 | 49152 | RW | Word | Y | -19...19 | num  |
| V7                       | V7-H12 | Digital input 2 configurability and polarity  | 36624 | 0 | 38874 | 3     | RW | Word | Y | -19...19 | num  |
| V7                       | V7-H13 | Digital input 3 configurability and polarity  | 36625 | 0 | 38874 | 12    | RW | Word | Y | -19...19 | num  |
| V7                       | V7-H14 | Digital input 4 configurability and polarity  | 36626 | 0 | 38874 | 48    | RW | Word | Y | -19...19 | num  |
| V7                       | V7-H15 | Digital input 5 configurability and polarity  | 36627 | 0 | 38874 | 192   | RW | Word | Y | -19...19 | num  |
| V7                       | V7-H16 | Digital input 6 configurability and polarity  | 36628 | 0 | 38874 | 768   | RW | Word | Y | -19...19 | num  |
| V7                       | V7-H17 | Digital input 7 configurability and polarity  | 36629 | 0 | 38874 | 3072  | RW | Word | Y | -19...19 | num  |
| V7                       | V7-H18 | Digital input 8 configurability and polarity  | 36630 | 0 | 38874 | 12288 | RW | Word | Y | -19...19 | num  |
| V7                       | V7-i01 | Digital input 9 configurability and polarity  | 36890 | 0 | 38885 | 192   | RW | Word | Y | -19...19 | num  |
| V7                       | V7-i02 | Digital input 10 configurability and polarity | 36891 | 0 | 38885 | 768   | RW | Word | Y | -19...19 | num  |
| V7                       | V7-dti | Digital inputs 1 and 2 delay unit of measure  | 36639 | 0 | 38874 | 49152 | RW | Word |   | 0...1    | flag |
| V7                       | V7-d11 | D.I. 1 activation indication delay time       | 36631 | 0 | 38875 | 3     | RW | Word |   | 0...255  | min  |
| V7                       | V7-d12 | D.I. 2 activation indication delay time       | 36632 | 0 | 38875 | 12    | RW | Word |   | 0...255  | min  |
| V7                       | V7-d13 | D.I. 3 activation indication delay time       | 36633 | 0 | 38875 | 48    | RW | Word |   | 0...255  | min  |
| V7                       | V7-d14 | D.I. 4 activation indication delay time       | 36634 | 0 | 38875 | 192   | RW | Word |   | 0...255  | min  |
| V7                       | V7-d15 | D.I. 5 activation indication delay time       | 36635 | 0 | 38875 | 768   | RW | Word |   | 0...255  | min  |
| V7                       | V7-d16 | D.I. 6 activation indication delay time       | 36636 | 0 | 38875 | 3072  | RW | Word |   | 0...255  | min  |
| V7                       | V7-d17 | D.I. 7 activation indication delay time       | 36637 | 0 | 38875 | 12288 | RW | Word |   | 0...255  | min  |
| V7                       | V7-d18 | D.I. 8 activation indication delay time       | 36638 | 0 | 38875 | 49152 | RW | Word |   | 0...255  | min  |

| Application 7 parameters |        |                                           |       |   |       |       |    |      |  |         |     |
|--------------------------|--------|-------------------------------------------|-------|---|-------|-------|----|------|--|---------|-----|
| V7                       | V7-01i | D.I. 9 activation indication delay time   | 36892 | 0 | 38885 | 3072  | RW | Word |  | 0...255 | min |
| V7                       | V7-02i | D.I. 10 activation indication delay time  | 36893 | 0 | 38885 | 12288 | RW | Word |  | 0...255 | min |
| V7                       | V7-H21 | Configurability of digital output 1       | 36660 | 0 | 38876 | 3     | RW | Word |  | 0...19  | num |
| V7                       | V7-H22 | Configurability of digital output 2       | 36661 | 0 | 38876 | 12    | RW | Word |  | 0...19  | num |
| V7                       | V7-H23 | Configurability of digital output 3       | 36662 | 0 | 38876 | 48    | RW | Word |  | 0...19  | num |
| V7                       | V7-H24 | Configurability of digital output 4       | 36663 | 0 | 38876 | 192   | RW | Word |  | 0...19  | num |
| V7                       | V7-H25 | Configurability of digital output 5       | 36664 | 0 | 38876 | 768   | RW | Word |  | 0...19  | num |
| V7                       | V7-H27 | Configurability of digital output 7       | 36666 | 0 | 38876 | 12288 | RW | Word |  | 0...19  | num |
| V7                       | V7-H29 | Enable buzzer                             | 36667 | 0 | 38876 | 49152 | RW | Word |  | 0...1   | num |
| V7                       | V7-d01 | Configurability of digital output 8       | 36883 | 0 | 38884 | 768   | RW | Word |  | 0...19  | num |
| V7                       | V7-d02 | Configurability of digital output 9       | 36884 | 0 | 38884 | 3072  | RW | Word |  | 0...19  | num |
| V7                       | V7-H31 | Configurability of the UP key             | 36858 | 0 | 38877 | 3     | RW | Word |  | 0...9   | num |
| V7                       | V7-H32 | Configurability of the DOWN key           | 36859 | 0 | 38877 | 12    | RW | Word |  | 0...9   | num |
| V7                       | V7-H33 | Configurability of the ESC key            | 36860 | 0 | 38877 | 48    | RW | Word |  | 0...9   | num |
| V7                       | V7-H34 | Configurability of the Free 1 key         | 36861 | 0 | 38877 | 192   | RW | Word |  | 0...9   | num |
| V7                       | V7-H35 | Configurability of the Free 2 key         | 36862 | 0 | 38877 | 768   | RW | Word |  | 0...9   | num |
| V7                       | V7-H36 | Configurability of the Free 3 key         | 36863 | 0 | 38877 | 3072  | RW | Word |  | 0...9   | num |
| V7                       | V7-H37 | Configurability of the Free 4 key         | 36864 | 0 | 38877 | 12288 | RW | Word |  | 0...9   | num |
| V7                       | V7-H41 | Configurability of analog input 1         | 36640 | 0 | 38877 | 49152 | RW | Word |  | 0...2   | num |
| V7                       | V7-H42 | Configurability of analog input 2         | 36641 | 0 | 38878 | 3     | RW | Word |  | 0...2   | num |
| V7                       | V7-H43 | Configurability of analog input 3         | 36642 | 0 | 38878 | 12    | RW | Word |  | 0...2   | num |
| V7                       | V7-H44 | Configurability of analog input 4         | 36643 | 0 | 38878 | 48    | RW | Word |  | 0...2   | num |
| V7                       | V7-H45 | Configurability of analog input 5         | 36644 | 0 | 38878 | 192   | RW | Word |  | 0...2   | num |
| V7                       | V7-H46 | Configurability of analog input 6         | 36645 | 0 | 38878 | 768   | RW | Word |  | 0...2   | num |
| V7                       | V7-H47 | Configurability of analog input 7         | 36646 | 0 | 38878 | 3072  | RW | Word |  | 0...2   | num |
| V7                       | V7-H48 | Configurability of analog input 8         | 36894 | 0 | 38885 | 49152 | RW | Word |  | 0...2   | num |
| V7                       | V7-H50 | Configurability of analog output 1        | 36668 | 0 | 38878 | 12288 | RW | Word |  | 0...1   | num |
| V7                       | V7-H51 | Function associated with analog output    | 36669 | 0 | 38878 | 49152 | RW | Word |  | 0...3   | num |
| V7                       | V7-H68 | RTC present                               | 36670 | 0 | 38879 | 3     | RW | Word |  | 0...1   | num |
| V7                       | V7-H70 | Selection of 1st sensor for virtual probe | 36648 | 0 | 38879 | 12    | RW | Word |  | 0...5   | num |
| V7                       | V7-H71 | Selection of 2nd sensor for virtual probe | 36649 | 0 | 38879 | 48    | RW | Word |  | 0...5   | num |

| Application 7 parameters |        |                                                                             |       |   |       |       |    |      |   |                 |       |
|--------------------------|--------|-----------------------------------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V7                       | V7-H72 | Day virtual probe calculation %                                             | 36650 | 0 | 38879 | 192   | RW | Word |   | 0...100         | %     |
| V7                       | V7-H73 | Night virtual probe calculation %                                           | 36651 | 0 | 38879 | 768   | RW | Word |   | 0...100         | %     |
| V7                       | V7-H74 | Selection of 1st sensor for filtered virtual probe                          | 36880 | 0 | 38883 | 49152 | RW | Word |   | 0...65635       | num   |
| V7                       | V7-H75 | Percentage in thousandths of the incoming signal for filtered virtual probe | 36881 | 0 | 38884 | 3     | RW | Word |   | 0...65635       | num   |
| V7                       | V7-H76 | Filtered virtual probe offset                                               | 36882 | 0 | 38884 | 12    | RW | Word |   | 0...65635       | num   |
| V7                       | V7-EtY | Selection of electronic expansion valve driver                              | 36865 | 0 | 38879 | 3072  | RW | Word |   | 0...1           | flag  |
| V7                       | UL     | Visibility of parameter transfer function (Device -> UNICARD/MFK)           | -     | - | 38882 | 3     | RW | Word |   | 0...3           | num   |
| V7                       | dL     | Visibility of parameter transfer function (UNICARD/MFK -> Device)           | -     | - | 38882 | 12    | RW | Word |   | 0...3           | num   |
| V7                       | Fr     | Visibility of UNICARD/MFK formatting function                               | -     | - | 38882 | 48    | RW | Word |   | 0...3           | num   |
| V7                       | V7-OHP | Selection of oil temperature probe                                          | 36872 | 0 | 38882 | 12288 | RW | Word |   | 0...8           | num   |
| V7                       | V7-OSP | Oil heater setpoint                                                         | 36873 | 0 | 38882 | 49152 | RW | Word | Y | V7-OLS...V7-OHS | °C/°F |
| V7                       | V7-OHd | Oil heater differential                                                     | 36874 | 0 | 38883 | 3     | RW | Word |   | 0.1...25.0      | °C/°F |
| V7                       | V7-OHS | Maximum oil heater setpoint value that can be set                           | 36876 | 0 | 38883 | 48    | RW | Word | Y | V7-OLS...302    | °C/°F |
| V7                       | V7-OLS | Minimum oil heater setpoint value that can be set                           | 36877 | 0 | 38883 | 192   | RW | Word | Y | -58.0...V7-OHS  | °C/°F |

| Application 8 parameters |        |                                              |       |   |       |       |    |      |   |                 |       |
|--------------------------|--------|----------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V8                       | V8-rE  | Regulation type                              | 37116 | 0 | 38944 | 3     | RW | Word |   | 0...6           | num   |
| V8                       | V8-rP1 | Thermostat regulation probe 1                | 37117 | 0 | 38944 | 12    | RW | Word |   | 0...8           | num   |
| V8                       | V8-rP2 | Thermostat regulation probe 2                | 37118 | 0 | 38944 | 48    | RW | Word |   | 0...9           | num   |
| V8                       | V8-SP1 | Regulation setpoint 1                        | 37119 | 0 | 38944 | 192   | RW | Word | Y | V8-LS1...V8-HS1 | °C/°F |
| V8                       | V8-dF1 | Setpoint differential 1                      | 37120 | 0 | 38944 | 768   | RW | Word | Y | -58.0...302     | °C/°F |
| V8                       | V8-SP2 | Regulation setpoint 2                        | 37121 | 0 | 38944 | 3072  | RW | Word | Y | V8-LS2...V8-HS2 | °C/°F |
| V8                       | V8-dF2 | Setpoint differential 2                      | 37122 | 0 | 38944 | 12288 | RW | Word | Y | -58.0...302     | °C/°F |
| V8                       | V8-Stt | Differential management mode                 | 37125 | 0 | 38944 | 49152 | RW | Word |   | 0...1           | flag  |
| V8                       | V8-HS1 | Maximum value that can be set for Setpoint 1 | 37128 | 0 | 38945 | 3     | RW | Word | Y | V8-LS1...V8-HdL | °C/°F |
| V8                       | V8-LS1 | Minimum value that can be set for Setpoint 1 | 37129 | 0 | 38945 | 12    | RW | Word | Y | V8-LdL...V8-HS1 | °C/°F |
| V8                       | V8-HS2 | Maximum value that can be set for Setpoint 2 | 37130 | 0 | 38945 | 48    | RW | Word | Y | V8-LS2...V8-HdL | °C/°F |
| V8                       | V8-LS2 | Minimum value that can be set for Setpoint 2 | 37131 | 0 | 38945 | 192   | RW | Word | Y | V8-LdL...V8-HS2 | °C/°F |
| V8                       | V8-HC1 | Setpoint 1 operating mode (Heating/Cooling)  | 37126 | 0 | 38945 | 768   | RW | Word |   | 0...1           | flag  |

