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; ΔP = 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:

<table>
<thead>
<tr>
<th>Coil</th>
<th>Typical Max. Current (A) at 0 gpm</th>
<th>Typical Resistance ±5% @ 20°C (ohms)</th>
<th>Typical Apparent Inductance (mH)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12 VDC 24 VDC</td>
<td>12 VDC 24 VDC</td>
<td>12 VDC 24 VDC</td>
</tr>
<tr>
<td>D-Coil</td>
<td>1.25 0.63</td>
<td>7.2 ±3%</td>
<td>156 546</td>
</tr>
<tr>
<td>E-Coil</td>
<td>1.30 0.65</td>
<td>7.1 ±3%</td>
<td>160 560</td>
</tr>
</tbody>
</table>

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

Performance info. continued on following page.
**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
  - 150μ Screen **S**

- **Porting**
  - Cartridge Only **0**
  - SAE 6 **TD**
  - 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**

- **Coil Termination**
  - E-Coil **E**
  - D-Coil **D**

  - Deutsch DT04-2P **ER** (IP69K)
  - Metri-Pak 150 **EU** (IP69K)
  - Dual Lead Wires **EL** (IP69K)
  - w/Weatherpack **DL** (IP69K)
  - Amp Jr. Timer **EJ** (IP67)
  - DIN 43650 **EG** (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

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**DIMENSIONS**

U.S. Patent 6,267,350

**RELIEF PRESSURE vs. CURRENT 200 Hz PWM**
Relieving Pressure Port 1 to Port 2 at 0.38 lpm/0.1 gpm

**PRESSURE (PSI)**
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500

**% of MAXIMUM CONTROL CURRENT**
0 10 20 30 40 50 60 70 80 90 100

**PRESSURE (BAR)**
0 50 100 150 200 250 300 350 400 450 500

**TORQUE**
- 4 – 5 ft-lbs (5.4 – 6.8 Nm) max.
- 24 – 26 ft-lbs (32.5 – 35.3 Nm) ACROSS FLATS

**RELIEF PRESSURE vs. CURRENT 200 Hz PWM**
Relieving Pressure Port 1 to Port 2 at 0.38 lpm/0.1 gpm

**PRESSURE (PSI)**
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500

**% of MAXIMUM CONTROL CURRENT**
0 10 20 30 40 50 60 70 80 90 100

**PRESSURE (BAR)**
0 50 100 150 200 250 300 350 400 450 500

**TORQUE**
- 4 – 5 ft-lbs (5.4 – 6.8 Nm) max.
- 24 – 26 ft-lbs (32.5 – 35.3 Nm) ACROSS FLATS

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**Recommended Electronic Controllers:**

- Model EFDR2 Multi-Input Fan Drive Controller.
- For more information go to:
  - Recommended Electronic Controllers catalog page 2.001.1 (Table 2)