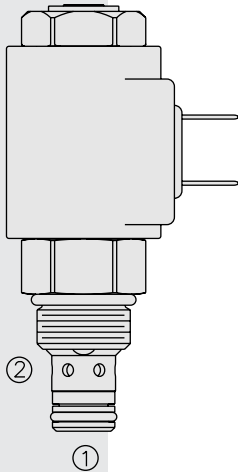


ELECTRO-PROPORTIONAL VALVES—PRESSURE CONTROLS

TS08-27 Proportional Electric Relief Valve

U.S. Patent
6,267,350



DESCRIPTION

A screw-in, cartridge-style, pilot-operated, spool-type pressure relief valve, which can be infinitely adjusted across a prescribed range using a variable electric input. Pressure output is inversely proportional to DC current input. This valve is intended for use as a pressure limiting device in demanding applications.

OPERATION

The **TS08-27** blocks flow from ① to ② until sufficient pressure is present at ① to open the valve by overcoming the preset induced spring force. With no current applied, the valve will relieve at ± 50 psi of the spring maximum. Applying current to the coil reduces the induced spring force thereby reducing the valve setting. The regulated pressure is inversely proportional to the input electrical current.

Note: This valve is ideal for hydraulic fan drive applications. Consult factory for electronic controllers specifically designed for fan drive applications.

FEATURES

- 12 and 24 volt coils standard.
- Industry common cavity.
- Hardened parts for long life.

RATINGS

Maximum Operating Pressure: 241 bar (3500 psi)

Maximum Control Current: 1.20 amps for 12 VDC coil; 0.60 amps for 24 VDC coil

Relief Pressure Range from Zero to Maximum Control Current:

Minimum Pressure is factory adjusted.

A: 207–4.1 bar (3000–60 psi)

B: 138–4.1 bar (2000–60 psi)

Rated Flow: 19 lpm/5 gpm; $\Delta P = 7.8$ bar (113.3 psi) $\pm 10\%$, cartridge only,
① to ② coil energized

Maximum Pilot Flow: 0.76 lpm (0.2 gpm)

Hysteresis: Less than 3%

Flow Path: Free Flow: ① to ② coil energized; Relieving: ① to ② coil de-energized

Pressure Rise: **A:** 40 psi/gpm; **B:** 50 psi/gpm

Temperature: -40 to 120°C (-40 to 250°F) with standard Buna N seals

Filtration: See page 9.010.1

Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1

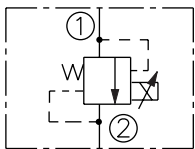
Installation Recommendation: When possible, the valve should be mounted below the reservoir oil level. This will maintain oil in the armature preventing trapped air instability. If this is not feasible, mount the valve horizontally for best results.

Cavity: VC08-2; See page 9.108.1; **Cavity Tool:** CT08-2XX; See page 8.600.1

Seal Kit: SK08-2X-B; See page 8.650.1

SYMBOLS

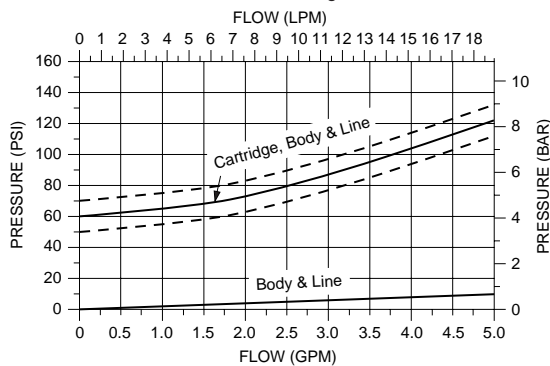
USASI/ISO:



