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Electric Expansion Valves

Bulletin 100-20-1, January 2011



ENGINEERING YOUR SUCCESS.

This supplement to Bulletin 100-20 (September 2008) details the updated Sporlan series of Electric Expansion Valves. Built on a foundation of more than 75 years of refrigerant flow control designs, and over 20 years of experience in electronic superheat control, these valves are a perfect fit for today's demanding applications.

From the unique uni-body construction and quad-position cable found on the SER-B through SER-D, to the multiple body configurations and built-in sight glass on the SERI-G through SERI-L, these valves are designed for flexibility, reliability, and ease of use.

Equipped with advanced pin designs and Digital Linear Actuators, Sporlan Electric Expansion Valves have minimal energy requirements, without sacrificing performance. And with nine valves that cover a capacity range of 400 Tons, valve selection and SKU reduction are simplified.

Available Connections

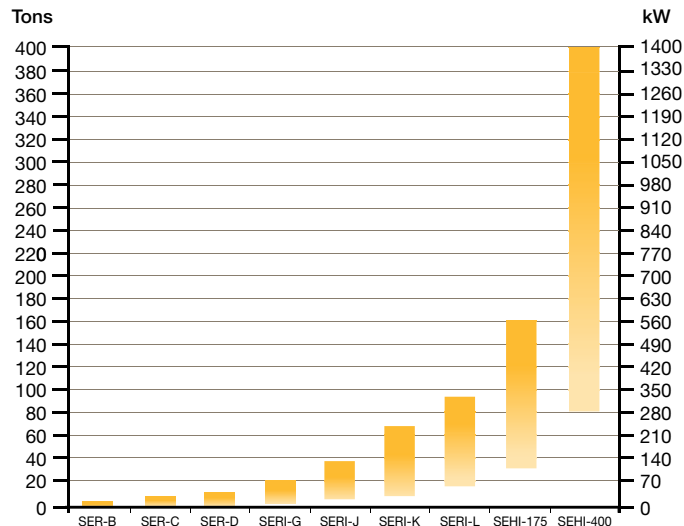
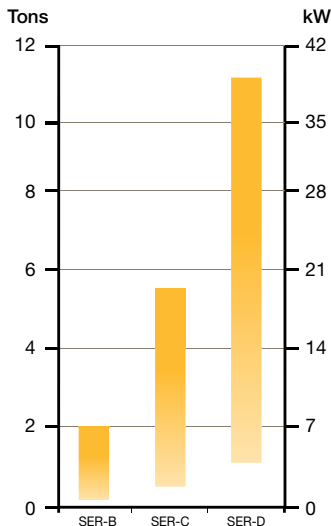
Valve Type	INLET - Inches (ODF)	OUTLET - Inches (ODF)	Configuration	Cable Length		Cable Ends
				Feet	Meters	
SER-B*	1/4, 3/8	3/8, 1/2, 5/8	Angle	10, 20	3, 6	S - Stripped and Tinned
SER-C*	1/4, 3/8	3/8, 1/2, 5/8	Angle			
SER-D*	3/8, 1/2, 5/8	1/2, 5/8, 7/8, 1-1/8	Straight Through Offset			
SERI-G*	5/8, 7/8	1/2, 5/8, 7/8, 1-1/8	Angle or Straight Through Offset	10, 40	3, 12	
SERI-J*	7/8, 1-1/8	7/8, 1-1/8, 1-3/8				
SERI-K†	1-1/8	7/8, 1-1/8, 1-3/8, 1-5/8				
SERI-L†	1-1/8, 1-3/8	1-1/8, 1-3/8, 1-5/8	Straight Through Offset	10, 20, 30, 40	3, 6, 9, 12	
SEHI-175	1-1/8, 1-3/8, 1-5/8	2-1/8				
SEHI-400	1-5/8, 2-1/8, 2-5/8	1-5/8, 2-1/8, 2-5/8, 3-1/8 (ODM)	Angle			

*Suitable for bi-directional applications.
 † Bi-sealing, reduced flow in reverse direction.

Specifications



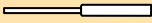



Valve	SER-B, -C, -D	SERI-G, -J, -K, -L	SEHI-175	SEHI-400
Motor Type	2 phase, bipolar wet motor			
Compatible Refrigerant	All common CFC, HCFC and HFC refrigerants, including R-410A and subcritical R-744			All common CFC, HCFC and HFC refrigerants
Compatible Oils	All common Mineral, Polyolester and Alkybenzene oils			
Supply Voltage	12 VDC -5% +10% measured at the valve leads			
Cable Type	IP67 Removable Quad-Position	Removable	Hermetic	Hermetic
Phase Resistance	100 ohms ± 10%	100 ohms ± 10%	75 ohms ± 10%	75 ohms ± 10%
Current Range	120 ma / winding	120 ma / winding	160 ma / winding	160 ma / winding
Power Input	2.8 watts	2.8 watts	3.8 watts	3.8 watts
Recommended Step Rate	200 / second	200 / second	200 / second	200 / second
Number of Steps	2500	2500	6386	6386
Full Motor Transit Time	12.5 seconds	12.5 seconds	34 seconds	34 seconds
Resolution	.000092" (.0023 mm) / step	.00012" (.003 mm) / step	.00008" (.002 mm) / step	.00008" (.002 mm) / step
Stroke	0.23" (5.8 mm)	.297" (7.5 mm)	.500" (12.7 mm)	.500" (12.7 mm)
MOPD	580 psid (40 bar)	500 psid (34 bar)	500 psid (34 bar)	300 psid (21 bar)
MRP	700 psig (48 bar)	700 psig (48 bar)	620 psig (43 bar)	500 psig (34 bar)
Max Internal Leakage	100 cc/min @ 100 psig (6.9 bar), dry air			
Max External Leakage	.10 oz/yr @ 300 psig (2.8 gram/yr @ 20 bar)			
Operating Temp Range	-50°F to 155°F (-45°C to 68°C)			
Materials of Construction	Brass, copper, synthetic seals, stainless steel			

Capacity



R-407C at 100°F (38°C) liquid, 100 psi (7 bar) pressure drop, and 40°F (5°C) evaporator temperature.

Components and Accessories:

Product	Description	Item Number
Kelvin II 	Superheat Controller without Local Display	952560
	Superheat Controller with Display	952561
	Remote Display Only	952562
IB2Q IB6Q 	Interface Board (2500 steps)	983189
	Interface Board (6386 steps)	952960
Temperature Sensor 	External Sensing Bulb	952662
Temperature Well Sensor Kit 	Internal Sensing Element	952795
Pressure Transducer 	150 psig with Cable	953091
	150 psia with Cable	952995
	300 psig with Cable (R-410A applications only)	952740
	500 psig with Cable (R-744 subcritical applications only)	952504
SMA-12 	Test Instrument	953276

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