| Application 8 parameters |        |                                                           |       |   |       |       |    |      |   |              |       |
|--------------------------|--------|-----------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|-------|
| V8                       | V8-HC2 | Setpoint 2 operating mode (Heating/Cooling)               | 37127 | 0 | 38945 | 3072  | RW | Word |   | 0...1        | flag  |
| V8                       | V8-Cit | Minimum compressor output activation time                 | 37136 | 0 | 38945 | 49152 | RW | Word |   | 0...250      | min   |
| V8                       | V8-CAt | Maximum compressor output activation time                 | 37137 | 0 | 38946 | 3     | RW | Word |   | 0...250      | min   |
| V8                       | V8-Ont | Compressor output ON time if regulation probe is faulty   | 37142 | 0 | 38946 | 12    | RW | Word |   | 0...250      | min   |
| V8                       | V8-OFt | Compressor output OFF time if regulation probe is faulty  | 37143 | 0 | 38946 | 48    | RW | Word |   | 0...250      | min   |
| V8                       | V8-dOn | Compressor output activation delay from call              | 37138 | 0 | 38946 | 192   | RW | Word |   | 0...250      | s     |
| V8                       | V8-dOF | Compressor output activation delay from switch-off        | 37139 | 0 | 38946 | 768   | RW | Word |   | 0...250      | min   |
| V8                       | V8-dbi | Delay between two consecutive compressor output power-ons | 37140 | 0 | 38946 | 3072  | RW | Word |   | 0...250      | min   |
| V8                       | V8-OdO | Output activation delay at startup                        | 37141 | 0 | 38946 | 12288 | RW | Word |   | 0...250      | min   |
| V8                       | V8-CFP | Condenser pre-ventilation time in Heat/Cool               | 37225 | 0 | 38947 | 12    | RW | Word |   | 0...255      | s     |
| V8                       | V8-CFd | Condenser fan cut-out during defrosting.                  | 37226 | 0 | 38947 | 48    | RW | Word |   | 0...1        | flag  |
| V8                       | V8-OF1 | Remote offset                                             | 37147 | 0 | 38947 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F |
| V8                       | V8-Pot | Pump down time                                            | 37253 | 0 | 38978 | 192   | RW | Word |   | 0...250      | s     |
| V8                       | V8-SS1 | Compressor softstart: advance hotgas valve opening        | 37254 | 0 | 38978 | 768   | RW | Word |   | 0...250      | s     |
| V8                       | V8-SS2 | Compressor softstart: delay hotgas valve closing          | 37255 | 0 | 38978 | 3072  | RW | Word |   | 0...250      | s     |
| V8                       | V8-dP1 | Select defrost probe 1                                    | 37148 | 0 | 38947 | 768   | RW | Word |   | 0...8        | num   |
| V8                       | V8-dP2 | Defrost probe 2 selection                                 | 37149 | 0 | 38947 | 3072  | RW | Word |   | 0...8        | num   |
| V8                       | V8-dty | Type of defrost                                           | 37152 | 0 | 38947 | 12288 | RW | Word |   | 0...4        | num   |
| V8                       | V8-dFt | Dual evaporator defrost activation mode                   | 37150 | 0 | 38947 | 49152 | RW | Word |   | 0...2        | num   |
| V8                       | V8-dit | Interval between defrosts                                 | 37153 | 0 | 38948 | 3     | RW | Word |   | 0...250      | hours |
| V8                       | V8-dt1 | Unit of measure for defrost intervals                     | 37156 | 0 | 38948 | 12    | RW | Word |   | 0...2        | num   |
| V8                       | V8-dt2 | Unit of measure for defrost duration                      | 37157 | 0 | 38948 | 48    | RW | Word |   | 0...2        | num   |
| V8                       | V8-dCt | Defrost interval count mode                               | 37151 | 0 | 38948 | 192   | RW | Word |   | 0...5        | num   |
| V8                       | V8-dOH | Defrost cycle activation delay from the call              | 37158 | 0 | 38948 | 768   | RW | Word |   | 0...250      | min   |
| V8                       | V8-dE1 | Evaporator 1 defrost maximum duration                     | 37154 | 0 | 38948 | 3072  | RW | Word |   | 1...250      | min   |
| V8                       | V8-dE2 | Evaporator 2 defrost maximum duration                     | 37155 | 0 | 38948 | 12288 | RW | Word |   | 1...250      | min   |
| V8                       | V8-dS1 | Evaporator 1 defrost end temperature                      | 37160 | 0 | 38948 | 49152 | RW | Word | Y | -58.0...302  | °C/°F |
| V8                       | V8-dS2 | Evaporator 2 defrost end temperature                      | 37161 | 0 | 38949 | 3     | RW | Word | Y | -58.0...302  | °C/°F |

| Application 8 parameters |        |                                                                 |       |   |       |       |    |      |   |             |       |
|--------------------------|--------|-----------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V8                       | V8-dSS | Temperature threshold for starting defrost                      | 37159 | 0 | 38949 | 12    | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-dPO | Defrost activation request at power-on                          | 37162 | 0 | 38949 | 48    | RW | Word |   | 0...1       | flag  |
| V8                       | V8-tcd | Compressor output activation/deactivation time before a defrost | 37163 | 0 | 38949 | 192   | RW | Word | Y | -60...60    | min   |
| V8                       | V8-ndE | minimum defrost duration time                                   | 37164 | 0 | 38949 | 768   | RW | Word |   | 0...250     | min   |
| V8                       | V8-PdC | Hot gas extraction time at the end of the defrost               | 37165 | 0 | 38949 | 3072  | RW | Word |   | 0...250     | min   |
| V8                       | V8-tPd | Pump down time before defrost start                             | 37167 | 0 | 38949 | 12288 | RW | Word |   | 0...255     | min   |
| V8                       | V8-dPH | Regular defrost start hour                                      | 37106 | 0 | 38949 | 49152 | RW | Word |   | 0...24      | hours |
| V8                       | V8-dPn | Regular defrost start minutes                                   | 37107 | 0 | 38950 | 3     | RW | Word |   | 0...59      | min   |
| V8                       | V8-dPd | Regular defrost interval duration                               | 37108 | 0 | 38950 | 12    | RW | Word |   | 1...7       | day   |
| V8                       | V8-Fd1 | 1st weekend/holiday day                                         | 37055 | 0 | 38950 | 48    | RW | Word |   | 0...7       | num   |
| V8                       | V8-Fd2 | 2nd weekend/holiday day                                         | 37056 | 0 | 38950 | 192   | RW | Word |   | 0...7       | num   |
| V8                       | V8-Edt | Timeout and defrost end temperature specific to each event      | 37057 | 0 | 38950 | 768   | RW | Word |   | 0...1       | flag  |
| V8                       | V8-PrH | Basin heater pre-activation time                                | 37262 | 0 | 38979 | 3072  | RW | Word |   | 0...255     | min   |
| V8                       | V8-Fdn | Weekday defrost number                                          | 37005 | 0 | 38984 | 3     | RW | Word |   | 0...250     | num   |
| V8                       | V8-FFn | Weekend/holiday defrost number                                  | 37006 | 0 | 38984 | 12    | RW | Word |   | 0...250     | num   |
| V8                       | V8-d1H | Weekday defrost no. 1 start hour                                | 37058 | 0 | 38950 | 3072  | RW | Word |   | 0...24      | hours |
| V8                       | V8-d1n | Weekday defrost no. 1 start minute                              | 37059 | 0 | 38950 | 12288 | RW | Word |   | 0...59      | min   |
| V8                       | V8-d1t | 1st weekday defrost duration                                    | 37060 | 0 | 38950 | 49152 | RW | Word |   | 0...250     | min   |
| V8                       | V8-d1S | 1st weekday defrost end temperature                             | 37061 | 0 | 38951 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-d2H | Weekday defrost no. 2 start hour                                | 37062 | 0 | 38951 | 12    | RW | Word |   | V8-d1H...24 | hours |
| V8                       | V8-d2n | Weekday defrost no. 2 start minutes                             | 37063 | 0 | 38951 | 48    | RW | Word |   | 0...59      | min   |
| V8                       | V8-d2t | 2nd weekday defrost duration                                    | 37064 | 0 | 38951 | 192   | RW | Word |   | 0...250     | min   |
| V8                       | V8-d2S | 2nd weekday defrost end temperature                             | 37065 | 0 | 38951 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-d3H | Weekday defrost no. 3 start hour                                | 37066 | 0 | 38951 | 3072  | RW | Word |   | V8-d2H...24 | hours |
| V8                       | V8-d3n | Weekday defrost no. 3 start minutes                             | 37067 | 0 | 38951 | 12288 | RW | Word |   | 0...59      | min   |
| V8                       | V8-d3t | 3rd weekday defrost duration                                    | 37068 | 0 | 38951 | 49152 | RW | Word |   | 0...250     | min   |
| V8                       | V8-d3S | 3rd weekday defrost end temperature                             | 37069 | 0 | 38952 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-d4H | Weekday defrost no. 4 start hour                                | 37070 | 0 | 38952 | 12    | RW | Word |   | V8-d3H...24 | hours |
| V8                       | V8-d4n | Weekday defrost no. 4 start minutes                             | 37071 | 0 | 38952 | 48    | RW | Word |   | 0...59      | min   |

| Application 8 parameters |        |                                             |       |   |       |       |    |      |   |             |       |
|--------------------------|--------|---------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V8                       | V8-d4t | 4th weekday defrost duration                | 37072 | 0 | 38952 | 192   | RW | Word |   | 0...250     | min   |
| V8                       | V8-d4S | 4th weekday defrost end temperature         | 37073 | 0 | 38952 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-d5H | Weekday defrost no. 5 start hour            | 37074 | 0 | 38952 | 3072  | RW | Word |   | V8-d4H...24 | hours |
| V8                       | V8-d5n | Weekday defrost no. 5 start minutes         | 37075 | 0 | 38952 | 12288 | RW | Word |   | 0...59      | min   |
| V8                       | V8-d5t | 5th weekday defrost duration                | 37076 | 0 | 38952 | 49152 | RW | Word |   | 0...250     | min   |
| V8                       | V8-d5S | 5th weekday defrost end temperature         | 37077 | 0 | 38953 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-d6H | Weekday defrost no. 6 start hour            | 37078 | 0 | 38953 | 12    | RW | Word |   | V8-d5H...24 | hours |
| V8                       | V8-d6n | Weekday defrost no. 6 start minutes         | 37079 | 0 | 38953 | 48    | RW | Word |   | 0...59      | min   |
| V8                       | V8-d6t | 6th weekday defrost duration                | 37080 | 0 | 38953 | 192   | RW | Word |   | 0...250     | min   |
| V8                       | V8-d6S | 6th weekday defrost end temperature         | 37081 | 0 | 38953 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-F1H | Weekend/holiday defrost no. 1 start hour    | 37082 | 0 | 38953 | 3072  | RW | Word |   | 0...24      | hours |
| V8                       | V8-F1n | Weekend/holiday defrost no. 1 start minute  | 37083 | 0 | 38953 | 12288 | RW | Word |   | 0...59      | min   |
| V8                       | V8-F1t | 1st weekend/holiday defrost duration        | 37084 | 0 | 38953 | 49152 | RW | Word |   | 0...250     | min   |
| V8                       | V8-F1S | 1st weekend/holiday defrost end temperature | 37085 | 0 | 38954 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-F2H | Weekend/holiday defrost no. 2 start hour    | 37086 | 0 | 38954 | 12    | RW | Word |   | V8-F1H...24 | hours |
| V8                       | V8-F2n | Weekend/holiday defrost no. 2 start minutes | 37087 | 0 | 38954 | 48    | RW | Word |   | 0...59      | min   |
| V8                       | V8-F2t | 2nd weekend/holiday defrost duration        | 37088 | 0 | 38954 | 192   | RW | Word |   | 0...250     | min   |
| V8                       | V8-F2S | 2nd weekend/holiday defrost end temperature | 37089 | 0 | 38954 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-F3H | Weekend/holiday defrost no. 3 start hour    | 37090 | 0 | 38954 | 3072  | RW | Word |   | V8-F2H...24 | hours |
| V8                       | V8-F3n | Weekend/holiday defrost no. 3 start minutes | 37091 | 0 | 38954 | 12288 | RW | Word |   | 0...59      | min   |
| V8                       | V8-F3t | 3rd weekend/holiday defrost duration        | 37092 | 0 | 38954 | 49152 | RW | Word |   | 0...250     | min   |
| V8                       | V8-F3S | 3rd weekend/holiday defrost end temperature | 37093 | 0 | 38955 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-F4H | Weekend/holiday defrost no. 4 start hour    | 37094 | 0 | 38955 | 12    | RW | Word |   | V8-F3H...24 | hours |
| V8                       | V8-F4n | Weekend/holiday defrost no. 4 start minutes | 37095 | 0 | 38955 | 48    | RW | Word |   | 0...59      | min   |
| V8                       | V8-F4t | 4th weekend/holiday defrost duration        | 37096 | 0 | 38955 | 192   | RW | Word |   | 0...250     | min   |
| V8                       | V8-F4S | 4th weekend/holiday defrost end temperature | 37097 | 0 | 38955 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-F5H | Weekend/holiday defrost no. 5 start hour    | 37098 | 0 | 38955 | 3072  | RW | Word |   | V8-F4H...24 | hours |

