



Features And Benefits

For Use On Refrigeration and Air Conditioning Systems Only

- Step motor operated for precise control
- High resolution drive assembly
- Solenoid tight seating
- Corrosion resistant materials used throughout
- Field proven reliability
- Low power consumption (less than 4 watts)
- Unique built-in sight glass - indicates valve operation, moisture levels and refrigerant quality (SERI&SEHI only)
- Compatible with HCFC and HFC refrigerants and oils, in addition to subcritical CO₂.
- Self-lubricating materials used for long life
- High linear force output

The **SER, SERI and SEHI** are Electronically Operated Step Motor flow control valves, intended for the precise control of liquid refrigerant flow. Synchronized signals to the motor provide discrete angular movement, which translate into precise linear positioning of the valve piston. Valve pistons and ports are uniquely characterized, providing extraordinary flow resolution and performance. The SER, SERI and SEHI valves are easily interfaced with microprocessor-based controllers, including Sporlan supplied controllers.

The Valves

Sporlan Electric Expansion Valves (EEVs), now rated at full stroke (100% open) with no reserve capacity, are currently available in nominal R-22 capacities from 2.5 to 434 tons (8.2 to 1424 kW), and can control refrigerant flow down to 10% of rated capacity. Therefore, they are applicable on all the same types of systems found in the air conditioning and refrigeration industries as thermostatic expansion valves. Sporlan electric valves are designed for compatibility with all current halocarbon refrigerants (HCFCs and HFCs including R-410A), in addition to subcritical CO₂. System conditions will dictate which product is necessary to control the application. Specific details can be reviewed with your GVN Sales Engineer.

Ordering Instructions / Nomenclature

Sporlan valves are available in angle and/or straight through offset configurations (reference the Available Connections table for additional details). The SERI and SEHI valves feature a built-in sightglass (not available on the small SER family of valves). The sightglass indicates the moisture level of the refrigerant, flash gas present upstream of the valve, and provides a visual confirmation of valve piston movement. This unique feature is useful for system refrigerant charging, service and diagnostics.

Özellikler Ve Avantajları

Sadece Soğutma Ve İklimlendirme Sistemlerinde Kullanılır

- Hassas kontrol için step motorla çalıştırılır
- Yüksek hassasiyetli sürücü aksamı
- Sıkı solenoid yuvası
- Kullanım süresince korozyona dayanıklı malzemeler
- Sahada kanıtlanmış güvenilirlik
- Düşük enerji tüketimi (4 watt'tan az)
- Gözetleme camı - valf çalışmasını, nem seviyelerini ve soğutucu kalitesini gösterir (yalnızca SERI&SEHI)
- HCFC ve HFC ilave olarak Sub-kritikal CO₂ soğutucu gazları ve yağları ile uyumludur.
- Uzun ömür için kullanılan kendinden yağlamalı malzemeler
- Yüksek doğruşal kuvvet çıkışı

SER, SERI ve SEHI elektronik kontrollü olarak çalışan adım (step) motorlu akış kontrol valfleri likit soğutkanın akışının hassas kontrolü için tasarlanmıştır. Motora gönderilene eş zamanlı sinyaller dönme momenti ile pistonun doğrusal olarak hassas bir şekilde konumlandırılmasını sağlar. Benzersiz tasarımı valf pistonları ve yatakları olağanüstü akış kararlılığı ve performans sağlar. SER, SERI ve SEHI serisi valfler Sporlan elektronik kontrolör ve diğer mikroşemciler ile kolayca kontrol edilebilir.

Valfler

Sporlan Elektrik Genleşme Valfleri (EGV) Piston tamamen geride olacak şekilde arka boşluk olmadan (%100 açık) R22 soğutucu akışkan için 2.5-434 Ton (8.2-1424kW) ön görülen kapasiteleri mevcuttur ve kapasitenin %10'na kadar kontrol edilebilir. Bu nedenle, iklimlendirme ve soğutma endüstrisindeki benzer tüm sistemlerde termostatik genleşme valfi olarak kullanılabilir. Sporlan elektrikli valfler Sub-kritikal CO₂ ve R410A dahil HCFC ve HFC güncel soğutkanlar için uygun olarak tasarlanmıştır. Sistem koşullarına göre hangi ürünün seçileceği belirlenir. Detaylı bilgi için GVN satış mühendisleri ile temasa geçiniz. .

