Proportional Pressure Control Valve, Reducing - Relieving, Direct-Acting, Slip-In Style

**PP2P3-W3**

Size D20 • \( Q_{\text{max}} \ 30 \text{ l/min (8 GPM)} \) • \( p_{\text{max}} \ 50 \text{ bar (700 PSI)} \)

**Technical Features**

- Valve is primarily used in clutch control application typically in mobile transmissions
- 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 DT04-2P
- 12 or 24 V DC coils
- Compact design with reduced solenoid dimensions for production cost savings
- High flow capacity and low coil power consumption
- 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 valve in the form of a slip-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.

**Technical Data**

<table>
<thead>
<tr>
<th>Model Code</th>
<th>no mesh screen</th>
<th>with mesh screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Valve size / Cartridge cavity</th>
<th>D20 / W3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure (port P)</td>
<td>bar (PSI) 50 (730)</td>
</tr>
<tr>
<td>Max. reducing pressure (port A)</td>
<td>bar (PSI) 20 (290)</td>
</tr>
<tr>
<td>Max. flow rate P-A</td>
<td>l/min (GPM) 30 (7.9)</td>
</tr>
<tr>
<td>Fluid temperature range (NBR)</td>
<td>°C (°F) -30...90 (-22...194), +100 (212) short-time</td>
</tr>
<tr>
<td>Fluid temperature range (PPMV)</td>
<td>°C (°F) -20...90 (-4...194), +100 (212) short-time</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>°C (°F) -30...90 (-22...194), +100 (212) short-time</td>
</tr>
<tr>
<td>Response time at 100% signal</td>
<td>ms &lt; 50</td>
</tr>
</tbody>
</table>

**Solenoid data**

<table>
<thead>
<tr>
<th>Supply voltage</th>
<th>V</th>
<th>12 DC</th>
<th>24 DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. current</td>
<td>A</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Rated resistance at 20 °C (68 °F)</td>
<td>Ω</td>
<td>7.2±6.5%</td>
<td>11.2±6.5%</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>%</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Optimal PWM frequency</td>
<td>Hz</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Quenching diode</td>
<td>BZW06-28B</td>
<td>BZW06-33B</td>
<td></td>
</tr>
<tr>
<td>Enclosure type acc. to EN 60529**</td>
<td>IP 67 / IP 69K (acc.to terminal type)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>kg (lbs)</td>
<td>0.4 (0.88)</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions in millimeters (inches)**

**Connector type**

- E3, E4 - IP67
- AMP Junior Timer
- E12, E13 - IP67 / IP69K
- Deutsch DT04-2P
- E12A, E13A - IP67 / IP69K
- Deutsch DT04-2P

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**Subject to change · PP2P3-W3_5147_3en_10/2019**

[www.argo-hytos.com](http://www.argo-hytos.com)
**Ordering Code**

- **PP2P3 - W3/-**

Proportional pressure control valve, reducing - relieving, direct-acting, slip-in style

Valve cavity
D20 mm (0.79 in)

Max. reducing pressure
20 bar (290 PSI)
25 bar (363 PSI)

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

**Characteristics** measured at v = 32 mm²/s (156 SUS)

**Reduced pressure related to control signal**
- Port A, range 0 - 20 bar (290 PSI)
- Port A, range 0 - 25 bar (363 PSI)
- Port P, Inlet pressure 50 bar (730 PSI)

**Pressure drop related to flow rate**
- A-T, Valve coil de-energized (releasing function)
- P-A, Valve coil energized (reducing function)

**Reducing pressure related to flow rate**

- **Reducing Function P - A**

<table>
<thead>
<tr>
<th>Control signal</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>40%</td>
<td>60%</td>
<td>80%</td>
<td>100%</td>
</tr>
</tbody>
</table>

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

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

**Mesh screen**
- No designation without mesh screen
- SP-125

**Connector**
- E3 AMP Junior Timer - radial direction (2 pins; male)
- E4 E3 with quenching diode
- E12 Deutsch DT04-2P - radial direction
- E13 E12 with quenching diode
- E12A Deutsch DT04-2P - axial direction
- E13A E12A with quenching diode

Besides the shown, commonly used valve versions other special models are available. Contact our technical support for their identification, feasibility and operating limits.