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

PVRM3-103

M24 x 1.5 • Qmax 40 l/min (11 GPM) • pmax 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

<table>
<thead>
<tr>
<th>Symbol</th>
<th>no mesh screen</th>
</tr>
</thead>
</table>

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) bar (PSI)</td>
<td>50 (730) 90 (1305)</td>
</tr>
<tr>
<td>Max. reduced pressure (port A) bar (PSI)</td>
<td>18 (260) 20 (290) 30 (435) 80 (1160)</td>
</tr>
<tr>
<td>Max. flow rate P-A l/min (GPM)</td>
<td>40 (11)</td>
</tr>
<tr>
<td>Fluid temperature range (NBR) °C (°F)</td>
<td>-30 ... +90 (-22 ... +194), +100 (212) short-time</td>
</tr>
<tr>
<td>Fluid temperature range (FPV) °C (°F)</td>
<td>-20 ... +90 (-4 ... +194), +100 (212) short-time</td>
</tr>
<tr>
<td>Ambient temperature range °C (°F)</td>
<td>-30 ... +90 (-22 ... +194), +100 (212) short-time</td>
</tr>
<tr>
<td>Response time at 100 % signal ms</td>
<td>&lt; 50</td>
</tr>
<tr>
<td>Solenoid data</td>
<td></td>
</tr>
<tr>
<td>Supply voltage V</td>
<td>12 DC 24 DC</td>
</tr>
<tr>
<td>Max. current A</td>
<td>1.5 1</td>
</tr>
<tr>
<td>Rated resistance at 20 °C (68 °F) Ω</td>
<td>5 ± 6.5 % 13.4 ± 6.5 %</td>
</tr>
<tr>
<td>Duty cycle %</td>
<td>100</td>
</tr>
<tr>
<td>Optimal PWM frequency Hz</td>
<td>150</td>
</tr>
<tr>
<td>Quenching diode</td>
<td>BZW06-28B BZW06-33B</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 kg (lbs)</td>
<td>0.4 (0.88)</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Data Sheet</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>General information</td>
<td>GI_0060</td>
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<tr>
<td>Products and operating conditions</td>
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</tr>
<tr>
<td>Cavity details</td>
<td>SMT_0019 SMT-QJ3*</td>
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<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 $v = 32 \ mm^3/s$ (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)

#### 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)

#### Reduced pressure related to control signal

**Port A**, range 0 - 80 bar (1160 PSI), $Q = 0$ lpm (GPM)

**Port P**, inlet pressure 90 bar (1305 PSI)

#### Pressure drop related to flow rate

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

#### 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

- **A**
  - zinc-coated (ZnCr-3), ISO 9227 (240 h)
- **B**
  - zinc-coated (ZnNi), ISO 9227 (520 h)

#### Seals

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

#### Connector type

- **E3A**
  - AMP Junior Timer - axial direction (2 pins; male)
  - E3A with quenching diode
- **E4A**
- **E12A**
  - Deutsch DT04-2P - axial direction
- **E13A**
  - E12A with quenching diode