Sipariş Talimatları / İsimlendirme

Sporlan fonksiyonel gövde tasarımı sayesinde dik ve düz kullanıma uygundur (fazla bilgi için uygun bağlantı listesine bakınız). SERI ve SEHI valfler üzerinde gözetleme camı mevcuttur (küçük SER serisinde mevcut değildir). Bu gözetleme camı soğutucu akışkanın nem seviyesini gösterir. Valf içindeki gaz akışındaki köpürme gözlemlenir, valf pistonundaki hareketin izlenmesini sağlar. Bu benzersiz özellik soğutma gaz şarjı, servis ve sistem kontrolünde kolaylık sağlar.

SER-B, -C, -D

SER	-	C	3/8"	1/2"	ODF	-	10"	-	S
Valve Family		Valve Model	Inlet Fitting Size	Outlet Fitting Size	Fitting Type		Cable Length		Stripped and Tinned Cable Ends (Custom Connectors Available)

SERI-G, -J, -K, -L

SERI	-	J	S	7/8"	X	1 1/8"	ODF	X	40'	-	S
Valve Family		Valve Model	Straight Through Offset Configuration (blank if angle)	Inlet Fitting Size		Outlet Fitting Size	Fitting Type		Cable Length		Stripped and Tinned Cable Ends (Custom Connectors Available)

SEHI-175

SERI	-	175	1 5/8"	X	2 1/8"	ODF	-	30'	-	S	AN
Valve Family		Valve Model	Inlet Fitting Size		Outlet Fitting Size	Fitting Type		Cable Length		Stripped and Tinned Cable Ends (Custom Connectors Available)	Angle Configuration (blank if straight through offset)

SEHI-400

SERI	-	400	2 1/8"	X	2 1/8"	ODF	-	20'	-	S	AN
Valve Family		Valve Model	Inlet Fitting Size		Outlet Fitting Size	Fitting Type		Cable Length		Stripped and Tinned Cable Ends (Custom Connectors Available)	AN-Angle Configuration ST-Straight Through Configuration

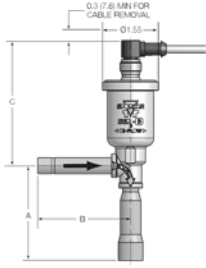


Specifications

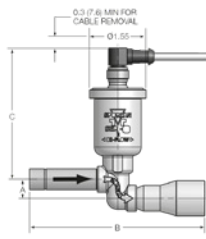
Valve	SER-B,-C	SER-D	SERI-G, -J, -K, -L	SEHI-175	SEHI-400
Motor type	2 phase, bipolar wet motor				
Compatible refrigerant	All common HCFC and HFC refrigerants including R-410A and subcritical R-744				All common HCFC and HFC refrigerants
Compatible oils	All common Mineral, Polyolester and Alkybenzene oils				
Supply voltage (L/R)	12 volt DC, -5%, +10% measured at the valve leads				
Cable type	IP67 Removable Quad-Position		IP67 Removable Quad-Position	Hermetic	Hermetic
Phase resistance	100 ohms + 10%		100 ohms +10%	75 ohms +10%	75 ohms +10%
Chopping current*	Evaluate to avoid step loss or damage to the valve*				
Maximum power input (L/R)	2.8 watts		2.8 watts	3.8 watts	3.8 watts
Recommended step rate	200/second (L/R), up to 400/second (current limited)				
Number of steps	2500		2500	6386	6386
Resolution	.00009" (.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" (12.7mm)	.500" (12.7mm)
MOPD	580 psid (40 bar)		500 psid (34 bar)	500 psid (34 bar)	300 psid (21 bar)
MRP	1015 psig (70 bar)	700 psig (48 bar)	700 psig (48 bar)	620 psig (43 bar)	500 psig (34 bar)
Max. internal leakage	100 cc/min @ 100 psid (6.9 bar), dry air				
Max. external leakage	.10 oz./yr at 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				



SER-B, -C

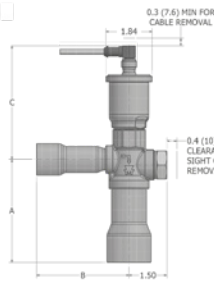


SER-DS



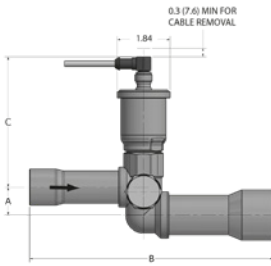
SERI-G, -J, -K, -L

(Angle)



