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

PVRM1-063

M20 x 1.5 • Qmax 20 l/min (5 GPM) • pmax 50 bar (700 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
- Precise pressure control vs current and excellent repeatability
- Integrated relief function for protection against pressure peaks
- Solenoid electrical terminal acc. to EN 175301-803-A, AMP Junior Timer, or Deutsch DT04-2P
- 12 or 24 V DC coils
- Optional mesh screen
- 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>
<th>with mesh screen</th>
</tr>
</thead>
</table>

Technical Data

<table>
<thead>
<tr>
<th>Valve size / Cartridge cavity</th>
<th>M20 x 1.5 / QE3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure (port P) bar (PSI)</td>
<td>50 (730)</td>
</tr>
<tr>
<td>Max. reduced pressure (port A) bar (PSI)</td>
<td>20 (290)</td>
</tr>
<tr>
<td>Max. flow rate P-A l/min (GPM)</td>
<td>32 (464)</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 (FPM) °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</td>
</tr>
<tr>
<td>Max. current A</td>
<td>1</td>
</tr>
<tr>
<td>Rated resistance at 20 °C (68 °F) Ω</td>
<td>7.1±6.5%</td>
</tr>
<tr>
<td>Duty cycle %</td>
<td>20.6±6.5%</td>
</tr>
<tr>
<td>Optimal PWM frequency Hz</td>
<td>100</td>
</tr>
<tr>
<td>Quenching diode</td>
<td>BZW06-28B</td>
</tr>
<tr>
<td>Enclosure type acc. to EN 60529**</td>
<td>(acc. to terminal type) IP65 / IP67 / IP69K</td>
</tr>
<tr>
<td>Weight with solenoid kg (lbs)</td>
<td>0.4 (0.88)</td>
</tr>
</tbody>
</table>

Data sheet

<table>
<thead>
<tr>
<th>Type</th>
<th>General information</th>
<th>Cavity details</th>
<th>Spare parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>GI_0060</td>
<td>Products and operating conditions</td>
<td>SMT_0019</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
- radial

E1, E2 - IP65
EN 175301-803-A

E3A, E4A - IP67
AMP Junior Timer
- axial

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

www.aro-hytos.com

Subject to change - PVRM1-063_S108_Zen_02/2019
**Characteristics** measured at $v = 32 \text{ mm}^3/\text{s}$ (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)

**PVRM1-063/S*20**

![Graph showing pressure drop related to flow rate for PVRM1-063/S*20](image)

### Reduced pressure related to control signal
- **Port A**, range 0 - 32 bar (464 PSI), $Q = 0$ lpm (GPM)
- **Port P**, inlet pressure 50 bar (730 PSI)

**PVRM1-063/S*32**

### Pressure drop related to flow rate

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

![Graph showing pressure drop related to flow rate for A-T and P-A](image)

### Ordering Code

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

- **Valve cavity**
  - M20 x 1.5 / QE3

- **Model**
  - screw-in cartridge

- **Max. reduced pressure**
  - 20 bar (290 PSI) 20
  - 32 bar (464 PSI) 32

- **Supply voltage / max. current**
  - 12 V DC / max. 1 A 12
  - 24 V DC / max. 0.75 A 24

**Connector**

- 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

**Mesh screen**

- without mesh screen
- port f, 125 microns

**Surface treatment**

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

**Seals**

- NBR
- FPM (Viton)