| Application 8 parameters |        |                                                            |       |   |       |       |    |      |   |             |       |
|--------------------------|--------|------------------------------------------------------------|-------|---|-------|-------|----|------|---|-------------|-------|
| V8                       | V8-F5n | Weekend/holiday defrost no. 5 start minutes                | 37099 | 0 | 38955 | 12288 | RW | Word |   | 0...59      | min   |
| V8                       | V8-F5t | 5th weekend/holiday defrost duration                       | 37100 | 0 | 38955 | 49152 | RW | Word |   | 0...250     | min   |
| V8                       | V8-F5S | 5th weekend/holiday defrost end temperature                | 37101 | 0 | 38956 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-F6H | Weekend/holiday defrost no. 6 start hour                   | 37102 | 0 | 38956 | 12    | RW | Word |   | V8-F5H...24 | hours |
| V8                       | V8-F6n | Weekend/holiday defrost no. 6 start minutes                | 37103 | 0 | 38956 | 48    | RW | Word |   | 0...59      | min   |
| V8                       | V8-F6t | 6th weekend/holiday defrost duration                       | 37104 | 0 | 38956 | 192   | RW | Word |   | 0...250     | min   |
| V8                       | V8-F6S | 6th weekend/holiday defrost end temperature                | 37105 | 0 | 38956 | 768   | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-FP1 | Selection of evaporator fan probe in normal mode           | 37168 | 0 | 38956 | 3072  | RW | Word |   | 0...7       | num   |
| V8                       | V8-FP2 | Selection of evaporator fan probe in defrost               | 37169 | 0 | 38956 | 12288 | RW | Word |   | 0...7       | num   |
| V8                       | V8-FPt | FSt parameter mode (absolute or relative)                  | 37170 | 0 | 38956 | 49152 | RW | Word |   | 0...1       | flag  |
| V8                       | V8-FSt | Evaporator fan disabling temperature                       | 37171 | 0 | 38957 | 3     | RW | Word | Y | -58.0...302 | °C/°F |
| V8                       | V8-FAd | Evaporator fan trigger differential                        | 37172 | 0 | 38957 | 12    | RW | Word |   | 0.1...25.0  | °C/°F |
| V8                       | V8-Fdt | Evaporator fan activation delay time after a defrost cycle | 37173 | 0 | 38957 | 48    | RW | Word |   | 0...250     | min   |
| V8                       | V8-dt  | Dripping time                                              | 37178 | 0 | 38957 | 192   | RW | Word |   | 0...250     | min   |
| V8                       | V8-dFd | Evaporator fan cut-out during defrost                      | 37176 | 0 | 38957 | 768   | RW | Word |   | 0...1       | flag  |
| V8                       | V8-FCO | Evaporator fan status with compressor output Off           | 37175 | 0 | 38957 | 3072  | RW | Word |   | 0...4       | num   |
| V8                       | V8-Fod | Evaporator fan status with door open                       | 37177 | 0 | 38957 | 12288 | RW | Word |   | 0...1       | flag  |
| V8                       | V8-FdC | Evaporator fan shutoff delay after compressor deactivation | 37174 | 0 | 38957 | 49152 | RW | Word |   | 0...250     | min   |
| V8                       | V8-FOn | Evaporator fan On time in cyclical regulator mode          | 37179 | 0 | 38958 | 3     | RW | Word |   | 0...250     | min   |
| V8                       | V8-FOF | Evaporator fan Off time in cyclical regulator mode         | 37180 | 0 | 38958 | 12    | RW | Word |   | 0...250     | min   |
| V8                       | V8-Fnn | Evaporator fan ON time in night mode (duty cycle)          | 37181 | 0 | 38958 | 48    | RW | Word |   | 0...250     | min   |
| V8                       | V8-FnF | Evaporator fan OFF time in night mode (duty cycle)         | 37182 | 0 | 38958 | 192   | RW | Word |   | 0...250     | min   |
| V8                       | V8-FE1 | Variable speed fan probe selection                         | 37281 | 0 | 38982 | 48    | RW | Word |   | 0...12      | num   |
| V8                       | V8-FEt | Setpoint mode                                              | 37282 | 0 | 38982 | 192   | RW | Word |   | 0...1       | flag  |
| V8                       | V8-FES | Setpoint                                                   | 37283 | 0 | 38982 | 768   | RW | Word | Y | -58...302   | °C/°F |
| V8                       | V8-FEd | Band                                                       | 37284 | 0 | 38982 | 3072  | RW | Word |   | 0.1...50.0  | °C/°F |
| V8                       | V8-FEu | Cut-off band                                               | 37285 | 0 | 38982 | 12288 | RW | Word |   | 0.0...25.0  | °C/°F |
| V8                       | V8-FEC | Cut-off differential                                       | 37286 | 0 | 38982 | 49152 | RW | Word |   | 0.1...25.0  | °C/°F |

| Application 8 parameters |        |                                                                       |       |   |       |       |    |      |   |                |       |
|--------------------------|--------|-----------------------------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|-------|
| V8                       | V8-FEr | Fan shutoff delay after compressor deactivation                       | 37287 | 0 | 38983 | 3     | RW | Word |   | 0...250        | min   |
| V8                       | V8-FE2 | Minimum day percentage                                                | 37288 | 0 | 38983 | 12    | RW | Word |   | 0...100        | %     |
| V8                       | V8-FE3 | Maximum day percentage with compressor on                             | 37289 | 0 | 38983 | 48    | RW | Word |   | 0...100        | %     |
| V8                       | V8-FE4 | Maximum day percentage with compressor off                            | 37290 | 0 | 38983 | 192   | RW | Word |   | 0...100        | %     |
| V8                       | V8-FE5 | Minimum night percentage                                              | 37291 | 0 | 38983 | 768   | RW | Word |   | 0...100        | %     |
| V8                       | V8-FE6 | Maximum night percentage with compressor on                           | 37292 | 0 | 38983 | 3072  | RW | Word |   | 0...100        | %     |
| V8                       | V8-FE7 | Maximum night percentage with compressor off                          | 37293 | 0 | 38983 | 12288 | RW | Word |   | 0...100        | %     |
| V8                       | V8-FE8 | Percentage during defrost                                             | 37294 | 0 | 38983 | 49152 | RW | Word |   | 0...100        | %     |
| V8                       | V8-FE9 | Percentage in the event of probe error                                | 37295 | 0 | 38995 | 12    | RW | Word |   | 0...100        | %     |
| V8                       | V8-FEA | Maximum pick-up speed                                                 | 37296 | 0 | 38995 | 48    | RW | Word |   | 0...100        | %     |
| V8                       | V8-FEb | Fan pick-up time                                                      | 37297 | 0 | 38995 | 192   | RW | Word |   | 0...250        | s     |
| V8                       | V8-FEP | Fan forcing period at pick-up speed                                   | 37298 | 0 | 38995 | 768   | RW | Word |   | 0...250        | min   |
| V8                       | V8-rA1 | Temperature alarm probe 1 selection                                   | 37196 | 0 | 38958 | 768   | RW | Word |   | 0...7          | num   |
| V8                       | V8-rA2 | Temperature alarm probe 2 selection                                   | 37197 | 0 | 38958 | 3072  | RW | Word |   | 0...7          | num   |
| V8                       | V8-Att | Alarm mode (absolute or relative)                                     | 37198 | 0 | 38958 | 12288 | RW | Word |   | 0...1          | flag  |
| V8                       | V8-AFd | Alarm activation differential                                         | 37199 | 0 | 38958 | 49152 | RW | Word |   | 0.1...25.0     | °C/°F |
| V8                       | V8-HA1 | Maximum alarm 1 threshold                                             | 37200 | 0 | 38959 | 3     | RW | Word | Y | V8-LA1...302   | °C/°F |
| V8                       | V8-LA1 | Minimum alarm 1 threshold                                             | 37201 | 0 | 38959 | 12    | RW | Word | Y | -58.0...V8-HA1 | °C/°F |
| V8                       | V8-HA2 | Maximum alarm 2 threshold                                             | 37202 | 0 | 38959 | 48    | RW | Word | Y | V8-LA2...302   | °C/°F |
| V8                       | V8-LA2 | Minimum alarm 2 threshold                                             | 37203 | 0 | 38959 | 192   | RW | Word | Y | -58.0...V8-HA2 | °C/°F |
| V8                       | V8-PAO | Temperature alarm exclusion time from power-on                        | 37204 | 0 | 38959 | 768   | RW | Word |   | 0...10         | hours |
| V8                       | V8-dAO | Exclusion time for temperature alarms after a defrost cycle           | 37206 | 0 | 38959 | 3072  | RW | Word |   | 0...250        | min   |
| V8                       | V8-OAO | High and low temperature alarms exclusion time after closing the door | 37205 | 0 | 38959 | 12288 | RW | Word |   | 0...10         | hours |
| V8                       | V8-tdO | Door open alarm exclusion time                                        | 37250 | 0 | 38959 | 49152 | RW | Word |   | 0...250        | min   |
| V8                       | V8-tA1 | Probe 1 High/Minimum Alarm Delay                                      | 37207 | 0 | 38960 | 3     | RW | Word |   | 0...250        | min   |
| V8                       | V8-tA2 | Probe 2 High/Minimum Alarm Delay                                      | 37208 | 0 | 38960 | 12    | RW | Word |   | 0...250        | min   |
| V8                       | V8-dAt | Defrost ended due to timeout alarm signaling                          | 37166 | 0 | 38960 | 48    | RW | Word |   | 0...1          | flag  |



