Proportional Pressure Control Valve, Relieving, Pilot Operated

SR4P2-B2

7/8-14 UNF • \(Q_{\text{max}}\) 80 l/min (21 GPM) • \(p_{\text{max}}\) 350 bar (5100 PSI)

Technical Features

› Increasing pressure output proportional with increasing DC current input
› Low hysteresis, accurate pressure control and low pressure drop
› Wide pressure range up to 350 bar
› High flow capacity
› Solenoid electrical terminal option acc. to EN 175301-803-A, AMP Junior Timer, or Deutsch DT04-2P
› 12 or 24 V DC coils
› In the standard version, the valve is zinc-coated for 240 h protection acc. to ISO 9227

Functional Description

A pilot operated proportional pressure relief spool valve in the form of a screw-in cartridge. The valve is designed for continuous regulation of system pressure. The complete valve consist of a pilot stage SR1P2-A2 and a main stage with connection 7/8-14 UNF. To set the minimum cracking pressure use the adjusting screw (s=5) which incorporates also the air bleed screw. Back pressure on port T becomes additive to the pressure setting of the valve. Air bleeding is necessary for the correct function of the valve.

Installation: When possible, the valve should be mounted below the reservoir oil level. This will keep oil in the actuator at all times, preventing instability caused by air enclosures. If this is not possible, mount the valve for best results vertically downward with proper air bleeding.

Technical Data

<table>
<thead>
<tr>
<th>Valve size / Cartridge cavity</th>
<th>7/8-14 UNF-2A / B2 (C-10-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure (port P) bar (PSI)</td>
<td>350 (5080)</td>
</tr>
<tr>
<td>Max. operating pressure (port T) bar (PSI)</td>
<td>100 (1450)</td>
</tr>
<tr>
<td>Max. flow l/min (GPM)</td>
<td>80 (2.1)</td>
</tr>
<tr>
<td>Fluid temperature range (NBR) °C (°F)</td>
<td>-30...+120 (-22...+248)</td>
</tr>
<tr>
<td>Fluid temperature range (FPM) °C (°F)</td>
<td>-20...+120 (-4...+248)</td>
</tr>
<tr>
<td>Ambient temperature range °C (°F)</td>
<td>-30...+80 (-22...+176)</td>
</tr>
<tr>
<td>Min. setting pressure bar (PSI)</td>
<td>7 bar (101.5 PSI) for 5 l/min (1.32 GPM)</td>
</tr>
<tr>
<td>Hysteresis %</td>
<td>&lt; 5</td>
</tr>
</tbody>
</table>

Solenoid data

| Supply voltage V | 12 DC |
| Max. current A | 1 |
| Rated resistance at 20 °C (68 °F) Ω | 6.5±5 % |
| Duty cycle % | 100 |
| Optimal PWM frequency Hz | 250 |
| Quenching diode | BZW06-19B |
| Enclosure type acc. to EN 60529** (acc.to terminal type) | IP65 / IP67 / IP69K |

Weight with solenoid kg (Ibs) 0.58 (1.28)

Data Sheet

| General information | GI_0060 |
| Products and operating conditions | |
| Coil types | C_8007 |
| Valve bodies | SB_0018 |
| Cavity details / Form tools | SMT_0019 |
| Spare parts | SP_8010 |

**The indicated IP protection level is only reached with a properly mounted connector.

Dimensions in millimeters (inches)

Connector type

E1, E2 - IP65
EN 175301-803-A

E3, E4 - IP67
AMC Junior
Timer - radial

E3A, E4A - IP67
AMC Junior
Timer - axial

E12A, E13A - IP67 / IP69K
Deutsch DT04-2P
### Characteristics measured at \( v = 32 \text{ mm}^3/\text{s} \) (156 SUS)

#### Relief pressure related to control signal

\( Q=5 \text{ l/\text{min}} \) (1.32 GPM), pressure in port \( T=0 \text{ bar} \), PWM 160Hz

![Graph showing the relationship between control current and pressure range](image)

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>3</th>
<th>6</th>
<th>12</th>
<th>21</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

#### Pressure drop related to flow rate

0% of control current, P-T direction

![Graph showing the relationship between flow rate and pressure drop](image)

#### Ordering Code

Proportional pressure control valve, relieving, pilot operated

- Valve cavity: 7/8-14 UNF-2A (C-10-2)
- Model: High performance
- Max. regulated pressure:
  - up to 30 bar (435 PSI): 3
  - up to 60 bar (870 PSI): 6
  - up to 120 bar (1740 PSI): 12
  - up to 210 bar (3046 PSI): 21
  - up to 350 bar (5076 PSI): 35
- Supply voltage / max. current:
  - 12 V DC / 1.0 A: 12
  - 24 V DC / 0.6 A: 24

Main stage ordering key: SR6H-B2/HV

- Connector type:
  - E1: EN 175301-803-A
  - E2: E1 with quenching diode
  - E3: AMP Junior Timer - radial direction (2 pins; male)
  - E4: E3 with quenching diode
  - E3A: AMP Junior Timer - axial direction (2 pins; male)
  - E4A: E3A with quenching diode
  - E12A: Deutsch DT04-2P - axial direction
  - E13A: E12A with quenching diode

No designation: NBR
- Surface treatment:
  - A: zinc-coated (ZnCr-3), ISO 9227 (240 h)
  - B: zinc-coated (ZnNi), ISO 9227 (520 h)
- Seals:
  - NBR
  - FPM (Viton)

For other solenoid terminals see data sheet No. 8007

---

Attention: The proportional pressure relief valve is not mechanically protected and it does not perform the relief valve function.