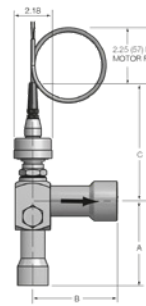
SERI-GS, -JS, -KS, -LS

(Straight Through Offset)



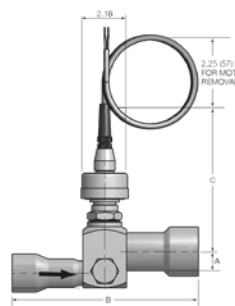
SEHI-175

(Angle)

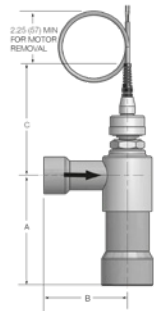


SEHI-175

(Straight Through Offset)

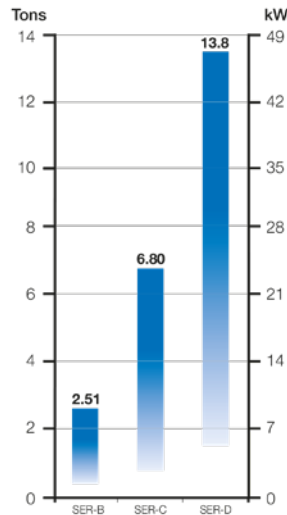


SEHI-400

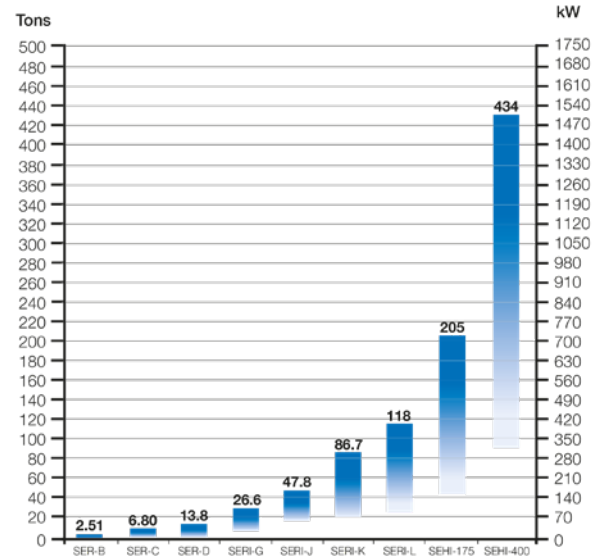


Specifications				
Valve	Configuration	A	B	C
SER-B	Angle	2.63 (66.8)	2.56 (65.0)	3.57 (90.7)
SER-C	Angle	2.63 (66.8)	2.56 (65.0)	3.57 (90.7)
SER-DS	Straight Through Offset	0.52 (13.2)	4.83 (122.7)	3.57 (90.7)
SERI-G	Angle	3.65 (92.7)	3.11 (79.0)	3.61 (91.7)
SERI-J		3.86 (98.0)	3.31 (84.1)	3.61 (91.7)
SERI-K		3.92 (99.6)	3.39 (86.1)	4.05 (102.9)
SERI-L		4.00 (101.6)	3.70 (94.0)	4.06 (103.1)
SERI-GS	Straight Through Offset	0.73 (18.5)	6.84 (173.7)	3.59 (91.2)
SERI-JS		0.73 (18.5)	7.09 (180.1)	3.59 (91.2)
SERI-KS		0.97 (24.6)	7.66 (194.6)	4.01 (101.9)
SERI-LS		0.97 (24.6)	7.69 (195.3)	4.01 (101.9)
SEHI-175	Angle	4.98 (126.5)	4.82 (122.4)	6.85 (174.0)
	Straight Through Offset	0.98 (24.9)	8.50 (215.9)	6.85 (174.0)
SEHI-400	Angle	6.28 (159.5)	5.08 (129.0)	6.71 (170.4)

CAPACITY



R-22 at 100°F (38°C) liquid, 100 psi (6 bar) pressure drop, 40°F (5°C) evaporator temperature, and full stroke.



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 Less Cable	3 Less Cable	S- Stripped and Tinned (Custom Connections Available)
SER-C	1/4", 3/8"	3/8", 1/2", 5/8"	Angle			
SER-DS	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", 1 3/8"	Angle or Straight Through Offset	10 Less Cable	3 Less Cable	
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"				
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	10, 20, 30, 40	3, 6, 9, 12	