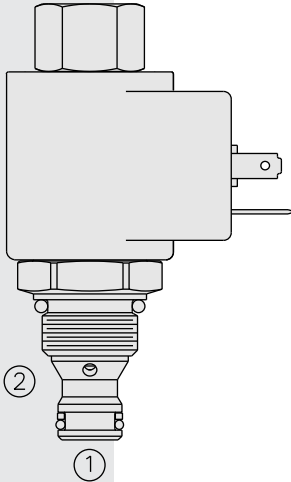


ELECTRO-PROPORTIONAL VALVES—PRESSURE CONTROLS

TS08-20 Proportional Electric Relief Valve



DESCRIPTION

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

OPERATION

The **TS08-20** blocks flow from ① to ② until sufficient pressure is present at ① to offset the electrically induced solenoid force. With no current applied to the solenoid, the valve will free flow from ① to ②.

Note: Back pressure on port ② becomes additive to the pressure setting at a 1:1 ratio.

FEATURES

- 12 and 24 volt coils standard.
- Optional waterproof E-Coils rated up to IP69K.
- Industry common cavity.
- Waterproofed coils standard.

RATINGS

Maximum Inlet Pressure: 34.5 bar (500 psi)

Maximum Control Current: 0.65 amps for 12 VDC coil; 0.33 amps for 24 VDC coil

Control Signal: DC or PWM (Significant improvements in valve performance occur with superimposed dither, with either control method.)

Dither Frequency: 250 Hz or higher

Hysteresis with Dither 250 Hz: 3.0% (7% maximum without dither)

Operational Relief Pressure Range from Zero to Maximum Control Current:

A: 0–34.5 bar (0–500 psi); **B:** 0–20.7 bar (0–300 psi)

Rated Flow: A: 3.8 lpm/1 gpm @ 1.4 bar/20 psi pressure drop

B: 3.8 lpm/1 gpm @ 0.8 bar/12 psi pressure drop

Step Response: T_{ON} <27 ms; T_{OFF} <50 ms

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

Temperature: -40 to 100°C (-40 to 212°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

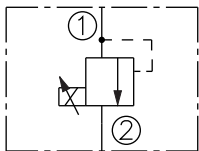
Seal Kit: SK08-2X-B; See page 8.650.1

Coil Nut: Part No. 7004410;

For E-coils manufactured prior to 1-1-04, see page 3.400.1 for coil nut info.

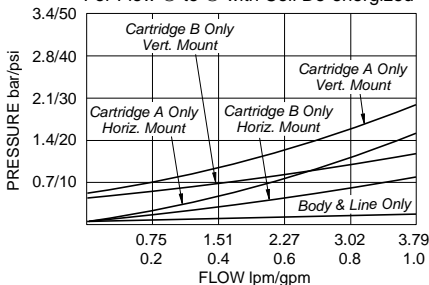
SYMBOLS

USAS/ISO:

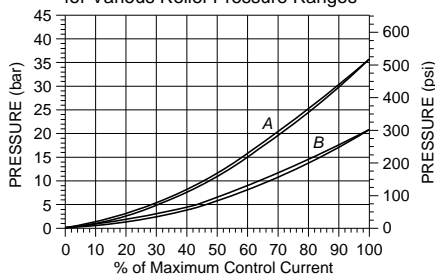


PERFORMANCE

Pressure Drop vs. Flow Characteristic
For Flow ① to ② with Coil De-energized

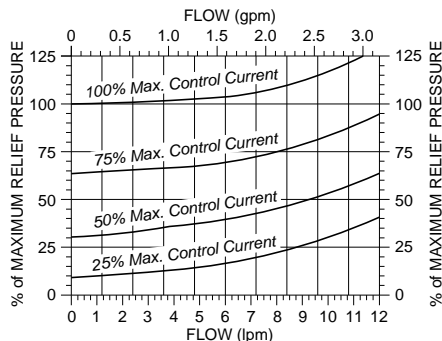


Relief Pressure vs.
Current (DC) 260 Hz Dither
Relieving Pressure ① to ②
for Various Relief Pressure Ranges



Typical Relief Pressure vs. Flow Characteristic

Typical Relieving Pressure ① to ②
at Various %'s of Maximum Control Current
Pressure Range "A" (20.7 bar/300 psi)
Pressure Range "B" (34.5 bar/5000 psi); Cartridge in Body



Recommended Electronic Controllers:

Model **EFDR2** Multi-Input Fan Drive Controller.