| Application 8 parameters |        |                                                                           |       |   |       |       |    |      |  |              |        |
|--------------------------|--------|---------------------------------------------------------------------------|-------|---|-------|-------|----|------|--|--------------|--------|
| V8                       | V8-EAL | Regulators inhibited by external alarm                                    | 37210 | 0 | 38960 | 192   | RW | Word |  | 0...2        | num    |
| V8                       | V8-rA3 | Input used by the two threshold/LKD alarm regulator.                      | 37269 | 0 | 38980 | 12288 | RW | Word |  | 0...8        | num    |
| V8                       | V8-ALL | Low alarm threshold (warning)                                             | 37270 | 0 | 38980 | 49152 | RW | Word |  | 0.0...V8-ALH | num    |
| V8                       | V8-ALH | High alarm threshold (alarm)                                              | 37271 | 0 | 38981 | 3     | RW | Word |  | V8-ALL...100 | num    |
| V8                       | V8-dAL | Alarm leak differential                                                   | 37272 | 0 | 38981 | 12    | RW | Word |  | 0.1...100    | °C/°F  |
| V8                       | V8-AL1 | Time probe remains above the low threshold due to leak alarm activation   | 37273 | 0 | 38981 | 48    | RW | Word |  | 0...250      | min    |
| V8                       | V8-AL2 | Time probe remains above the high threshold due to leak alarm activation  | 37280 | 0 | 38982 | 12    | RW | Word |  | 0...250      | min    |
| V8                       | V8-tP  | Enables alarm acknowledgment with any key                                 | 37251 | 0 | 38960 | 768   | RW | Word |  | 0...1        | flag   |
| V8                       | V8-Art | Regular watchdog alarm activation period                                  | 37195 | 0 | 38960 | 3072  | RW | Word |  | 0...250      | min*10 |
| V8                       | V8-dSd | Enable light relay from door switch                                       | 37192 | 0 | 38960 | 12288 | RW | Word |  | 0...1        | flag   |
| V8                       | V8-dLt | Light relay off delay from door closure                                   | 37193 | 0 | 38960 | 49152 | RW | Word |  | 0...250      | min    |
| V8                       | V8-OFL | Enable cold room lights off via key during the delay set in parameter dLt | 37194 | 0 | 38961 | 3     | RW | Word |  | 0...1        | flag   |
| V8                       | V8-dOd | Enable utility shutoff upon door switch activation                        | 37209 | 0 | 38961 | 12    | RW | Word |  | 0...3        | num    |
| V8                       | V8-dOA | Behavior forced by digital input                                          | 37211 | 0 | 38961 | 48    | RW | Word |  | 0...5        | num    |
| V8                       | V8-PEA | Enable forced behavior from door switch and/or external alarm.            | 37212 | 0 | 38961 | 192   | RW | Word |  | 0...3        | num    |
| V8                       | V8-dCO | Compressor activation delay from acknowledgment                           | 37213 | 0 | 38961 | 768   | RW | Word |  | 0...250      | min    |
| V8                       | V8-dFO | Fan enabling delay from acknowledgment                                    | 37214 | 0 | 38961 | 3072  | RW | Word |  | 0...250      | min    |
| V8                       | V8-ASb | Instrument off active light/auxiliary digital input or key                | 37240 | 0 | 38961 | 12288 | RW | Word |  | 0...1        | flag   |
| V8                       | V8-L00 | Shared probe                                                              | 36992 | 0 | 38961 | 49152 | RW | Word |  | 0...7        | num    |
| V8                       | V8-L01 | Distributed viewing (refers to secondary)                                 | 36993 | 0 | 38962 | 3     | RW | Word |  | 0...2        | num    |
| V8                       | V8-L02 | Setpoint synchronization                                                  | 36994 | 0 | 38962 | 12    | RW | Word |  | 0...1        | flag   |
| V8                       | V8-L03 | Defrost synchronization                                                   | 36995 | 0 | 38962 | 48    | RW | Word |  | 0...2        | num    |
| V8                       | V8-L04 | Inhibit resources at the end of defrost                                   | 36996 | 0 | 38962 | 192   | RW | Word |  | 0...1        | flag   |
| V8                       | V8-L05 | Stand-by synchronization                                                  | 36997 | 0 | 38962 | 768   | RW | Word |  | 0...1        | flag   |
| V8                       | V8-L06 | Lights synchronization                                                    | 36998 | 0 | 38962 | 3072  | RW | Word |  | 0...1        | flag   |
| V8                       | V8-L07 | Reduced set synchronization                                               | 36999 | 0 | 38962 | 12288 | RW | Word |  | 0...1        | flag   |
| V8                       | V8-L08 | AUX synchronization                                                       | 37000 | 0 | 38962 | 49152 | RW | Word |  | 0...1        | flag   |

| Application 8 parameters |        |                                                         |       |   |       |       |    |      |   |              |        |
|--------------------------|--------|---------------------------------------------------------|-------|---|-------|-------|----|------|---|--------------|--------|
| V8                       | V8-L09 | Shared saturation probe                                 | 37001 | 0 | 38963 | 3     | RW | Word |   | 0...1        | flag   |
| V8                       | V8-L10 | Resource unlocking timeout during synchronized defrosts | 37252 | 0 | 38963 | 12    | RW | Word |   | 0...250      | min    |
| V8                       | V8-L11 | Number of devices connected in Link2                    | 37002 | 0 | 38980 | 48    | RW | Word |   | 0...8        | num    |
| V8                       | V8-L12 | Alarm relay sharing in Link2                            | 37003 | 0 | 38980 | 192   | RW | Word |   | 0...2        | num    |
| V8                       | V8-L13 | Link2 serial frame configuration                        | 37263 | 0 | 38979 | 12288 | RW | Word |   | 0...1        | flag   |
| V8                       | V8-L14 | Force cool mode                                         | 37279 | 0 | 38982 | 3     | RW | Word |   | 0...1        | flag   |
| V8                       | V8-L15 | Shared buzzer and alarm silenced via Link2              | 37259 | 0 | 38984 | 48    | RW | Word |   | 0...2        | num    |
| V8                       | V8-dcS | Deep cooling setpoint                                   | 37186 | 0 | 38963 | 768   | RW | Word | Y | -58.0...302  | °C/°F  |
| V8                       | V8-tdC | Deep cooling duration                                   | 37187 | 0 | 38963 | 3072  | RW | Word |   | 0...250      | min    |
| V8                       | V8-dCC | Defrost delay after deep cooling                        | 37188 | 0 | 38963 | 12288 | RW | Word |   | 0...250      | min    |
| V8                       | V8-ESt | Type of action for the Energy Saving function           | 37115 | 0 | 38963 | 49152 | RW | Word |   | 0...8        | num    |
| V8                       | V8-ESF | Night mode activation (Energy Saving)                   | 37183 | 0 | 38964 | 3     | RW | Word |   | 0...1        | flag   |
| V8                       | V8-Cdt | Door closing time                                       | 37184 | 0 | 38964 | 12    | RW | Word |   | 0...255      | min*10 |
| V8                       | V8-ESo | Low consumption mode disabling timeout (door switch)    | 37185 | 0 | 38964 | 48    | RW | Word |   | 0...10       | num    |
| V8                       | V8-OS1 | Offset on setpoint 1                                    | 37132 | 0 | 38964 | 192   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V8                       | V8-OS2 | Offset on setpoint 2                                    | 37133 | 0 | 38964 | 768   | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V8                       | V8-Od1 | Refrigerated cabinets energy saving offset 1            | 37134 | 0 | 38964 | 3072  | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V8                       | V8-Od2 | Refrigerated cabinets energy saving offset 2            | 37135 | 0 | 38964 | 12288 | RW | Word | Y | -50.0...50.0 | °C/°F  |
| V8                       | V8-dn1 | Differential during energy saving mode 1                | 37123 | 0 | 38964 | 49152 | RW | Word | Y | -58.0...302  | °C/°F  |
| V8                       | V8-dn2 | Differential during energy saving mode 2                | 37124 | 0 | 38965 | 3     | RW | Word | Y | -58.0...302  | °C/°F  |
| V8                       | V8-EdH | Weekday energy saving start hour                        | 37109 | 0 | 38965 | 12    | RW | Word |   | 0...24       | hours  |
| V8                       | V8-Edn | Weekday energy saving start minutes                     | 37110 | 0 | 38965 | 48    | RW | Word |   | 0...59       | min    |
| V8                       | V8-Edd | Weekday energy saving duration                          | 37111 | 0 | 38965 | 192   | RW | Word |   | 1...72       | hours  |
| V8                       | V8-EFH | Weekend/holiday energy saving start hour                | 37112 | 0 | 38965 | 768   | RW | Word |   | 0...24       | hours  |
| V8                       | V8-EFh | Weekend/holiday energy saving start minutes             | 37113 | 0 | 38965 | 3072  | RW | Word |   | 0...59       | min    |
| V8                       | V8-EFd | Weekend/holiday energy saving duration                  | 37114 | 0 | 38965 | 12288 | RW | Word |   | 1...72       | hours  |
| V8                       | V8-FH  | Frame heater probe selection                            | 37215 | 0 | 38965 | 49152 | RW | Word |   | 0...9        | num    |
| V8                       | V8-FHt | Frame heater period                                     | 37217 | 0 | 38966 | 3     | RW | Word |   | 1...250      | s      |
| V8                       | V8-FH0 | Frame heater set                                        | 37218 | 0 | 38966 | 12    | RW | Word | Y | -58.0...302  | °C/°F  |
| V8                       | V8-FH1 | Frame heater offset                                     | 37219 | 0 | 38966 | 48    | RW | Word |   | 0.0...25.0   | °C/°F  |
| V8                       | V8-FH2 | Frame heater band                                       | 37220 | 0 | 38966 | 192   | RW | Word | Y | -58.0...302  | °C/°F  |
| V8                       | V8-FH3 | Frame heater minimum percentage/duty-cycle              | 37221 | 0 | 38966 | 768   | RW | Word |   | 0...100      | %      |

| Application 8 parameters |        |                                                  |       |   |       |       |    |      |   |                |         |
|--------------------------|--------|--------------------------------------------------|-------|---|-------|-------|----|------|---|----------------|---------|
| V8                       | V8-FH4 | Frame heater maximum percentage/day duty-cycle   | 37222 | 0 | 38966 | 3072  | RW | Word |   | 0...100        | %       |
| V8                       | V8-FH5 | Frame heater maximum percentage/night duty-cycle | 37223 | 0 | 38966 | 12288 | RW | Word |   | 0...100        | %       |
| V8                       | V8-FH6 | Frame heater percentage/duty-cycle in defrost    | 37224 | 0 | 38966 | 49152 | RW | Word |   | 0...100        | %       |
| V8                       | V8-LOC | Disable terminal                                 | 37227 | 0 | 38967 | 3     | RW | Word |   | 0...1          | flag    |
| V8                       | V8-PS1 | Password 1 value                                 | 37228 | 0 | 38967 | 12    | RW | Word |   | 0...250        | num     |
| V8                       | V8-PS2 | Password 2 value                                 | 37229 | 0 | 38967 | 48    | RW | Word |   | 0...250        | num     |
| V8                       | V8-ndt | Display with decimal point                       | 37230 | 0 | 38967 | 192   | RW | Word |   | 0...1          | flag    |
| V8                       | V8-CA1 | Analog input 1 calibration                       | 37036 | 0 | 38967 | 768   | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V8                       | V8-CA2 | Analog input 2 calibration                       | 37037 | 0 | 38967 | 3072  | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V8                       | V8-CA3 | Analog input 3 calibration                       | 37038 | 0 | 38967 | 12288 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V8                       | V8-CA4 | Analog input 4 calibration                       | 37039 | 0 | 38967 | 49152 | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V8                       | V8-CA5 | Analog input 5 calibration                       | 37040 | 0 | 38968 | 3     | RW | Word | Y | -30.0...30.0   | °C/°F   |
| V8                       | V8-CA6 | Analog input 6 calibration                       | 37041 | 0 | 38968 | 12    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V8                       | V8-CA7 | Analog input 7 calibration                       | 37042 | 0 | 38968 | 48    | RW | Word | Y | -30.0...30.0   | bar/psi |
| V8                       | V8-LdL | Minimum display value                            | 37231 | 0 | 38968 | 192   | RW | Word | Y | -58.0...V8-HdL | °C/°F   |
| V8                       | V8-HdL | Maximum display value                            | 37232 | 0 | 38968 | 768   | RW | Word | Y | V8-LdL...302   | °C/°F   |
| V8                       | V8-ddL | Display lock mode during a defrost               | 37233 | 0 | 38968 | 3072  | RW | Word |   | 0...2          | num     |
| V8                       | V8-Ldd | Display lock timeout from end of defrost         | 37234 | 0 | 38968 | 12288 | RW | Word |   | 0...250        | min     |
| V8                       | V8-dro | Select °C / °F                                   | 37235 | 0 | 38968 | 49152 | RW | Word |   | 0...1          | flag    |
| V8                       | V8-SbP | Pressure unit of measure                         | 37236 | 0 | 38969 | 3     | RW | Word |   | 0...1          | flag    |
| V8                       | V8-ddd | Select main display value                        | 37237 | 0 | 38969 | 12    | RW | Word |   | 0...8          | num     |
| V8                       | V8-ddE | Resource displayed on ECHO                       | 37238 | 0 | 38969 | 48    | RW | Word |   | 0...11         | num     |
| V8                       | V8-rPH | Receiver maximum valve opening %                 | 37189 | 0 | 38969 | 192   | RW | Word |   | 0...5          | num     |
| V8                       | V8-H00 | Select analog input type NTC/PTC                 | 37004 | 0 | 38969 | 768   | RW | Word |   | 0...2          | num     |
| V8                       | V8-H02 | Function activation time from terminal           | 37239 | 0 | 38969 | 3072  | RW | Word |   | 0...250        | s       |
| V8                       | V8-H08 | Stand-by operating mode                          | 37241 | 0 | 38969 | 12288 | RW | Word |   | 0...2          | num     |
| V8                       | V8-H11 | Digital input 1 configurability and polarity     | 37007 | 0 | 38969 | 49152 | RW | Word | Y | -19...19       | num     |
| V8                       | V8-H12 | Digital input 2 configurability and polarity     | 37008 | 0 | 38970 | 3     | RW | Word | Y | -19...19       | num     |
| V8                       | V8-H13 | Digital input 3 configurability and polarity     | 37009 | 0 | 38970 | 12    | RW | Word | Y | -19...19       | num     |

