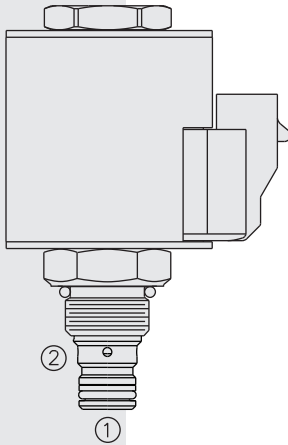


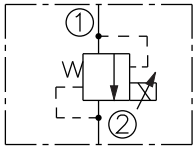
ELECTRO-PROPORTIONAL VALVES—PRESSURE CONTROLS

TS58-21F Proportional Pressure Relieving Valve

U.S. Patent
6,267,350



ISO SYMBOL



DESCRIPTION

A screw-in, cartridge-style, single-stage, poppet-type pressure relieving valve, which can be infinitely adjusted across a prescribed range using a variable electric input. Pressure output is inversely proportional to DC current input.

OPERATION

The **TS58-21F** blocks flow from 1 to 2 until sufficient pressure is present at 1 to open the valve by overcoming the preset 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.

FEATURES

- 12 and 24 volt coils standard.
- Optional waterproof E-Coils rated up to IP69K.
- Industry common cavity.
- Hardened parts for long life.

RATINGS

Maximum Operating Pressure: 393 bar (5700 psi)

Relief Pressure Range from Zero to Maximum Control Current:
344.7–6.9 bar (5000–100 psi)

Pressure Setting Range: From 4000 psi (276 bar) to 5000 psi (345 bar)

Hysteresis at 200 Hz PWM: 5%

Rated Flow: 1.9 lpm/0.5 gpm; $\Delta P = 6.9$ to 9 bar (100 to 130 psi), cartridge only,
1 to 2 coil energized

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

Electrical Parameters:

Coil	Typical Max. Current (A) at 0 gpm		Typical Resistance $\pm 5\%$ @ 20°C (ohms)		Typical Apparent Inductance (mH)	
	12 VDC	24 VDC	12 VDC	24 VDC	12 VDC	24 VDC
D-Coil	1.25	0.63	7.2 $\pm 3\%$	28.8 $\pm 5\%$	156	546
E-Coil	1.30	0.65	7.1 $\pm 3\%$	28.5 $\pm 5\%$	160	560

Temperature: -40° to 121°C (-40° to 250°F) with standard Buna N seals
-35° to 204°C (-31° to 400°F) with fluorocarbon seals;
-54° to 107°C (-65° to 225°F) with polyurethane 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.

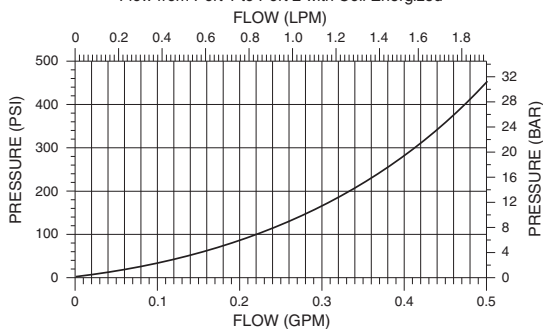
Cavity: VC08-2; See page 9.108.1; **Cavity Tool:** CT08-2XX; See page 8.600.1

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

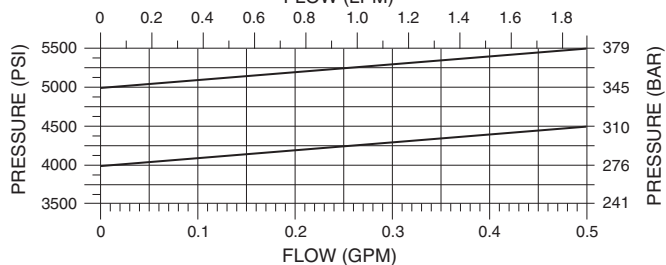
Coil Nut: Part No. 4540550

PERFORMANCE

PRESSURE DROP VS. FLOW CHARACTERISTIC
Flow from Port 1 to Port 2 with Coil Energized



