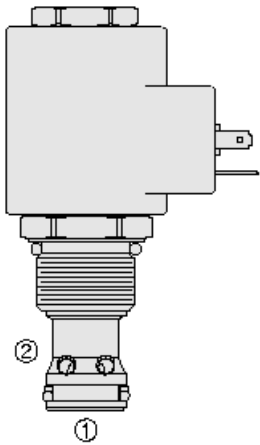




Overview



Description

TS12-27X is a pilot-operated, spool-type, proportional, pressure relieving valve which CAN be infinitely adjusted across a prescribed range using a variable electric input. The regulated pressure is inversely proportional to the input electrical current. The valve is intended for use as a pressure limiting device in demanding applications

Operation

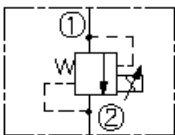
The TS12-27X blocks flow from port 1 to port 2 until sufficient pressure is present at port 1 to open the pilot section by overcoming the induced spring force. With no current applied, the valve will relieve at maximum set pressure. Applying current to the coil proportionally decreases the pressure required to open the valve from port 1 to port 2

Features

- Several adjustable pressure ranges plus factory preset fixed pressure model.
- Hardened parts for long life.
- 12 and 24 volt coils standard.
- Industry common cavity.
- Optional waterproof E-Coils rated up to IP69K.

Symbol

USAS/ISO:



Ratings

Pressure Ratings

Pressure rating	275.8 bar (4000 psi)	- Note: Port 1
	103.4 bar (1500 psi)	- Note: Port 2
Proof pressure	413.7 bar (6000 psi)	- Note: Port 1
	206.8 bar (3000 psi)	- Note: Port 2
Burst pressure	813.6 bar (11800 psi)	
Operating pressure range	6.9 to 207 bar (100 to 3000 psi)	- Note: Tested at range A 7.5 lpm (2 gpm)
	6.9 to 138 bar (100 to 2000 psi)	- Note: Tested at range b 7.5 lpm (2 gpm)
	6.9 to 69 bar (100 to 1000 psi)	- Note: Tested at range c 7.5 lpm (2 gpm)
Note	Minimum pressure CAN be factory set to 6.2 to 10.3 bar (90 to 150 psi)	
Maximum tank port pressure	103.4 bar (1500 psi)	- Note: Dynamic condition
Pressure rise	0.29 bar/lpm (16 psi/gpm)	- Note: A
	0.24 bar/lpm (13 psi/gpm)	- Note: B
	0.18 bar (10 psi/gpm)	- Note: C

Flow Ratings

Flow rating	189 lpm (50 gpm)	- Note: Delta-p (cartridge only) port 1-2 (coil de-energized) 15.1 to 18.9 bar (220 to 275 psi)
Maximum pilot flow	0.76 lpm (0.2 gpm)	
Hysteresis per cent	2.5 %	- Note: (a)
	3.4 %	- Note: (b)
	6 %	- Note: (c)

Temperature Ratings

Operating fluid temperature	-40 to 100 °C (-40 to 212 °F)	- Note: With buna N seals
	-26 to 204 °C (-15 to 400 °F)	- Note: With fluorocarbon seals
	-54 to 107 °C (-65 to 225 °F)	- Note: With polyurethane seals
Storage temperature	-40 to 70 °C (-40 to 160 °F)	
Ambient temperature	-40 to 70 °C (-40 to 160 °F)	

Other Ratings

Corrosion protection	960 hr salt spray per ASTM b117
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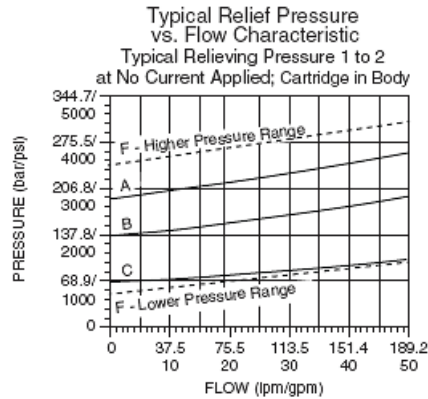
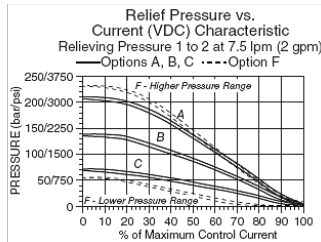
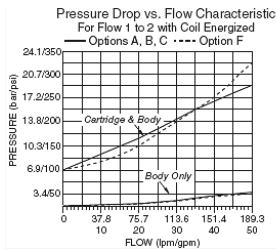
Operating Parameters

Fluids	Mineral based or synthetic with lubricating properties
Fluid viscosity range	7.4 to 420 cSt
Maximum operating contamination level	18/16/13 per ISO 4406

