Proportional Pressure Control Valve, Reducing - Relieving, Direct-Acting

PVRM3-103  M24 x 1.5  •  Q_{\text{max}} 40 l/min (11 GPM)  •  p_{\text{max}} 90 bar (1300 PSI)

Technical Features

› Excellent stability throughout flow range with rapid response to proportional current input change
› Low hysteresis, accurate pressure control and low pressure drop through CFD optimized flow paths
› Precise pressure control vs current and excellent repeatability
› Integrated relief function for protection against pressure peaks
› Solenoid electrical terminal AMP Junior Timer, or Deutsch D04-2P
› 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 direct-operated, spool-type hydraulic pressure reducing-relieving valve in the form of a screw-in cartridge. Reduced pressure output is proportional to DC current input. This valve is intended for use as a pressure limiting device. Note: Consult factory for special OEM versions of this product.

Model Code  no mesh screen

Technical Data

<table>
<thead>
<tr>
<th>Valve size / Cartridge cavity</th>
<th>M24 x 1.5 / QJ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure (port P)</td>
<td>bar (PSI)</td>
</tr>
<tr>
<td>Max. reduced pressure (port A)</td>
<td>bar (PSI)</td>
</tr>
<tr>
<td>Max. flow rate P-A</td>
<td>l/min (GPM)</td>
</tr>
<tr>
<td>Fluid temperature range (NBR)</td>
<td>°C (°F)</td>
</tr>
<tr>
<td>Fluid temperature range (FPM)</td>
<td>°C (°F)</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>°C (°F)</td>
</tr>
<tr>
<td>Response time at 100 % signal</td>
<td>ms</td>
</tr>
<tr>
<td>Solenoid data</td>
<td></td>
</tr>
<tr>
<td>Supply voltage</td>
<td>V</td>
</tr>
<tr>
<td>Max. current</td>
<td>A</td>
</tr>
<tr>
<td>Rated resistance at 20 °C (68 °F)</td>
<td>Ω</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>%</td>
</tr>
<tr>
<td>Optimal PWM frequency</td>
<td>Hz</td>
</tr>
<tr>
<td>Quenching diode</td>
<td>BZW06-288</td>
</tr>
<tr>
<td>Enclosure type acc. to EN 60529**</td>
<td>(acc.to terminal type) IP67 / IP69K</td>
</tr>
<tr>
<td>Weight with solenoid</td>
<td>kg (lbs)</td>
</tr>
</tbody>
</table>

Data Sheet

<table>
<thead>
<tr>
<th>Type</th>
<th>Data Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>General information</td>
<td>GI_0060</td>
</tr>
<tr>
<td>Cavity details</td>
<td>SMT_0019</td>
</tr>
<tr>
<td>Spare parts</td>
<td>SP_8010</td>
</tr>
</tbody>
</table>

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

Dimensions in millimeters (inches)

Connector type

E3, E4 - IP67
AMP Junior Timer

E12A, E13A - IP67 / IP69K
Deutsch DT04-2P

Ventilating screw

only for version with reduced pressure 80 bar
**Characteristics measured at \( v = 32 \text{ mm}^2/\text{s} \) (156 SUS)**

### Reduced pressure related to control signal

- **Port A**, range 0 - 20 bar (290 PSI), \( Q = 0 \) lpm (GPM)
- **Port P**, inlet pressure 50 bar (730 PSI)

![Graph](image1)

### Reduced pressure related to control signal

- **Port A**, range 0 - 18 bar (260 PSI), \( Q = 0 \) lpm (GPM)
- **Port P**, inlet pressure 50 bar (730 PSI)

![Graph](image2)

### Reduced pressure related to control signal

- **Port A**, range 0 - 30 bar (435 PSI), \( Q = 0 \) lpm (GPM)
- **Port P**, inlet pressure 50 bar (730 PSI)

![Graph](image3)

### Reduced pressure related to control signal

- **Port A**, range 0 - 20 bar (290 PSI), \( Q = 0 \) lpm (GPM)
- **Port P**, inlet pressure 90 bar (1305 PSI)

![Graph](image4)

### Pressure drop related to flow rate

- **A-T**, Valve coil de-energized (relieving function)
- **P-A**, Valve coil energized (reducing function)

![Graph](image5)

### Ordering Code

- **PVRM3 - 103 / S** -  -  -  -

**Proportional pressure control valve, reducing - relieving, direct-acting**

- **Valve cavity**: M24 x 1.5 / QJ3
- **Model**: screw-in cartridge
- **Max. reduced pressure**
  - 18 bar (260 PSI)
  - 20 bar (290 PSI)
  - 30 bar (435 PSI)
  - 80 bar (1160 PSI)
- **Supply voltage / max. current**
  - 12 V DC / 1.5 A
  - 24 V DC / 1 A

**Surface treatment**
- zinc-coated (ZnCr-3), ISO 9227 (240 h)
- zinc-coated (ZnNi), ISO 9227 (520 h)

**Seals**
- NBR
- FPM (Viton)

**Connector type**
- 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