| Application 8 parameters |        |                                               |       |   |       |       |    |      |   |          |      |
|--------------------------|--------|-----------------------------------------------|-------|---|-------|-------|----|------|---|----------|------|
| V8                       | V8-H14 | Digital input 4 configurability and polarity  | 37010 | 0 | 38970 | 48    | RW | Word | Y | -19...19 | num  |
| V8                       | V8-H15 | Digital input 5 configurability and polarity  | 37011 | 0 | 38970 | 192   | RW | Word | Y | -19...19 | num  |
| V8                       | V8-H16 | Digital input 6 configurability and polarity  | 37012 | 0 | 38970 | 768   | RW | Word | Y | -19...19 | num  |
| V8                       | V8-H17 | Digital input 7 configurability and polarity  | 37013 | 0 | 38970 | 3072  | RW | Word | Y | -19...19 | num  |
| V8                       | V8-H18 | Digital input 8 configurability and polarity  | 37014 | 0 | 38970 | 12288 | RW | Word | Y | -19...19 | num  |
| V8                       | V8-i01 | Digital input 9 configurability and polarity  | 37274 | 0 | 38981 | 192   | RW | Word | Y | -19...19 | num  |
| V8                       | V8-i02 | Digital input 10 configurability and polarity | 37275 | 0 | 38981 | 768   | RW | Word | Y | -19...19 | num  |
| V8                       | V8-dti | Digital inputs 1 and 2 delay unit of measure  | 37023 | 0 | 38970 | 49152 | RW | Word |   | 0...1    | flag |
| V8                       | V8-d11 | D.I. 1 activation indication delay time       | 37015 | 0 | 38971 | 3     | RW | Word |   | 0...255  | min  |
| V8                       | V8-d12 | D.I. 2 activation indication delay time       | 37016 | 0 | 38971 | 12    | RW | Word |   | 0...255  | min  |
| V8                       | V8-d13 | D.I. 3 activation indication delay time       | 37017 | 0 | 38971 | 48    | RW | Word |   | 0...255  | min  |
| V8                       | V8-d14 | D.I. 4 activation indication delay time       | 37018 | 0 | 38971 | 192   | RW | Word |   | 0...255  | min  |
| V8                       | V8-d15 | D.I. 5 activation indication delay time       | 37019 | 0 | 38971 | 768   | RW | Word |   | 0...255  | min  |
| V8                       | V8-d16 | D.I. 6 activation indication delay time       | 37020 | 0 | 38971 | 3072  | RW | Word |   | 0...255  | min  |
| V8                       | V8-d17 | D.I. 7 activation indication delay time       | 37021 | 0 | 38971 | 12288 | RW | Word |   | 0...255  | min  |
| V8                       | V8-d18 | D.I. 8 activation indication delay time       | 37022 | 0 | 38971 | 49152 | RW | Word |   | 0...255  | min  |
| V8                       | V8-01i | D.I. 9 activation indication delay time       | 37276 | 0 | 38981 | 3072  | RW | Word |   | 0...255  | min  |
| V8                       | V8-02i | D.I. 10 activation indication delay time      | 37277 | 0 | 38981 | 12288 | RW | Word |   | 0...255  | min  |
| V8                       | V8-H21 | Configurability of digital output 1           | 37044 | 0 | 38972 | 3     | RW | Word |   | 0...19   | num  |
| V8                       | V8-H22 | Configurability of digital output 2           | 37045 | 0 | 38972 | 12    | RW | Word |   | 0...19   | num  |
| V8                       | V8-H23 | Configurability of digital output 3           | 37046 | 0 | 38972 | 48    | RW | Word |   | 0...19   | num  |
| V8                       | V8-H24 | Configurability of digital output 4           | 37047 | 0 | 38972 | 192   | RW | Word |   | 0...19   | num  |
| V8                       | V8-H25 | Configurability of digital output 5           | 37048 | 0 | 38972 | 768   | RW | Word |   | 0...19   | num  |
| V8                       | V8-H27 | Configurability of digital output 7           | 37050 | 0 | 38972 | 12288 | RW | Word |   | 0...19   | num  |
| V8                       | V8-H29 | Enable buzzer                                 | 37051 | 0 | 38972 | 49152 | RW | Word |   | 0...1    | num  |
| V8                       | V8-d01 | Configurability of digital output 8           | 37267 | 0 | 38980 | 768   | RW | Word |   | 0...19   | num  |
| V8                       | V8-d02 | Configurability of digital output 9           | 37268 | 0 | 38980 | 3072  | RW | Word |   | 0...19   | num  |
| V8                       | V8-H31 | Configurability of the UP key                 | 37242 | 0 | 38973 | 3     | RW | Word |   | 0...9    | num  |

| Application 8 parameters |        |                                                                             |       |   |       |       |    |      |  |           |      |
|--------------------------|--------|-----------------------------------------------------------------------------|-------|---|-------|-------|----|------|--|-----------|------|
| V8                       | V8-H32 | Configurability of the DOWN key                                             | 37243 | 0 | 38973 | 12    | RW | Word |  | 0...9     | num  |
| V8                       | V8-H33 | Configurability of the ESC key                                              | 37244 | 0 | 38973 | 48    | RW | Word |  | 0...9     | num  |
| V8                       | V8-H34 | Configurability of the Free 1 key                                           | 37245 | 0 | 38973 | 192   | RW | Word |  | 0...9     | num  |
| V8                       | V8-H35 | Configurability of the Free 2 key                                           | 37246 | 0 | 38973 | 768   | RW | Word |  | 0...9     | num  |
| V8                       | V8-H36 | Configurability of the Free 3 key                                           | 37247 | 0 | 38973 | 3072  | RW | Word |  | 0...9     | num  |
| V8                       | V8-H37 | Configurability of the Free 4 key                                           | 37248 | 0 | 38973 | 12288 | RW | Word |  | 0...9     | num  |
| V8                       | V8-H41 | Configurability of analog input 1                                           | 37024 | 0 | 38973 | 49152 | RW | Word |  | 0...2     | num  |
| V8                       | V8-H42 | Configurability of analog input 2                                           | 37025 | 0 | 38974 | 3     | RW | Word |  | 0...2     | num  |
| V8                       | V8-H43 | Configurability of analog input 3                                           | 37026 | 0 | 38974 | 12    | RW | Word |  | 0...2     | num  |
| V8                       | V8-H44 | Configurability of analog input 4                                           | 37027 | 0 | 38974 | 48    | RW | Word |  | 0...2     | num  |
| V8                       | V8-H45 | Configurability of analog input 5                                           | 37028 | 0 | 38974 | 192   | RW | Word |  | 0...2     | num  |
| V8                       | V8-H46 | Configurability of analog input 6                                           | 37029 | 0 | 38974 | 768   | RW | Word |  | 0...2     | num  |
| V8                       | V8-H47 | Configurability of analog input 7                                           | 37030 | 0 | 38974 | 3072  | RW | Word |  | 0...2     | num  |
| V8                       | V8-H48 | Configurability of analog input 8                                           | 37278 | 0 | 38981 | 49152 | RW | Word |  | 0...2     | num  |
| V8                       | V8-H50 | Configurability of analog output 1                                          | 37052 | 0 | 38974 | 12288 | RW | Word |  | 0...1     | num  |
| V8                       | V8-H51 | Function associated with analog output                                      | 37053 | 0 | 38974 | 49152 | RW | Word |  | 0...3     | num  |
| V8                       | V8-H68 | RTC present                                                                 | 37054 | 0 | 38975 | 3     | RW | Word |  | 0...1     | num  |
| V8                       | V8-H70 | Selection of 1st sensor for virtual probe                                   | 37032 | 0 | 38975 | 12    | RW | Word |  | 0...5     | num  |
| V8                       | V8-H71 | Selection of 2nd sensor for virtual probe                                   | 37033 | 0 | 38975 | 48    | RW | Word |  | 0...5     | num  |
| V8                       | V8-H72 | Day virtual probe calculation %                                             | 37034 | 0 | 38975 | 192   | RW | Word |  | 0...100   | %    |
| V8                       | V8-H73 | Night virtual probe calculation %                                           | 37035 | 0 | 38975 | 768   | RW | Word |  | 0...100   | %    |
| V8                       | V8-H74 | Selection of 1st sensor for filtered virtual probe                          | 37264 | 0 | 38979 | 49152 | RW | Word |  | 0...65635 | num  |
| V8                       | V8-H75 | Percentage in thousandths of the incoming signal for filtered virtual probe | 37265 | 0 | 38980 | 3     | RW | Word |  | 0...65635 | num  |
| V8                       | V8-H76 | Filtered virtual probe offset                                               | 37266 | 0 | 38980 | 12    | RW | Word |  | 0...65635 | num  |
| V8                       | V8-EtY | Selection of electronic expansion valve driver                              | 37249 | 0 | 38975 | 3072  | RW | Word |  | 0...1     | flag |
| V8                       | UL     | Visibility of parameter transfer function (Device -> UNICARD/MFK)           | -     | - | 38978 | 3     | RW | Word |  | 0...3     | num  |
| V8                       | dL     | Visibility of parameter transfer function (UNICARD/MFK -> Device)           | -     | - | 38978 | 12    | RW | Word |  | 0...3     | num  |
| V8                       | Fr     | Visibility of UNICARD/MFK formatting function                               | -     | - | 38978 | 48    | RW | Word |  | 0...3     | num  |

| Application 8 parameters |        |                                                   |       |   |       |       |    |      |   |                 |       |
|--------------------------|--------|---------------------------------------------------|-------|---|-------|-------|----|------|---|-----------------|-------|
| V8                       | V8-OHP | Selection of oil temperature probe                | 37256 | 0 | 38978 | 12288 | RW | Word |   | 0...8           | num   |
| V8                       | V8-OSP | Oil heater setpoint                               | 37257 | 0 | 38978 | 49152 | RW | Word | Y | V8-OLS...V8-OHS | °C/°F |
| V8                       | V8-OHd | Oil heater differential                           | 37258 | 0 | 38979 | 3     | RW | Word |   | 0.1...25.0      | °C/°F |
| V8                       | V8-OHS | Maximum oil heater setpoint value that can be set | 37260 | 0 | 38979 | 48    | RW | Word | Y | V8-OLS...302    | °C/°F |
| V8                       | V8-OLS | Minimum oil heater setpoint value that can be set | 37261 | 0 | 38979 | 192   | RW | Word | Y | -58.0...V8-OHS  | °C/°F |