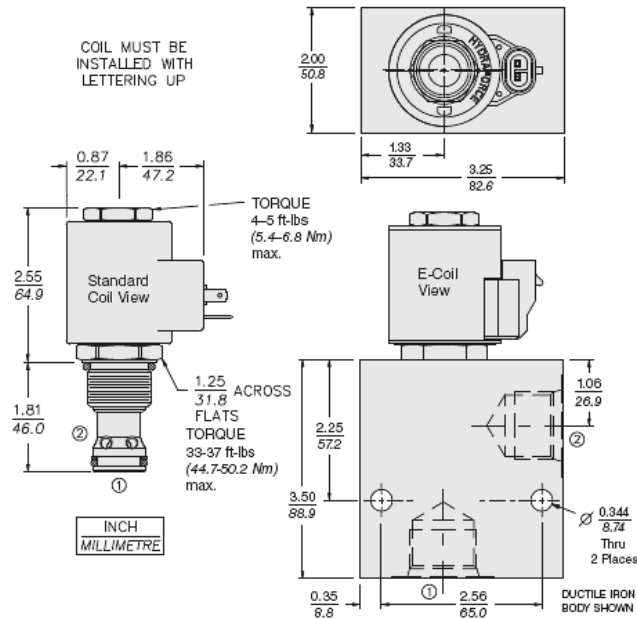
Properties

Unit weight	0.25 kg (0.56 lb)
Internal wetted surface area	244 cm ² (37.8 in ²)

Performance



Dimensions



Materials

Materials

Cartridge: Weight: 0.25 kg (0.56 lb); Steel with hardened work surfaces. Zinc-plated exposed surfaces; Buna N O-rings and TFE back-ups standard.

Standard Ported Body: Weight: 0.36 kg (0.8 lb); Anodized high-strength aluminum alloy, rated to 207 bar (3000 psi); Ductile iron bodies available; dimensions may differ.

D-Coil: Weight each: 0.32 kg (0.7 lb); Unitized thermoplastic encapsulated, Class H high temperature magnet wire.

E-Coil: Weight: 0.41 kg (0.9 lb); Perfect wound, fully encapsulated with rugged external metal shell; Rated up to IP69K with integral connectors.



Installation Specifications

Cavity	VC12-2
Cartridge installation torque	44.7 to 50.2 N-m (33 to 37 ft-lb)
Coil nut torque	5.4 to 6.8 N-m (4 to 5 ft-lb)
Orientation restriction	None

Accessories

Seal kit	SK12-2X-B	- Note: X = seal option
Housings		
Coils		

Order Code

POSITION	CODE	DESCRIPTION
		TS12-27D-H-J-L
D		Regulating Pressure Range
D	A	206.8 to 6.9 bar (3000 to 100 psi) Pressure Range
D	B	137.9 to 6.9 bar (2000 to 100 psi) Pressure Range
D	C	68.9 to 6.9 bar (1000 to 100 psi) Pressure Range
D	F	248.2 to 55.2 bar (3600 to 800 psi) Crack Pressure at Zero Current
H		Line Body
H	0	No Body
H	10T	Aluminum SAE 10
H	12T	Aluminum SAE 12
H	16T	Aluminum SAE 16
H	12TD	Ductile Iron SAE 12
H	16TD	Ductile Iron SAE 16
H	8B	Aluminum BSPP 1" (8)
H	8BD	Ductile Iron BSPP 1" (8)
J		Seal
J	N	Buna-N
J	V	Fluorocarbon
J	P	Polyurethane
J	U	PPDI Urethane
L		Coil
L	0	No Coil
L	10DG	10 VDC, D-Coil, DIN 43650
L	10DL	10 VDC, D-Coil, Dual Lead Wires
L	10DS	10 VDC, D-Coil, Dual Spade
L	10EL	10 VDC, E-Coil, Dual Lead Wires
L	10ER	10 VDC, E-Coil, Deutsch
L	12DG	12 VDC, D-Coil, DIN 43650
L	12DL	12 VDC, D-Coil, Dual Lead Wires, 18 inches long
L	12DL/36	12 VDC, D-Coil, Dual Lead Wires, 36 inches long
L	12DL/W	12 VDC, D-Coil, Dual Lead Wires with Weatherpak
L	12DR	12 VDC, D-Coil, Deutsch
L	12DS	12 VDC, D-Coil, Dual Spade



POSITION	CODE	DESCRIPTION
L	12EG	12 VDC, E-Coil, DIN 43650
L	12EJ	12 VDC, E-Coil, AMP Jr.
L	12EL	12 VDC, E-Coil, Dual Lead Wires, 18 inches long
L	12EL/36	12 VDC, E-Coil, Dual Lead Wires, 36 inches long
L	12ER	12 VDC, E-Coil, Deutsch
L	12EY	12 VDC, E-Coil, Metri-Pack 150
L	20DS	20 VDC, D-Coil, Dual Spade
L	20ER	20 VDC, E-Coil, Deutsch
L	24AG	24 VDC, D-Coil, DIN 43650
L	24AP	24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires
L	24DG	24 VDC, D-Coil, DIN 43650
L	24DL	24 VDC, D-Coil, Dual Lead Wires
L	24DL/W	24 VDC, D-Coil, Dual Lead Wires with Weatherpak
L	24DP	24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires
L	24DR	24 VDC, D-Coil, Deutsch
L	24DS	24 VDC, D-Coil, Dual Spade
L	24EG	24 VDC, E-Coil, DIN 43650
L	24EJ	24 VDC, E-Coil, AMP Jr.
L	24EL	24 VDC, E-Coil, Dual Lead Wires, 18 inches long
L	24EL/36	24 VDC, E-Coil, Dual Lead Wires, 36 inches long
L	24ER	24 VDC, E-Coil, Deutsch
L	24EY	24 VDC, E-Coil, Metri-Pack 150
L	36DS	36 VDC, D-Coil, Dual Spade