PERFORMANCE

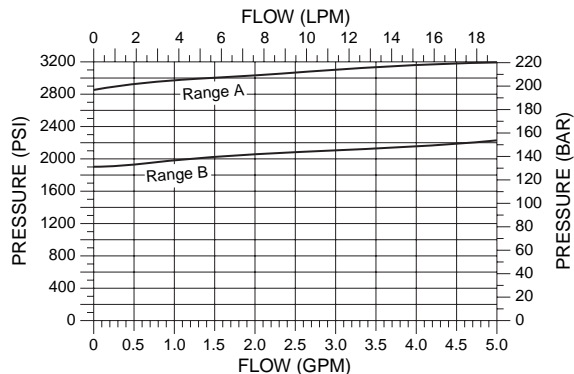
PRESSURE DROP VS. FLOW CHARACTERISTIC

Flow from Port ① to Port ② with Coil Energized, at Maximum Set Current

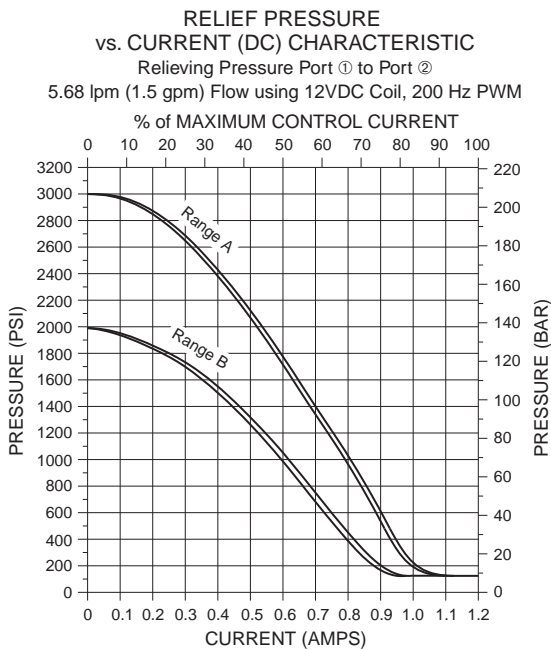


TYPICAL RELIEF PRESSURE VS. FLOW CHARACTERISTIC

Typical Relieving Pressure Port ① to Port ②; Cartridge in Body



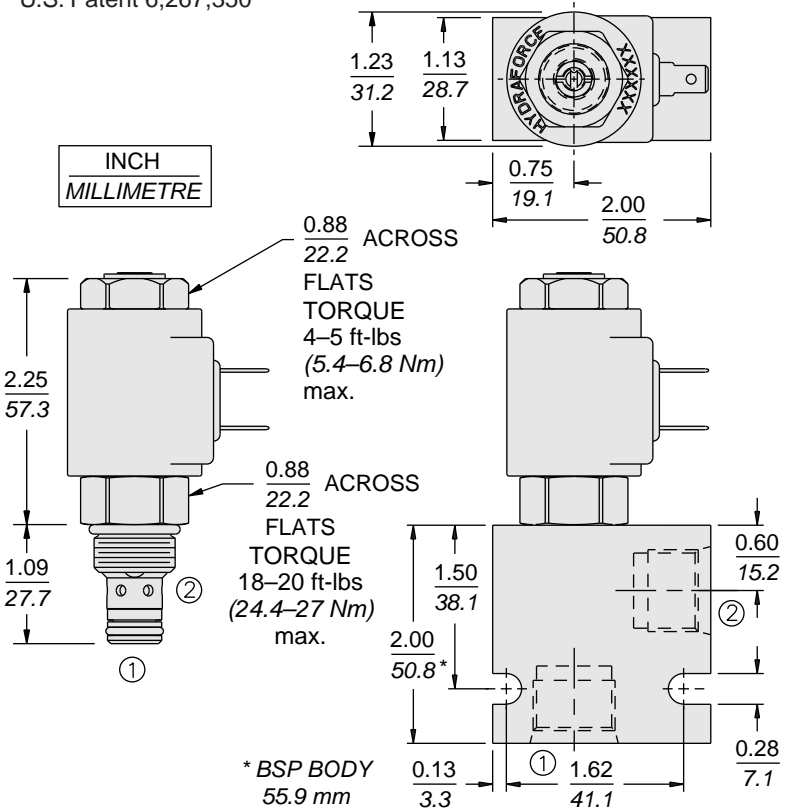
PERFORMANCE (continued)



Recommended Electronic Controllers:
 Model **EFDR2** Multi-Input Fan Drive Controller.
 For more information go to:
<http://www.hydraforce.com/Electro/fandrive.htm>
 or
Recommended Electronic Controllers
 catalog page 2.001.1 (Table 2)

DIMENSIONS

U.S. Patent 6,267,350



MATERIALS

Cartridge: Weight: 0.15 kg. (0.33 lbs.)
 Steel with hardened work surfaces.
 Zinc-plated exposed surfaces.
 Buna N O-rings and polyester elastomer back-ups standard.

Standard Ported Body: Weight: 0.16 kg. (0.35 lbs.)
 Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi).
 Ductile iron bodies available; dimensions may differ.
 See page 8.008.1

EHPR Series Coils:

D-Coil: Weight: 0.11 kg. (0.25 lbs.)
 Unitized, thermoplastic encapsulated, Class H high temperature magnetwire. See page 3.200.1

E-Coil: Weight: 0.14 kg. (0.3 lbs.)
 Fully encapsulated with rugged external metal shell. Rated up to IP69K with integral connectors.
 See page 3.400.1

TO ORDER

TS08-27		-	-	-	-	-
Maximum Operating Pressure						
	207 bar (3000 psi)	A				
	138 bar (2000 psi)	B				
Porting						
	Cartridge Only	0				
	SAE 6	6T				
	3/8 in. BSP*	3B				
	1/2 in. BSP*	4B				
*BSP Body; U.K. Mfr. Only						
Seals						
	Buna N (Std.)	N				
	Fluorocarbon	V				
D-Coil Terminations						
	DS Dual Spades					
	DG DIN 43650					
	DL Leadwires (2)					
	DL/W Leads w/Weatherpak® Connectors					
E-Coil Terminations						
	ER Deutsch DT04-2P (IP69K Rated)					
	EY Metri-Pak® 150 (IP69K Rated)					
Coils with internal diode are available. Consult factory.						
Voltage						
	0 Less Coil					
	12 12 VDC (1.10 amps max.)					
	24 24 VDC (0.55 amps max.)					