## Folder Visibility Table

| Label                                               | Address | Filter | Description                                                  | Data size | Range | MU  |
|-----------------------------------------------------|---------|--------|--------------------------------------------------------------|-----------|-------|-----|
| <b>Visibility of folders for loaded application</b> |         |        |                                                              |           |       |     |
| <b>CP</b>                                           | 38175   | 12288  | Visibility of folder <b>CP</b> (compressor)                  | Word      | 0...3 | num |
| <b>dEF</b>                                          | 38175   | 49152  | Visibility of folder <b>dEF</b> (defrost)                    | Word      | 0...3 | num |
| <b>FAn</b>                                          | 38176   | 3      | Visibility of folder <b>FAn</b> (fans)                       | Word      | 0...3 | num |
| <b>FE</b>                                           | 38179   | 12     | Visibility of folder <b>FE</b> (modulated fans)              | Word      | 0...3 | num |
| <b>AL</b>                                           | 38176   | 12     | Visibility of folder <b>AL</b> (alarms)                      | Word      | 0...3 | num |
| <b>Lit</b>                                          | 38176   | 48     | Visibility of folder <b>Lit</b> (lights and digital inputs)  | Word      | 0...3 | num |
| <b>Lin</b>                                          | 38176   | 192    | Visibility of folder <b>Lin</b> (link <sup>2</sup> )         | Word      | 0...3 | num |
| <b>dEC</b>                                          | 38176   | 12288  | Visibility of folder <b>dEC</b> (deep Cooling Cycle)         | Word      | 0...3 | num |
| <b>EnS</b>                                          | 38176   | 49152  | Visibility of folder <b>EnS</b> (energy saving)              | Word      | 0...3 | num |
| <b>FrH</b>                                          | 38177   | 3      | Visibility of folder <b>FrH</b> (frame heaters)              | Word      | 0...3 | num |
| <b>Add</b>                                          | 38177   | 12     | Visibility of folder <b>Add</b> (communication)              | Word      | 0...3 | num |
| <b>diS</b>                                          | 38177   | 48     | Visibility of folder <b>diS</b> (display)                    | Word      | 0...3 | num |
| <b>HCP</b>                                          | 38177   | 192    | Visibility of folder <b>HCP</b> (HACCP)                      | Word      | 0...3 | num |
| <b>CnF</b>                                          | 38177   | 768    | Visibility of folder <b>CnF</b> (configuration)              | Word      | 0...3 | num |
| <b>EE0</b>                                          | 38177   | 3072   | Visibility of folder <b>EE0</b> (Electronic Expansion Valve) | Word      | 0...3 | num |
| <b>FPr</b>                                          | 38177   | 12288  | Visibility of folder <b>FPr</b> (CopyCard)                   | Word      | 0...3 | num |
| <b>FnC</b>                                          | 38177   | 49152  | Visibility of folder <b>FnC</b> (functions)                  | Word      | 0...3 | num |
| <b>Oil</b>                                          | 38179   | 768    | Visibility of folder <b>Oil</b> (Compressor oil heater)      | Word      | 0...3 | num |
| <b>Visibility of folders for AP1 application</b>    |         |        |                                                              |           |       |     |
| <b>V1-CP</b>                                        | 38303   | 12288  | Visibility of folder <b>CP</b> (compressor)                  | Word      | 0...3 | num |
| <b>V1-dEF</b>                                       | 38303   | 49152  | Visibility of folder <b>dEF</b> (defrost)                    | Word      | 0...3 | num |
| <b>V1-FAn</b>                                       | 38304   | 3      | Visibility of folder <b>FAn</b> (fans)                       | Word      | 0...3 | num |
| <b>V1-FE</b>                                        | 38307   | 12     | Visibility of folder <b>FE</b> (modulated fans)              | Word      | 0...3 | num |
| <b>V1-AL</b>                                        | 38304   | 12     | Visibility of folder <b>AL</b> (alarms)                      | Word      | 0...3 | num |
| <b>V1-Lit</b>                                       | 38304   | 48     | Visibility of folder <b>Lit</b> (lights and digital inputs)  | Word      | 0...3 | num |
| <b>V1-Lin</b>                                       | 38304   | 192    | Visibility of folder <b>Lin</b> (link <sup>2</sup> )         | Word      | 0...3 | num |
| <b>V1-dEC</b>                                       | 38304   | 12288  | Visibility of folder <b>dEC</b> (Deep Cooling Cycle)         | Word      | 0...3 | num |
| <b>V1-EnS</b>                                       | 38304   | 49152  | Visibility of folder <b>EnS</b> (energy saving)              | Word      | 0...3 | num |
| <b>V1-FrH</b>                                       | 38305   | 3      | Visibility of folder <b>FrH</b> (frame heaters)              | Word      | 0...3 | num |
| <b>V1-Add</b>                                       | 38305   | 12     | Visibility of folder <b>Add</b> (communication)              | Word      | 0...3 | num |
| <b>V1-diS</b>                                       | 38305   | 48     | Visibility of folder <b>diS</b> (display)                    | Word      | 0...3 | num |
| <b>V1-HCP</b>                                       | 38305   | 192    | Visibility of folder <b>HCP</b> (HACCP)                      | Word      | 0...3 | num |
| <b>V1-CnF</b>                                       | 38305   | 768    | Visibility of folder <b>CnF</b> (configuration)              | Word      | 0...3 | num |
| <b>V1-EE0</b>                                       | 38305   | 3072   | Visibility of folder <b>EE0</b> (Electronic Expansion Valve) | Word      | 0...3 | num |
| <b>V1-FPr</b>                                       | 38305   | 12288  | Visibility of folder <b>FPr</b> (CopyCard)                   | Word      | 0...3 | num |
| <b>V1-FnC</b>                                       | 38305   | 49152  | Visibility of folder <b>FnC</b> (functions)                  | Word      | 0...3 | num |
| <b>V1-Oil</b>                                       | 38307   | 768    | Visibility of folder <b>Oil</b> (Compressor oil heater)      | Word      | 0...3 | num |
| <b>Visibility of folders for AP2 application</b>    |         |        |                                                              |           |       |     |
| <b>V2-CP</b>                                        | 38399   | 12288  | Visibility of folder <b>CP</b> (compressor)                  | Word      | 0...3 | num |
| <b>V2-dEF</b>                                       | 38399   | 49152  | Visibility of folder <b>dEF</b> (defrost)                    | Word      | 0...3 | num |
| <b>V2-FAn</b>                                       | 38400   | 3      | Visibility of folder <b>FAn</b> (fans)                       | Word      | 0...3 | num |
| <b>V2-FE</b>                                        | 38403   | 12     | Visibility of folder <b>FE</b> (modulated fans)              | Word      | 0...3 | num |
| <b>V2-AL</b>                                        | 38400   | 12     | Visibility of folder <b>AL</b> (alarms)                      | Word      | 0...3 | num |
| <b>V2-Lit</b>                                       | 38400   | 48     | Visibility of folder <b>Lit</b> (lights and digital inputs)  | Word      | 0...3 | num |
| <b>V2-Lin</b>                                       | 38400   | 192    | Visibility of folder <b>Lin</b> (link <sup>2</sup> )         | Word      | 0...3 | num |
| <b>V2-dEC</b>                                       | 38400   | 12288  | Visibility of folder <b>dEC</b> (Deep Cooling Cycle)         | Word      | 0...3 | num |
| <b>V2-EnS</b>                                       | 38400   | 49152  | Visibility of folder <b>EnS</b> (energy saving)              | Word      | 0...3 | num |
| <b>V2-FrH</b>                                       | 38401   | 3      | Visibility of folder <b>FrH</b> (frame heaters)              | Word      | 0...3 | num |

| Label                                            | Address | Filter | Description                                                  | Data size | Range | MU  |
|--------------------------------------------------|---------|--------|--------------------------------------------------------------|-----------|-------|-----|
| <b>V2-Add</b>                                    | 38401   | 12     | Visibility of folder <b>Add</b> (communication)              | Word      | 0...3 | num |
| <b>V2-diS</b>                                    | 38401   | 48     | Visibility of folder <b>diS</b> (display)                    | Word      | 0...3 | num |
| <b>V2-HCP</b>                                    | 38401   | 192    | Visibility of folder <b>HCP</b> (HACCP)                      | Word      | 0...3 | num |
| <b>V2-CnF</b>                                    | 38401   | 768    | Visibility of folder <b>CnF</b> (configuration)              | Word      | 0...3 | num |
| <b>V2-EE0</b>                                    | 38401   | 3072   | Visibility of folder <b>EE0</b> (Electronic Expansion Valve) | Word      | 0...3 | num |
| <b>V2-FPr</b>                                    | 38401   | 12288  | Visibility of folder <b>FPr</b> (CopyCard)                   | Word      | 0...3 | num |
| <b>V2-FnC</b>                                    | 38401   | 49152  | Visibility of folder <b>FnC</b> (functions)                  | Word      | 0...3 | num |
| <b>V2-OiL</b>                                    | 38403   | 768    | Visibility of folder <b>OiL</b> (Compressor oil heater)      | Word      | 0...3 | num |
| <b>Visibility of folders for AP3 application</b> |         |        |                                                              |           |       |     |
| <b>V3-CP</b>                                     | 38495   | 12288  | Visibility of folder <b>CP</b> (compressor)                  | Word      | 0...3 | num |
| <b>V3-dEF</b>                                    | 38495   | 49152  | Visibility of folder <b>dEF</b> (defrost)                    | Word      | 0...3 | num |
| <b>V3-FAn</b>                                    | 38496   | 3      | Visibility of folder <b>FAn</b> (fans)                       | Word      | 0...3 | num |
| <b>V3-FE</b>                                     | 38499   | 12     | Visibility of folder <b>FE</b> (modulated fans)              | Word      | 0...3 | num |
| <b>V3-AL</b>                                     | 38496   | 12     | Visibility of folder <b>AL</b> (alarms)                      | Word      | 0...3 | num |
| <b>V3-Lit</b>                                    | 38496   | 48     | Visibility of folder <b>Lit</b> (lights and digital inputs)  | Word      | 0...3 | num |
| <b>V3-Lin</b>                                    | 38496   | 192    | Visibility of folder <b>Lin</b> (link <sup>2</sup> )         | Word      | 0...3 | num |
| <b>V3-dEC</b>                                    | 38496   | 12288  | Visibility of folder <b>dEC</b> (Deep Cooling Cycle)         | Word      | 0...3 | num |
| <b>V3-EnS</b>                                    | 38496   | 49152  | Visibility of folder <b>EnS</b> (energy saving)              | Word      | 0...3 | num |
| <b>V3-FrH</b>                                    | 38497   | 3      | Visibility of folder <b>FrH</b> (frame heaters)              | Word      | 0...3 | num |
| <b>V3-Add</b>                                    | 38497   | 12     | Visibility of folder <b>Add</b> (communication)              | Word      | 0...3 | num |
| <b>V3-diS</b>                                    | 38497   | 48     | Visibility of folder <b>diS</b> (display)                    | Word      | 0...3 | num |
| <b>V3-HCP</b>                                    | 38497   | 192    | Visibility of folder <b>HCP</b> (HACCP)                      | Word      | 0...3 | num |
| <b>V3-CnF</b>                                    | 38497   | 768    | Visibility of folder <b>CnF</b> (configuration)              | Word      | 0...3 | num |
| <b>V3-EE0</b>                                    | 38497   | 3072   | Visibility of folder <b>EE0</b> (Electronic Expansion Valve) | Word      | 0...3 | num |
| <b>V3-FPr</b>                                    | 38497   | 12288  | Visibility of folder <b>FPr</b> (CopyCard)                   | Word      | 0...3 | num |
| <b>V3-FnC</b>                                    | 38497   | 49152  | Visibility of folder <b>FnC</b> (functions)                  | Word      | 0...3 | num |
| <b>V3-OiL</b>                                    | 38499   | 768    | Visibility of folder <b>OiL</b> (Compressor oil heater)      | Word      | 0...3 | num |
| <b>Visibility of folders for AP4 application</b> |         |        |                                                              |           |       |     |
| <b>V4-CP</b>                                     | 38591   | 12288  | Visibility of folder <b>CP</b> (compressor)                  | Word      | 0...3 | num |
| <b>V4-dEF</b>                                    | 38591   | 49152  | Visibility of folder <b>dEF</b> (defrost)                    | Word      | 0...3 | num |
| <b>V4-FAn</b>                                    | 38592   | 3      | Visibility of folder <b>FAn</b> (fans)                       | Word      | 0...3 | num |
| <b>V4-FE</b>                                     | 38595   | 12     | Visibility of folder <b>FE</b> (modulated fans)              | Word      | 0...3 | num |
| <b>V4-AL</b>                                     | 38592   | 12     | Visibility of folder <b>AL</b> (alarms)                      | Word      | 0...3 | num |
| <b>V4-Lit</b>                                    | 38592   | 48     | Visibility of folder <b>Lit</b> (lights and digital inputs)  | Word      | 0...3 | num |
| <b>V4-Lin</b>                                    | 38592   | 192    | Visibility of folder <b>Lin</b> (link <sup>2</sup> )         | Word      | 0...3 | num |
| <b>V4-dEC</b>                                    | 38592   | 12288  | Visibility of folder <b>dEC</b> (Deep Cooling Cycle)         | Word      | 0...3 | num |
| <b>V4-EnS</b>                                    | 38592   | 49152  | Visibility of folder <b>EnS</b> (energy saving)              | Word      | 0...3 | num |
| <b>V4-FrH</b>                                    | 38593   | 3      | Visibility of folder <b>FrH</b> (frame heaters)              | Word      | 0...3 | num |
| <b>V4-Add</b>                                    | 38593   | 12     | Visibility of folder <b>Add</b> (communication)              | Word      | 0...3 | num |
| <b>V4-diS</b>                                    | 38593   | 48     | Visibility of folder <b>diS</b> (display)                    | Word      | 0...3 | num |
| <b>V4-HCP</b>                                    | 38593   | 192    | Visibility of folder <b>HCP</b> (HACCP)                      | Word      | 0...3 | num |
| <b>V4-CnF</b>                                    | 38593   | 768    | Visibility of folder <b>CnF</b> (configuration)              | Word      | 0...3 | num |
| <b>V4-EE0</b>                                    | 38593   | 3072   | Visibility of folder <b>EE0</b> (Electronic Expansion Valve) | Word      | 0...3 | num |
| <b>V4-FPr</b>                                    | 38593   | 12288  | Visibility of folder <b>FPr</b> (CopyCard)                   | Word      | 0...3 | num |
| <b>V4-FnC</b>                                    | 38593   | 49152  | Visibility of folder <b>FnC</b> (functions)                  | Word      | 0...3 | num |
| <b>V4-OiL</b>                                    | 38595   | 768    | Visibility of folder <b>OiL</b> (Compressor oil heater)      | Word      | 0...3 | num |
| <b>Visibility of folders for AP5 application</b> |         |        |                                                              |           |       |     |
| <b>V5-CP</b>                                     | 38687   | 12288  | Visibility of folder <b>CP</b> (compressor)                  | Word      | 0...3 | num |
| <b>V5-dEF</b>                                    | 38687   | 49152  | Visibility of folder <b>dEF</b> (defrost)                    | Word      | 0...3 | num |
| <b>V5-FAn</b>                                    | 38688   | 3      | Visibility of folder <b>FAn</b> (fans)                       | Word      | 0...3 | num |
| <b>V5-FE</b>                                     | 38691   | 12     | Visibility of folder <b>FE</b> (modulated fans)              | Word      | 0...3 | num |