For more information go to:

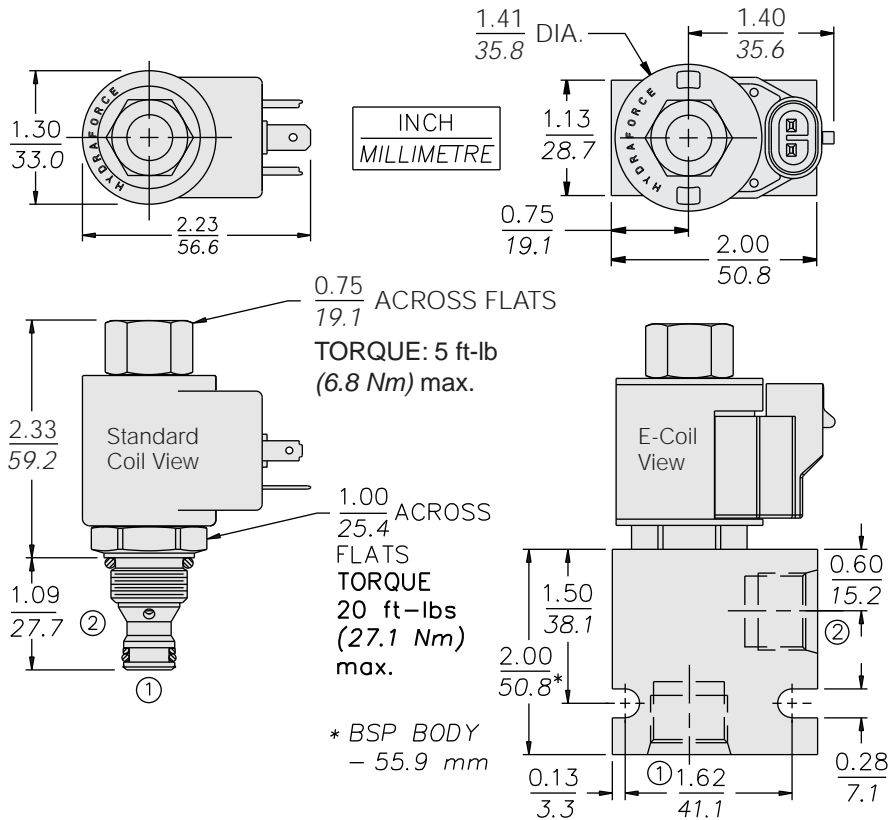
<http://www.hydraforce.com/Electro/fandrive.htm>

or

Recommended Electronic Controllers

catalog page 2.001.1 (Table 2)

DIMENSIONS



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

Standard 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.)
Perfect wound, fully encapsulated with rugged external metal shell. Rated up to IP69K with integral connectors. **Note: See page 3.400.1 for all E-Coil retrofit applications.**

TO ORDER

TS08-20		-	-	-	-	-	-	-	-
Maximum Relief Pressure									
34.5 bar (500 psi)	A								
20.7 bar (300 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								
Termination Std. Coil									
DS	Dual Spades								
DG	DIN 43650								
DL	Leadwires (2)								
DL/W	Leads w/Weatherpak® Connectors								
DR	Deutsch DT04-2P								
Termination E-Coil									
ER	Deutsch DT04-2P (IP69K Rated)								
EY	Metri-Pack® 150 (IP69K Rated)								
Voltage									
0	Less Coil								
10	10 VDC (0.80 amps max.)								
12	12 VDC (0.65 amps max.)								
20	20 VDC (0.40 amps max.)								
24	24 VDC (0.33 amps max.)								

Coils with internal diode are available. Consult factory.