HANSEN

VALVES • CONTROLLERS • SENSORS

PXV

PULSE WIDTH EXPANSION

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PULSE WIDTH EXPANSION VALVES

Hansen Technologies introduces the Pulse Width Expansion Valve (PXV). The PXV and PXVW are pulse width modulating liquid refrigerant expansion valves with a specially designed high cycle, long-life solenoid operator. Unlike traditional thermal expansion valves (TXVs), the pulse design eliminates the need to maintain minimum pressure differential. Low and varying liquid feed pressures (head pressure) are compensated by the basic variable valve operation. Valves are suitable for use with all Hansen approved refrigerants. The PXV/PXVW Valves and PXVC Controller are ideally suited for use with Hansen's Vari-Level probes, Techni-Level™ VLT probes and HPT Pressure/Temperature Transducer sensors.

- **PXV Pulse Width Expansion Valves** are self adjusting with no minimum pressure supply required.
- Unique **PXVW/MVP13-1PXV** features an integral 100 mesh (150 micron) strainer screen and direct weld assembly — eliminating flange gasket leak potential.
- **PXVW** function is now available in **MVP13-1PXV**.
- Compact **PXVC Controllers** are pre-programmed for liquid level, DX superheat control, temperature and pressure.
- Valves available for ammonia capacities up to 60 tons and other refrigerants with adjustable capacity settings.
- Operates valves with 115V, 220V or 24VAC solenoid coils.

PXV

PXVW

MULTIPLE SOLUTIONS TO FIT YOUR APPLICA

PRINCIPLES OF OPERATION

Through the use of pulse width modulation, the valve is cycled on and off to achieve the desired flow. During a cycle, the valve can be open anywhere from 0 to 6 seconds. The more “on” time required, the greater the flow through the valve. The correct amount of “on” time for DX applications can be determined by monitoring superheat with a Hansen HPT Pressure/Temperature Transducer or individual temperature sensors and pressure transducers. If actual superheat is greater than desired, the pulse width signal is increased to provide more valve “on” time. If actual superheat is less than desired, pulse width signal is decreased to reduce valve “on” time. The same principal applies for level control where a 4-20mA signal from a VLT level sensor controls the level in a vessel.

APPLICATIONS

Pulse Width Expansion Valves modulate the flow of liquid feed to an evaporator or chiller, and can be used wherever a thermal expansion valve would be used. PXV valves are also ideal for liquid make-up to small surge vessels above flooded heat exchangers to minimize fluctuations in liquid level and pressures, and for liquid injection for compressor cooling.

CAPACITY

Valves are available for ammonia capacities up to 60 tons with adjustable capacity settings. The PXV models for ammonia are 5 and 15 ton (nominal). The PXVW and MVP13-1PXV models for ammonia have an adjustable orifice from 5 to 60 tons (nominal). Suitable for use with other approved refrigerants.

KEY FEATURES – PXV/PXVW

- **Self-adjusting, with no minimum pressure supply required**
- **Adjustable capacity settings for ammonia up to 60 tons**
- **Interchangeable, drop-in replacement for Sporlan D series thermostatic valves**

KEY FEATURES – PXVC

- **Compact, low cost solution controller**
- **Digital display with 4-20mA input signal**
- **Versatility to control superheat/ subcooling, temperature, liquid level and pressure**

PXVC

MVP13 – 1PXV

ORDERING INFORMATION: PULSE WIDTH SOLUTIONS

VALVES

	MODEL	CAPACITY TONS OF AMMONIA	APPLICATION	FLANGE STYLES AND SIZES CONNECTION AVAILABLE			
				FPT, SW, WN		ODS	
				STD	ALSO	STD	ALSO
	PXV5	5 (18 kW)	All	½" FPT	½" SW	–	–
	PXV15	15 (53 kW)		½" FPT	½" SW	–	–
	PXVW60	15 to 60 (53 to 212 kW) Adjustable	All	½" SW	½" SW ½", ¾", 1" BW	1⅛" ODS	⅝", ⅞" ODS
	MVP13-1PXV	5 to 60 (18 to 212 kW) Adjustable	All	½" SW	½" SW ½", ¾", 1" BW	1⅛" ODS	⅝", ⅞" ODS

CONTROLLERS

	MODEL	DESCRIPTION	APPLICATION	VOLTAGE
	PXVC-PT	DX Controller for PXV, PXVW, (*R717, R22, R134a and R507*), (*includes TS2 Temperature Sensor*) (*Transducer not included, use PT2*)	Superheat/Subcooling	24V AC/DC
	PXVC-DX	DX Controller for PXV, PXVW (*HPT not included*), (*Ammonia & Other Refrigerants*)		
	PXVC-T	Temperature Controller for PXV, PXVW (*includes TS1 Temperature Sensor*)	Temperature	
	PXVC-L	Level Controller for PXV, PXVW (*Level Sensor not included*)	Level	
	PXVC-P	Pressure Controller for PXV, PXVW (*Transducer not included*), use PT3	Pressure	
	PXVC-CI	Control Interface Module for PXV, PXVW (*4-20mA input, pulse width output*)	All	

SENSORS

	MODEL	DESCRIPTION	APPLICATION	FLANGE STYLES AND SIZES CONNECTION AVAILABLE
	HPT717	Pressure/Temperature Transducer, NH3	Superheat/Subcooling	¾" NPT
	HPT	Pressure/Temperature Transducer, R507, R22, R134a, R290 or R744		¾" NPT
	PT2	Pressure/Temperature Transducer, (15"-85 psig)	Pressure	¼" NPT
	PT3	Pressure/Temperature Transducer, (15"-285 psig)		
	TS1	Temperature Sensor for PXVC-T NTC 10K, 6.5' wire leads (40ºF to 284ºF)	Temperature	2" L x ¼" OD
	TS2	Temperature Sensor for PXVC-PT PT-1000 (-70ºF to 284ºF)		Strap-On
	IMW	Immersion Well, SS, 3" insertion		½" NPT

POWER ACCESSORIES

MODEL	DESCRIPTION	APPLICATION	FOR USE WITH
PSU	DC Power Supply Unit (100-240 VAC:24V DC)	All	PXVC-PT, -DX, -L, -P
TR40	AC Transformer 115/230 VAC;24VAC (40 VA)		PXVC-T, -CI
TR92	AC Transformer 115/230VAC:24VAC (92 VA)		PXVC and 24VAC Valve Coils

To order, call 866.4HANSEN. For more information, visit us online at www.hantech.com.

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