| Label                                            | Address | Filter | Description                                                  | Data size | Range | MU  |
|--------------------------------------------------|---------|--------|--------------------------------------------------------------|-----------|-------|-----|
| <b>V5-AL</b>                                     | 38688   | 12     | Visibility of folder <b>AL</b> (alarms)                      | Word      | 0...3 | num |
| <b>V5-Lit</b>                                    | 38688   | 48     | Visibility of folder <b>Lit</b> (lights and digital inputs)  | Word      | 0...3 | num |
| <b>V5-Lin</b>                                    | 38688   | 192    | Visibility of folder <b>Lin</b> (link <sup>2</sup> )         | Word      | 0...3 | num |
| <b>V5-dEC</b>                                    | 38688   | 12288  | Visibility of folder <b>dEC</b> (Deep Cooling Cycle)         | Word      | 0...3 | num |
| <b>V5-EnS</b>                                    | 38688   | 49152  | Visibility of folder <b>EnS</b> (energy saving)              | Word      | 0...3 | num |
| <b>V5-FrH</b>                                    | 38689   | 3      | Visibility of folder <b>FrH</b> (frame heaters)              | Word      | 0...3 | num |
| <b>V5-Add</b>                                    | 38689   | 12     | Visibility of folder <b>Add</b> (communication)              | Word      | 0...3 | num |
| <b>V5-diS</b>                                    | 38689   | 48     | Visibility of folder <b>diS</b> (display)                    | Word      | 0...3 | num |
| <b>V5-HCP</b>                                    | 38689   | 192    | Visibility of folder <b>HCP</b> (HACCP)                      | Word      | 0...3 | num |
| <b>V5-CnF</b>                                    | 38689   | 768    | Visibility of folder <b>CnF</b> (configuration)              | Word      | 0...3 | num |
| <b>V5-EE0</b>                                    | 38689   | 3072   | Visibility of folder <b>EE0</b> (Electronic Expansion Valve) | Word      | 0...3 | num |
| <b>V5-FPr</b>                                    | 38689   | 12288  | Visibility of folder <b>FPr</b> (CopyCard)                   | Word      | 0...3 | num |
| <b>V5-FnC</b>                                    | 38689   | 49152  | Visibility of folder <b>FnC</b> (functions)                  | Word      | 0...3 | num |
| <b>V5-OiL</b>                                    | 38691   | 768    | Visibility of folder <b>OiL</b> (Compressor oil heater)      | Word      | 0...3 | num |
| <b>Visibility of folders for AP6 application</b> |         |        |                                                              |           |       |     |
| <b>V6-CP</b>                                     | 38783   | 12288  | Visibility of folder <b>CP</b> (compressor)                  | Word      | 0...3 | num |
| <b>V6-dEF</b>                                    | 38783   | 49152  | Visibility of folder <b>dEF</b> (defrost)                    | Word      | 0...3 | num |
| <b>V6-FAn</b>                                    | 38784   | 3      | Visibility of folder <b>FAn</b> (fans)                       | Word      | 0...3 | num |
| <b>V6-FE</b>                                     | 38787   | 12     | Visibility of folder <b>FE</b> (modulated fans)              | Word      | 0...3 | num |
| <b>V6-AL</b>                                     | 38784   | 12     | Visibility of folder <b>AL</b> (alarms)                      | Word      | 0...3 | num |
| <b>V6-Lit</b>                                    | 38784   | 48     | Visibility of folder <b>Lit</b> (lights and digital inputs)  | Word      | 0...3 | num |
| <b>V6-Lin</b>                                    | 38784   | 192    | Visibility of folder <b>Lin</b> (link <sup>2</sup> )         | Word      | 0...3 | num |
| <b>V6-dEC</b>                                    | 38784   | 12288  | Visibility of folder <b>dEC</b> (Deep Cooling Cycle)         | Word      | 0...3 | num |
| <b>V6-EnS</b>                                    | 38784   | 49152  | Visibility of folder <b>EnS</b> (energy saving)              | Word      | 0...3 | num |
| <b>V6-FrH</b>                                    | 38785   | 3      | Visibility of folder <b>FrH</b> (frame heaters)              | Word      | 0...3 | num |
| <b>V6-Add</b>                                    | 38785   | 12     | Visibility of folder <b>Add</b> (communication)              | Word      | 0...3 | num |
| <b>V6-diS</b>                                    | 38785   | 48     | Visibility of folder <b>diS</b> (display)                    | Word      | 0...3 | num |
| <b>V6-HCP</b>                                    | 38785   | 192    | Visibility of folder <b>HCP</b> (HACCP)                      | Word      | 0...3 | num |
| <b>V6-CnF</b>                                    | 38785   | 768    | Visibility of folder <b>CnF</b> (configuration)              | Word      | 0...3 | num |
| <b>V6-EE0</b>                                    | 38785   | 3072   | Visibility of folder <b>EE0</b> (Electronic Expansion Valve) | Word      | 0...3 | num |
| <b>V6-FPr</b>                                    | 38785   | 12288  | Visibility of folder <b>FPr</b> (CopyCard)                   | Word      | 0...3 | num |
| <b>V6-FnC</b>                                    | 38785   | 49152  | Visibility of folder <b>FnC</b> (functions)                  | Word      | 0...3 | num |
| <b>V6-OiL</b>                                    | 38787   | 768    | Visibility of folder <b>OiL</b> (Compressor oil heater)      | Word      | 0...3 | num |
| <b>Visibility of folders for AP7 application</b> |         |        |                                                              |           |       |     |
| <b>V7-CP</b>                                     | 38879   | 12288  | Visibility of folder <b>CP</b> (compressor)                  | Word      | 0...3 | num |
| <b>V7-dEF</b>                                    | 38879   | 49152  | Visibility of folder <b>dEF</b> (defrost)                    | Word      | 0...3 | num |
| <b>V7-FAn</b>                                    | 38880   | 3      | Visibility of folder <b>FAn</b> (fans)                       | Word      | 0...3 | num |
| <b>V7-FE</b>                                     | 38883   | 12     | Visibility of folder <b>FE</b> (modulated fans)              | Word      | 0...3 | num |
| <b>V7-AL</b>                                     | 38880   | 12     | Visibility of folder <b>AL</b> (alarms)                      | Word      | 0...3 | num |
| <b>V7-Lit</b>                                    | 38880   | 48     | Visibility of folder <b>Lit</b> (lights and digital inputs)  | Word      | 0...3 | num |
| <b>V7-Lin</b>                                    | 38880   | 192    | Visibility of folder <b>Lin</b> (link <sup>2</sup> )         | Word      | 0...3 | num |
| <b>V7-dEC</b>                                    | 38880   | 12288  | Visibility of folder <b>dEC</b> (Deep Cooling Cycle)         | Word      | 0...3 | num |
| <b>V7-EnS</b>                                    | 38880   | 49152  | Visibility of folder <b>EnS</b> (energy saving)              | Word      | 0...3 | num |
| <b>V7-FrH</b>                                    | 38881   | 3      | Visibility of folder <b>FrH</b> (frame heaters)              | Word      | 0...3 | num |
| <b>V7-Add</b>                                    | 38881   | 12     | Visibility of folder <b>Add</b> (communication)              | Word      | 0...3 | num |
| <b>V7-diS</b>                                    | 38881   | 48     | Visibility of folder <b>diS</b> (display)                    | Word      | 0...3 | num |
| <b>V7-HCP</b>                                    | 38881   | 192    | Visibility of folder <b>HCP</b> (HACCP)                      | Word      | 0...3 | num |
| <b>V7-CnF</b>                                    | 38881   | 768    | Visibility of folder <b>CnF</b> (configuration)              | Word      | 0...3 | num |
| <b>V7-EE0</b>                                    | 38881   | 3072   | Visibility of folder <b>EE0</b> (Electronic Expansion Valve) | Word      | 0...3 | num |
| <b>V7-FPr</b>                                    | 38881   | 12288  | Visibility of folder <b>FPr</b> (CopyCard)                   | Word      | 0...3 | num |
| <b>V7-FnC</b>                                    | 38881   | 49152  | Visibility of folder <b>FnC</b> (functions)                  | Word      | 0...3 | num |

| Label                                            | Address | Filter | Description                                                  | Data size | Range | MU  |
|--------------------------------------------------|---------|--------|--------------------------------------------------------------|-----------|-------|-----|
| <b>V7-OiL</b>                                    | 38883   | 768    | Visibility of folder <b>OiL</b> (Compressor oil heater)      | Word      | 0...3 | num |
| <b>Visibility of folders for AP8 application</b> |         |        |                                                              |           |       |     |
| <b>V8-CP</b>                                     | 38975   | 12288  | Visibility of folder <b>CP</b> (compressor)                  | Word      | 0...3 | num |
| <b>V8-dEF</b>                                    | 38975   | 49152  | Visibility of folder <b>dEF</b> (defrost)                    | Word      | 0...3 | num |
| <b>V8-FAn</b>                                    | 38976   | 3      | Visibility of folder <b>FAn</b> (fans)                       | Word      | 0...3 | num |
| <b>V8-FE</b>                                     | 38979   | 12     | Visibility of folder <b>FE</b> (modulated fans)              | Word      | 0...3 | num |
| <b>V8-AL</b>                                     | 38976   | 12     | Visibility of folder <b>AL</b> (alarms)                      | Word      | 0...3 | num |
| <b>V8-Lit</b>                                    | 38976   | 48     | Visibility of folder <b>Lit</b> (lights and digital inputs)  | Word      | 0...3 | num |
| <b>V8-Lin</b>                                    | 38976   | 192    | Visibility of folder <b>Lin</b> (link <sup>2</sup> )         | Word      | 0...3 | num |
| <b>V8-dEC</b>                                    | 38976   | 12288  | Visibility of folder <b>dEC</b> (Deep Cooling Cycle)         | Word      | 0...3 | num |
| <b>V8-EnS</b>                                    | 38976   | 49152  | Visibility of folder <b>EnS</b> (energy saving)              | Word      | 0...3 | num |
| <b>V8-FrH</b>                                    | 38977   | 3      | Visibility of folder <b>FrH</b> (frame heaters)              | Word      | 0...3 | num |
| <b>V8-Add</b>                                    | 38977   | 12     | Visibility of folder <b>Add</b> (communication)              | Word      | 0...3 | num |
| <b>V8-diS</b>                                    | 38977   | 48     | Visibility of folder <b>diS</b> (display)                    | Word      | 0...3 | num |
| <b>V8-HCP</b>                                    | 38977   | 192    | Visibility of folder <b>HCP</b> (HACCP)                      | Word      | 0...3 | num |
| <b>V8-CnF</b>                                    | 38977   | 768    | Visibility of folder <b>CnF</b> (configuration)              | Word      | 0...3 | num |
| <b>V8-EE0</b>                                    | 38977   | 3072   | Visibility of folder <b>EE0</b> (Electronic Expansion Valve) | Word      | 0...3 | num |
| <b>V8-FPr</b>                                    | 38977   | 12288  | Visibility of folder <b>FPr</b> (CopyCard)                   | Word      | 0...3 | num |
| <b>V8-FnC</b>                                    | 38977   | 49152  | Visibility of folder <b>FnC</b> (functions)                  | Word      | 0...3 | num |
| <b>V8-OiL</b>                                    | 38979   | 768    | Visibility of folder <b>OiL</b> (Compressor oil heater)      | Word      | 0...3 | num |

