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

**PP2P1-W3**

Size D20 • \( Q_{\text{max}} \) 20 l/min (5 GPM) • \( p_{\text{max}} \) 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 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>
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</tbody>
</table>

### Valve size / Cartridge cavity

| D20 / W3 | Max. operating pressure (port P) bar (PSI) | 50 (730) | Max. regulated pressure (port A) bar (PSI) | 20 (290) 25 (363) 32 (460) | Max. flow rate P-A l/min (GPM) | 20 (5.3) 20 (5.3) 16 (4.2) | Fluid temperature range (NBR) °C (°F) | -30...90 (-22...194), +100 (212) short-time | Fluid temperature range (FPM) °C (°F) | -20...90 (-4...194), +100 (212) short-time | Ambient temperature range °C (°F) | -30...90 (-22...194), +100 (212) short-time | Response time at 100% signal ms | < 50 |
|----------|-------------------------------------------|---------|-------------------------------------------|---------------------------|---------------------------------|-----------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|-----------------------------|-------|

### Solenoid data

<table>
<thead>
<tr>
<th>Supply voltage V</th>
<th>12 DC</th>
<th>24 DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. current A</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Rated resistance at 20 °C (68 °F) Ω</td>
<td>7.2±6.5 %</td>
<td>11.2±6.5 %</td>
</tr>
<tr>
<td>Optimal PWM frequency Hz</td>
<td>signal100</td>
<td></td>
</tr>
<tr>
<td>Quenching diode</td>
<td>BZW06-28B</td>
<td>BZW06-33B</td>
</tr>
<tr>
<td>Enclosure type acc. to EN 60529** (acc. to terminal type) IP 67 / IP 69K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight kg (Ibs)</td>
<td>0.4 (0.88)</td>
<td></td>
</tr>
</tbody>
</table>

### Data Sheet

Type General information GI_0060 Products and operating conditions Valve bodies In-line mounted SB_0018 SB-W3-* Cavity details SMT_0019 SB-W3-* Spare parts SP_8010

**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
- E12, E13 - IP67 / IP69K Deutsch DT04-2P
- E12A, E13A - IP67 / IP69K Deutsch DT04-2P

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Subject to change · PP2P1-W3_5125_3en_10/2019
Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

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

Reduced pressure related to control signal
Port A, range 0 - 20 bar (290 PSI)
Port A, range 0 - 32 bar (464 PSI)
Port P, Inlet pressure 50 bar (730 PSI)
Q = 0 lpm (GPM)

Reducing pressure related to flow rate
Reducing Function P - A

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

Valve cavity
D20 mm (0.79 in)

Max. regulated pressure
20 bar (290 PSI) 20
25 bar (363 PSI) 25
32 bar (464 PSI) 32

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

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