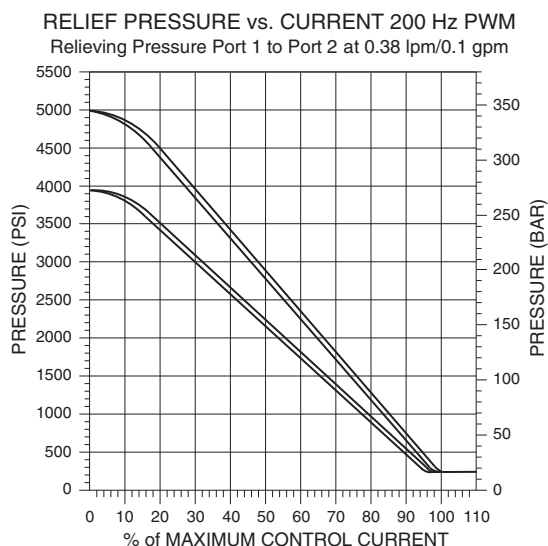
TYPICAL RELIEVING PRESSURE
Port 1 to Port 2; No Current Applied; Upper & Lower Limit



Performance info. continued on following page.

TS58-21F

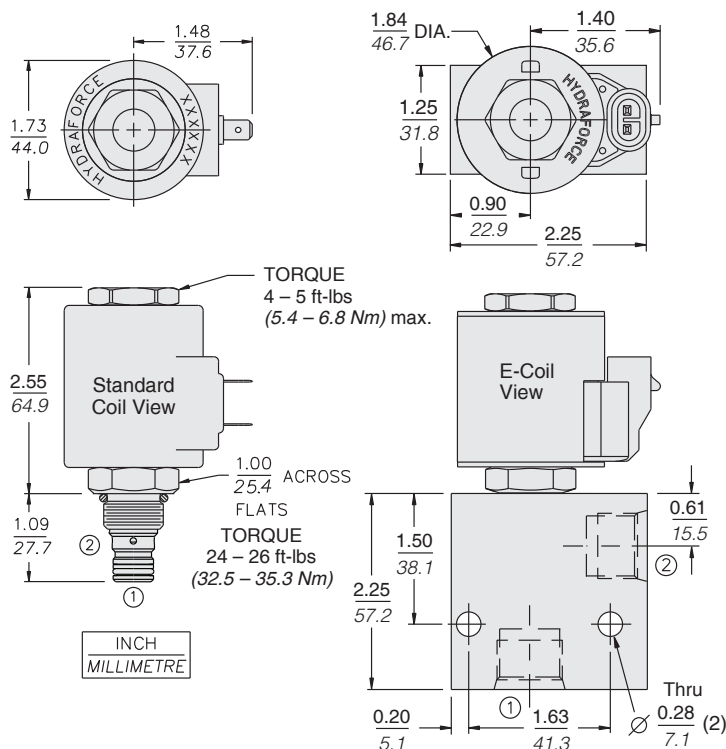
PERFORMANCE (continued)



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: 0.16 kg (0.35 lb)
Steel with hardened work surfaces.
Zinc-plated exposed surfaces. Buna N
O-rings and polyester elastomer
back-ups standard.

Ported Body: Weight: 0.54 kg
(1.2 lb), Ductile iron standard;
rated to 345 bar (5000 psi);
See page 8.008.1.

Standard Coil: Weight: 0.32 kg
(0.7 lb) Unitized, thermoplastic
encapsulated, Class H high
temperature magnetwire.
See page 3.200.1

E-Coil: Weight: 0.41 kg (0.9 lb)
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

TS58-21F

Screen
No Screen (blank)
150µ Screen **S**

Porting
Cartridge Only **0**
SAE 6 **6TD**
3/8 in. BSP* **3BD**
1/2 in. BSP* **4BD**
*BSP Body; U.K. Mfr. Only

Seals
Buna N (Std.) **N**
Fluorocarbon **V**
Polyurethane **P**

Voltage
0 Less Coil
10 10 VDC
(1.30 amps max.)
12 12 VDC
(1.10 amps max.)
20 20 VDC
(0.65 amps max.)
24 24 VDC
(0.55 amps max.)

Pressure Setting
(X 100 psi [6,9 bar])
From 4000 psi
[275,8 bar] to 5000 psi
[344,7 bar] ONLY

Coil Termination	E-Coil	D-Coil
Deutsch DT04-2P	ER (IP69K)	DR (IP65)
Metri-Pak 150	EY (IP69K)	DY (IP65)
Dual Lead Wires w/Weatherpack	EL (IP69K)	DL (IP65)
Amp Jr. Timer	EJ (IP67)	DW
DIN 43650	EG (IP65)	DG (IP65)
Dual Spades	—	DS (IP65)

For Coils with Zener Diode, add "Z" to option code.
For example: "ER/Z". Not available on all models.
See coil option info. on pages 3.200.1 & 3.400.1