

XM678D and XM679K

Compatibility with Low GWP Refrigerants and Stepper Valve Configuration Parameters

Updated Controllers with the New Feature

- XM678D Version 2.6 to 2.8
- XM679K Version 3.4 to 4.2



Gas Table

This table shows the updated gases compatible with the XM678D and XM679K, selectable by parameter **Fty**:

Table 1: XM678D and XM679K Compatible Gases

This table contains the refrigerant gases compatible with the XM678D and XM679K controllers and their operating temperatures			
LABEL	REFRIGERANT	OPERATING RANGE	NOTE
R22	r22	-58 to 120°F/-50 to 60°C	
134	r134A	-58 to 120°F/-50 to 60°C	
404	r404A	-94 to 120°F/-70 to 60°C	
47A	r407A	-58 to 120°F/-50 to 60°C	
410	r410	-58 to 120°F/-50 to 60°C	
507	r507	-94 to 120°F/-70 to 60°C	
47C	r407C	-58 to 120°F/-50 to 60°C	NEW
47F	r407F	-58 to 120°F/-50 to 60°C	NEW
290	r290 - Propane	-58 to 120°F/-50 to 60°C	NEW
CO ₂	r744 - Co2	-58 to 120°F/-50 to 60°C	
450	r450A	-69 to 120°F/-45 to 60°C	NEW
513	r513	-69 to 120°F/-45 to 60°C	NEW
448	r448A	-69 to 120°F/-45 to 60°C	NEW
449	r449A	-69 to 120°F/-45 to 60°C	NEW

Table 2: XM678D Stepper Valves and Default Values

This table contains the default values related to stepper valves for the XM678D								
		Type of Stepper Motor	Half/Full Step - Kind of Motor Movement	Minimum Number of Steps	Maximum Number of Steps	Current per Phase	Holding Current per Phase	Step Rate
tEP	VALVE MODEL	tEU (bip/unip)	HFS (Half/full)	LSt (steps x10)	USt (steps x10)	CPP (mA x10)	CHd (mA x10)	Sr (step/sec)
0	MANUAL SETTINGS	Par	Par	Par	Par	Par	Par	Par
1	Danfoss ETS-25/50	bP	FUL	7	262	10	10	300
2	Danfoss ETS-100	bP	FUL	10	353	10	10	300
3	Danfoss ETS-250/400	bP	FUL	11	381	10	10	300
4	*Sporlan SEI 0.5-11	bP	FUL	0	159	12	0	200
5	*Sporlan SER 1.5-20	bP	FUL	0	159	12	0	200
6	*Sporlan SEI 30	bP	FUL	0	319	16	0	200
0	*Sporlan SER(I) G,J,K	See Table 3 below for the recommended Sporlan valve manual settings						
8	*Sporlan SEI 50	bP	FUL	0	638	12	0	200
9	*Sporlan SEH(I) 100	bP	FUL	0	638	12	0	200
0	*Sporlan SEH(I) 175	See Table 3 below for the recommended Sporlan valve manual settings						
11	Copeland EX4-EX5-EX6	bP	FUL	5	75	50	10	500
12	Copeland EX3	uP	HAF	2	33	0	0	50

***Note that Sporlan has issued new valve setting recommendations for the following valves. Refer to Sporlan Bulletin F100-10-4 June 5, 2017 for more information. Sporlan recommends manually entering these settings (Table 3 below) if you have these valve models.**

Table 3: Recommended Sporlan Valve Manual Settings

tEP	SPORLAN MODEL	Minimum Number of Steps	Maximum Number of Steps	Current per Phase	Holding Current per Phase	Step Rate	Extra Steps During Closing Phase	Kind of Motor Movement
		LSt (steps x10)	USt (steps x10)	CPP (mA x10)	CHd (mA x10)	Sr (steps/sec)	Est (steps x10)	HFS
0	SER-AA, A, B, C, D	0	250	7	0	200	12	FUL
0	SERI-F, G, J, K, L CDS(T)-2, 4, 7	0	250	8	0	200	12	FUL
0	SEH(I)-175, P, 400, T CDS(T)-9, 17	0	638	8	0	200	32	FUL

Operating Pressure Expansion for CO₂ Applications

Considering the growing number of CO₂ systems, the pressure range has been extended; controllers can now use up to 60bar probes.

Availability and Orders

All XM678D and XM679K controllers will be provided with the new gas list. Please contact the Copeland at 770-425-2724 for further information.

For Technical Support:

- 770-425-2724
- ColdChain.TechnicalServices@copeland.com

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Visit our website at copeland.com/en-us/products/controls-monitoring-systems for the latest technical documentation and updates.

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