

LIST OF SPECIFICATIONS

MODEL AND VALVE FUNCTIONS

Item	In-line and manifold type	Basic model		
		H181E1 H180E1	H180-4E1 H180-4E2	H183-4E2
	Manifold or subbase type only	HA181E1 HA180E1	HA180-4E1 HA180-4E2	HA183-4E2
Number of positions		2 position		3 position
Number of ports		2- and 3-way		4-way
Valve function		Normally closed (N/C standard) and normally open (N/O option)	Single and double solenoid	Double solenoid

NOTE: H180E1 and HA180E1 cannot be used as in-line valves.

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	Manifold or subbase type only	HA181E1 HA180E1	HA180-4E1 HA180-4E2	HA183-4E2
Media		Air		
Type of operation		Indirect acting		
Flow - C _v		.57		.50
Ports		1/8" NPT		
Lubrication		None required		
Pressure range psig (kgf/cm ²)		20 ~ 100 (1.5 ~ 7)		
Response time - ms (ON/OFF)	12VDC, 24VDC	below 15/20	below 15/25	below 15/35
	120VAC, 240VAC, 24VAC	below 15/15	below 15/15	below 15/20
Maximum operation frequency - c/s		5		
Minimum time to energize (ms)		50 (E2 only)		-
Temperature range (atmosphere or media) - °F (°C)		40 ~ 122 (5 ~ 50)		
Impact resistance - G		140 (axial direction 30)		30
Mounting direction		Any		

SOLENOID SPECIFICATIONS

Voltage		12VDC	24VDC	24VAC	120VAC	240VAC			
Model		Surge protector - flywheel diode		Shading system					
Voltage Range		10.8 ~ 13.2	21.6 ~ 26.4	21.6 ~ 26.4		90 ~ 132		180 ~ 264	
Current value (Rated voltage applied)	Frequency Hz	-	-	50	60	50	60	50	60
	Starting power - mA	-	-	145	130	44	40	22	20
	Holding power - mA ^{NOTE 1}	130 (140)	65 (75)	85	70	32	26	16	13
Power consumption ^{NOTE 1}		1.6 (1.7)	1.6 (1.8)	-	-	-	-	-	-
Leak rate (maximum allowed) - mA		8	4	8		4		2	
Temperature rise (at rated voltage) - °F (°C)		below 77° (25°)				Less than 95° (35°)			
Insulation		Type B				Type B			
Insulation tolerance - MΩ		Over 100				Over 100			
Lead wire: length	Standard	Grommet 12" (300mm)				Grommet 12" (300mm)			
	Options	Plug connector				Plug connector			
Lead wire: color		Brown/Black	Red/Black	Black	Yellow	White			
LED indicator (option) color		Red				Yellow	White		
Surge suppression		Flywheel diode				Yellow	Green		

NOTE 1: Number in () Indicates solenoid with LED indicator.