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3-ways motorized ball valves



The products, shown in this leaflet, are designed for installation on commercial refrigerating systems and on civil and industrial conditioning plants.

The 3-ways valves series 6690M, 6690EM, 6697EM and 6698EM operate as a changeover valve, with the inlet in central position and the two outlets in side positions. These valves must be coupled directly to the electrical actuators supplied in the same package of the valve, without the need to use a flanged adapter between the two parts.

After coupling it is possible a remote control on valve moving or a manual control, excluding the actuator.

All the electrical actuators can be equipped with auxiliary switch units, separately sold.

As above mentioned the 3-ways motorized ball valves are the following ones:

- Series 6690M with PS = 45 bar, copper connections equipped, for systems with traditional fluids: R134a, R22, R404A , R407C, R410A, R507. For specific applications with other fluids, please contact Castel Technical Department.
- Series 6690EM with PS = 80 bar, copper connections equipped, for CO₂ trans-critical systems, low pressure side and medium pressure side.
- Series 6697EM with PS = 120 bar, reinforced copper connections (K65) equipped, for CO₂ trans-critical systems, high pressure side.
- Series 6698EM with PS = 140 bar, stainless steel connections equipped, for CO₂ trans-critical systems, high pressure side.



	Part number (1)	Connections ODS		Torque [Nm]	Running time [sec]	Voltage [V]	Frequency [Hz]	Power [W]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C]	
		Ø [in.]	Ø [mm]									min.	max.
SERIES 6690M HFC / HFO	6690M/7A2 (2)	7/8"	22	10	60	24	50/60	4,8	19	10,7	45	-40	+150
	6690M/7A6 (3)					230		2,9					
	6690M/M28A2 (2)	-	28	10	60	24	50/60	4,8	24	15,9			
	6690M/M28A6 (3)					230		2,9					
	6690M/9A2 (2)	1.1/8"	-	10	60	24	50/60	4,8	24	15,9			
	6690M/9A6 (3)					230		2,9					
	6690M/11A2 (2)	1.3/8"	35	30	120	24	50/60	2,4	28	20,3			
	6690M/11A6 (3)					230		3,7					
	6690M/13A2 (2)	1.5/8"	-	30	120	24	50/60	2,4	37	38,5			
	6690M/13A6 (3)					230		3,7					
	6690M/M42A2 (2)	-	42	30	120	24	50/60	2,4	37	38,5			
	6690M/M42A6 (3)					230		3,7					
SERIES 6690EM Transcritical CO ₂ L.P. / M.P	6690EM/7A2 (2)	7/8"	22	10	60	24	50/60	4,8	19	10,7	80	-40	+150
	6690EM/7A6 (3)					230		2,9					
	6690EM/M28A2 (2)	-	28	10	60	24	50/60	4,8	24	15,9			
	6690EM/M28A6 (3)					230		2,9					
	6690EM/9A2 (2)	1.1/8"	-	10	60	24	50/60	4,8	24	15,9			
	6690EM/9A6 (3)					230		2,9					
	6690EM/11A2 (2)	1.3/8"	35	30	120	24	50/60	2,4	28	20,3			
	6690EM/11A6 (3)					230		3,7					
	6690EM/13A2 (2)	1.5/8"	-	30	120	24	50/60	2,4	37	38,5			
	6690EM/13A6 (3)					230		3,7					
	6690EM/M42A2 (2)	-	42	30	120	24	50/60	2,4	37	38,5			
	6690EM/M42A6 (3)					230		3,7					
SERIES 6697EM Transcritical CO ₂ H.P.	6697EM/7A2 (2)	7/8"	22	10	60	24	50/60	4,8	19	10,7	120	-40	+150
	6697EM/7A6 (3)					230		2,9					
	6697EM/9A2 (2)	1.1/8"	-	10	60	24	50/60	4,8	24	15,9			
	6697EM/9A6 (3)					230		2,9					
	6697EM/11A2 (2)	1.3/8"	35	30	120	24	50/60	2,4	28	20,3			
	6697EM/11A6 (3)					230		3,7					
	6697EM/13A2 (2)	1.5/8"	-	30	120	24	50/60	2,4	37	38,5			
	6697EM/13A6 (3)					230		3,7					

SERIES 6698EM Transcritical CO ₂ H.P.	Part number (1)	Connections W	Torque [Nm]	Running time [sec]	Voltage [V]	Frequency [Hz]	Power [W]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C]							
		Ø [mm]									min.	max.						
	6698EM/M22A2 (2)	22	10	60	24	50/60	4,8	19	10,7	140	-40	+150						
	6698EM/M22A6 (3)				230		2,9											
	6698EM/M28A2 (2)	28	10	60	24	50/60	4,8	24	15,9				140	-40	+150			
	6698EM/M28A6 (3)				230		2,9											
	6698EM/M35A2 (2)	33,4	30	120	24	50/60	2,4	28	20,3	140	-40	+150						
	6698EM/M35A6 (3)				230		3,7											
	6698EM/M42A2 (2)	42,2	30	120	24	50/60	2,4	37	38,5							140	-40	+150
	6698EM/M42A6 (3)				230		3,7											

(1): with actuator and mounting plate

Note (2)

- Degree of protection = IP 54
- Rotation angle = 90°
- Wiring connections : switching output 2 points (open/close) or continuous output (0 ÷ 10V)

Note (3)

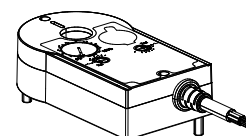
- Degree of protection = IP 54
- Rotation angle = 90°
- Wiring connections : switching output 2 points (open/close)



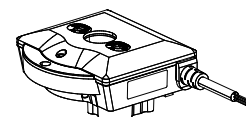
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Auxiliary switch units characteristics

Part number	Designed for actuator	Contact type	Max loading	Ambient temperature [°C]		Degree of protection
				min	Max	
9750/X01	9700/RA2	Double	5	-20	+55	IP 54
9750/X02	9700/RA6 ; 9720/RA2 ; 9720/RA6	Double	5	-20	+55	IP 54



9750/X01



9750/X02

Castel has always been aware of environmental sustainability issues and gives its contribution to a cleaner environment, supplying the refrigeration and air conditioning industry with state-of-the-art and environment-friendly technology. With its commitment and steady research in its laboratories, Castel has developed a whole range of products using natural refrigerants, which reduce emissions to the minimum.



ISO 14001

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