## Table of Modbus Resources

| Label             | Description                   | Address | Filter | Type | Data Size | CPL | Range       | MU                       |
|-------------------|-------------------------------|---------|--------|------|-----------|-----|-------------|--------------------------|
| <b>A1</b>         | Regulation probe 1            | 6145    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A2</b>         | Regulation probe 2            | 6146    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A2_PbC</b>     | Regulation probe 2            | 6146    | 0      | R    | Word      | Y   | -67.0...320 | see parameter <b>08U</b> |
| <b>A3</b>         | Temperature alarm probe 1     | 6147    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A4</b>         | Temperature alarm probe 2     | 6148    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A5</b>         | Defrost probe 1               | 6149    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A6</b>         | Defrost probe 2               | 6150    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A7</b>         | Evaporator fan probe          | 6151    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A8</b>         | Frame heater probe            | 6152    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A8_PbC</b>     | Frame heater probe            | 6152    | 0      | R    | Word      | Y   | -67.0...320 | see parameter <b>08U</b> |
| <b>A9</b>         | Valve 1 evaporator pressure   | 6153    | 0      | R    | Word      | Y   | -67.0...320 | bar/psi                  |
| <b>A9-abs_bar</b> | Valve 1 evaporator pressure   | 6153    | 0      | R    | Word      | Y   | -67.0...320 | bar                      |
| <b>A9-abs_psi</b> | Valve 1 evaporator pressure   | 6153    | 0      | R    | Word      | Y   | -67.0...320 | psi                      |
| <b>SAT_T</b>      | Saturation temperature        | 6174    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A10</b>        | Valve 1 superheat temperature | 6154    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A11</b>        | HACCP probe                   | 6155    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>SP1</b>        | Regulation setpoint 1 value   | 6156    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>SP2</b>        | Regulation setpoint 2 value   | 6157    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>OH1</b>        | Valve 1 superheat             | 6158    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>BKP_bar</b>    | Backup saturation probe 1     | 6180    | 0      | R    | Word      | Y   | -6.7...32.0 | bar                      |
| <b>BKP_psi</b>    | Backup saturation probe 1     | 6180    | 0      | R    | Word      | Y   | -67...320   | psi                      |
| <b>rDP</b>        | Remote dew point value 1      | 6173    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>dis</b>        | Analog input (viewing) 1      | 6159    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>vr1</b>        | Virtual probe 1               | 6160    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>vr2</b>        | Virtual probe 2               | 6161    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>EEV</b>        | Valve 1 opening percentage    | 6177    | 0      | R    | Word      | N   | 0...100     | %                        |
| <b>FrH</b>        | Frame heater output           | 6176    | 0      | R    | Word      | N   | 0...100     | %                        |
| <b>FE1</b>        | Modulated fan probe           | 6189    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>FE1_mA</b>     | Modulated fan probe           | 6189    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>FE1_PbC</b>    | Modulated fan probe           | 6189    | 0      | R    | Word      | Y   | -67.0...320 | see parameter <b>08U</b> |
| <b>FAn</b>        | Analog fan output 1           | 6188    | 0      | R    | Word      | N   | 0...100     | %                        |
| <b>OIL</b>        | Temperature probe oil         | 6169    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>A12</b>        | Gas concentration level       | 6170    | 0      | R    | Word      | N   | 0...100     | %                        |
| <b>A12_PbC</b>    | Gas concentration level       | 6195    | 0      | R    | Word      | N   | 0...100     | see parameter <b>08U</b> |
| <b>A12_PbC</b>    | Gas concentration level       | 6195    | 0      | R    | Word      | N   | 0...1000    | see parameter <b>08U</b> |
| <b>A12_PbC</b>    | Gas concentration level       | 6195    | 0      | R    | Word      | N   | 0...10000   | see parameter <b>08U</b> |
| <b>OLt</b>        | Superheat lower threshold     | 6172    | 0      | R    | Word      | Y   | -67.0...320 | °C/°F                    |
| <b>E1</b>         | Probe Pb1 error               | 6162    | 1      | R    | Word      | N   | 0...1       | flag                     |
| <b>E2</b>         | Probe Pb2 error               | 6162    | 2      | R    | Word      | N   | 0...1       | flag                     |

| Label  | Description                                           | Address | Filter | Type | Data Size | CPL | Range   | MU   |
|--------|-------------------------------------------------------|---------|--------|------|-----------|-----|---------|------|
| E3     | Probe Pb3 error                                       | 6162    | 4      | R    | Word      | N   | 0...1   | flag |
| E4     | Probe Pb4 error                                       | 6162    | 8      | R    | Word      | N   | 0...1   | flag |
| E5     | Probe Pb5 error                                       | 6162    | 16     | R    | Word      | N   | 0...1   | flag |
| E6     | Probe Pb6 error                                       | 6162    | 32     | R    | Word      | N   | 0...1   | flag |
| E7     | Probe Pb7 error                                       | 6162    | 64     | R    | Word      | N   | 0...1   | flag |
| AL1    | Regulator 1 low alarm                                 | 6162    | 8192   | R    | Word      | N   | 0...1   | flag |
| AH1    | Regulator 1 high alarm                                | 6162    | 16384  | R    | Word      | N   | 0...1   | flag |
| AL2    | Regulator 2 low alarm                                 | 6162    | 32768  | R    | Word      | N   | 0...1   | flag |
| AH2    | Regulator 2 high alarm                                | 6163    | 1      | R    | Word      | N   | 0...1   | flag |
| OPd    | Door open alarm                                       | 6163    | 2      | R    | Word      | N   | 0...1   | flag |
| EA     | External alarm                                        | 6163    | 4      | R    | Word      | N   | 0...1   | flag |
| Prr    | Preheat input regulator                               | 6163    | 8      | R    | Word      | N   | 0...1   | flag |
| Ad2    | Defrost end due to timeout                            | 6163    | 16     | R    | Word      | N   | 0...1   | flag |
| E10    | RTC battery low alarm                                 | 6163    | 256    | R    | Word      | N   | 0...1   | flag |
| AtS    | Regular watchdog 1 alarm                              | 6162    | 512    | R    | Word      | N   | 0...1   | flag |
| HOt    | Valve 1 MOP alarm                                     | 6163    | 512    | R    | Word      | N   | 0...1   | flag |
| tHA    | Max valve 1 output alarm                              | 6163    | 1024   | R    | Word      | N   | 0...1   | flag |
| LoP    | Minimum voltage threshold exceeded                    | 6163    | 2048   | R    | Word      | N   | 0...1   | flag |
| HiP    | Maximum voltage threshold exceeded                    | 6163    | 4096   | R    | Word      | N   | 0...1   | flag |
| ELi    | Alarm Link device lost                                | 6163    | 16384  | R    | Word      | N   | 0...1   | flag |
| E08    | Probe Pb8 error                                       | 6164    | 16     | R    | Word      | N   | 0...1   | flag |
| LEL    | Level 1 refrigerant alarm                             | 6164    | 32     | R    | Word      | N   | 0...1   | flag |
| LEH    | Level 2 refrigerant alarm                             | 6164    | 64     | R    | Word      | N   | 0...1   | flag |
| PAn    | Men in the room alarm                                 | 6164    | 128    | R    | Word      | N   | 0...1   | flag |
| OFF    | Stand-by                                              | 6167    | 1      | R    | Word      | N   | 0...1   | flag |
| C1     | Compressor 1                                          | 6167    | 2      | R    | Word      | N   | 0...1   | flag |
| C2     | Compressor 2                                          | 6167    | 4      | R    | Word      | N   | 0...1   | flag |
| RegAUX | Auxiliary regulator status                            | 6167    | 8      | R    | Word      | N   | 0...1   | flag |
| Def1   | Defrost 1                                             | 6167    | 16     | R    | Word      | N   | 0...1   | flag |
| Def2   | Defrost 2                                             | 6167    | 32     | R    | Word      | N   | 0...1   | flag |
| FEv    | Evaporator fans                                       | 6167    | 64     | R    | Word      | N   | 0...1   | flag |
| FCo    | Condenser fans                                        | 6167    | 128    | R    | Word      | N   | 0...1   | flag |
| ALM    | Alarm                                                 | 6167    | 256    | R    | Word      | N   | 0...1   | flag |
| AUX    | Auxiliary relay control output                        | 6167    | 512    | R    | Word      | N   | 0...1   | flag |
| Lig    | Light                                                 | 6167    | 1024   | R    | Word      | N   | 0...1   | flag |
| DP     | Deep Cooling                                          | 6167    | 2048   | R    | Word      | N   | 0...1   | flag |
| FH     | Anti-sweater heaters                                  | 6167    | 4096   | R    | Word      | N   | 0...1   | flag |
| SeR    | Reduced set                                           | 6167    | 8192   | R    | Word      | N   | 0...1   | flag |
| ES     | Energy saving                                         | 6167    | 16384  | R    | Word      | N   | 0...1   | flag |
| do     | Door status                                           | 6167    | 32768  | R    | Word      | N   | 0...1   | flag |
| dyS    | Dynamic setpoint active                               | 6168    | 1      | R    | Word      | N   | 0...1   | flag |
| gDI    | Digital input status for monitoring via supervision 1 | 6168    | 2      | R    | Word      | N   | 0...1   | flag |
| FCool  | Forced cooling mode                                   | 6168    | 32     | R    | Word      | N   | 0...1   | flag |
| LAN    | Number of devices recognized in LAN                   | 6169    | 0      | R    | Word      | N   | 0...255 | num  |
| nAU    | Activates auxiliary output                            | 2561    | 0      | W    | Word      | N   | 0...1   | flag |
| oAU    | Deactivates auxiliary output                          | 2562    | 0      | W    | Word      | N   | 0...1   | flag |
| nSB    | Device on                                             | 2563    | 0      | W    | Word      | N   | 0...1   | flag |
| oSB    | Device off                                            | 2564    | 0      | W    | Word      | N   | 0...1   | flag |

| Label        | Description                             | Address | Filter | Type | Data Size | CPL | Range | MU   |
|--------------|-----------------------------------------|---------|--------|------|-----------|-----|-------|------|
| <b>nES</b>   | Activates energy saving function        | 2565    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>oNS</b>   | Deactivates energy saving function      | 2566    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>nSR</b>   | Activates economy mode                  | 2567    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>oSR</b>   | Deactivates economy mode                | 2568    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>nLI</b>   | Switches lights on                      | 2569    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>oLI</b>   | Switches lights off                     | 2570    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>nBT</b>   | Locks terminal                          | 2571    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>oBT</b>   | Unlocks terminal                        | 2572    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>nDM</b>   | Manual Defrost activation               | 2573    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>oPV</b>   | Valve 1 opening control                 | 2574    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>nPV</b>   | Valve 1 closing control                 | 2575    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>nOS</b>   | Additional setpoint offset activation   | 2576    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>oOS</b>   | Additional setpoint offset deactivation | 2577    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>dEC</b>   | Deep Cooling regulator activation       | 2578    | 0      | W    | Word      | N   | 0...1 | flag |
| <b>CikUp</b> | Updates clock                           | 2579    | 0      | W    | Word      | N   | 0...1 | flag |

**Eliwell Controls srl**

Via dell'Industria, 15 Z.I. Paludi  
32016 Alpago (BL) Italia  
Telephone +39 (0) 437 986 111  
**[www.elowell.com](http://www.elowell.com)**

**Customer Technical Support**

Telephone +39 (0) 437 986 300  
E [techsuppeliwell@se.com](mailto:techsuppeliwell@se.com)

**Sales**

Telephone +39 (0) 437 986 100 (Italy)  
Telephone +39 (0) 437 986 200 (other countries)  
E [saleseliwell@se.com](mailto:saleseliwell@se.com)