Technical Features

- Hardened precision parts
- High flow capacity and leak-free closing
- High transmitted hydraulic power, max. operating pressure 350 bar
- Normally closed version
- Available Manual Overrides
- Both ports may be fully pressurized
- Standard version zinc-coated with surface protection acc. to ISO 9227 (520 h salt spray)

Functional Description

2/2 screw-in cartridge, proportional, directional, solenoid operated, piloted, poppet type valve normally closed version. When the the coil is not energized, in flow direction 1 → 2, the valve works as a non-return valve. In flow direction 2 → 1 the valve is closed with minimal volume loss.

When the coil is energized, in flow direction 2 → 1 the valve controls flow in proportion to the current.

The valve is commonly used to hold a load with minimal volume loss and smooth control.

Technical Data

Valve size / Cartridge cavity: 3/4-16 UNF-2A / A2 (C-8-2)

Max. flow: l/min (GPM) 50 (13.2)

Max. operating pressure: bar (PSI) 350 (5076)

Nominal flow rate Qn at Δp=35 bar (508 PSI), direct. 2→1 l/min (GPM) 30 (7.9)

Flow losses at Δp=250 bar (3625 PSI), direct. 2→1 ml/min 0.3

Fluid temperature range (NBR): °C (°F) -30 ... +80 (-22 ... +176)

Fluid temperature range (FPM): °C (°F) -20 ... +120 (-4 ... +248)

Ambient temperature range: °C (°F) -30 ... +80 (-22 ... +176)

Service life: cycles 10^6

Weight - valve with solenoid: kg 0.257 (0.567)

Technical Data of the Proportional Solenoid

Nominal supply voltage: V 12 DC 24 DC

Limit current: A 0.475 0.950

Mean resistance value at 20 °C (68 °F): Ω 6.55±0.4 16.2±1.8

Duty cycle: % 100

Dither frequency: Hz 100

Datasheet Type

General information

Coil types

Valve bodies

Cavity details / Form tools

Spare parts

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

Flow characteristic - flow direction 2-1

at different pressure levels

Operating limits - flow direction 2-1

at different current levels

Control current Ic [%]

Pressure drop Δp=p2-p1 [bar (PSI)]
Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

### Pressure drop related to flow rate
Flow direction 2→1, Control current $I_c = 1.25 \cdot I_{\text{max}}$

![Pressure drop chart](chart1.png)

**Flow Q [l/min (GPM)]**

<table>
<thead>
<tr>
<th>Pressure drop $D_p$ [bar (PSI)]</th>
<th>Flow Q [l/min (GPM)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>(725)</td>
<td>(2.99)</td>
</tr>
<tr>
<td>(540)</td>
<td>(2.56)</td>
</tr>
<tr>
<td>(370)</td>
<td>(1.06)</td>
</tr>
<tr>
<td>(145)</td>
<td>(0.9)</td>
</tr>
</tbody>
</table>

Flow direction 1→2, Control current $I_c = 0 \text{ mA}$

![Pressure drop chart](chart2.png)

**Flow Q [l/min (GPM)]**

<table>
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Dimensions in millimeters (inches)

#### Connector type
- E1, E2 - IP65
  - EN 175301-803-A
- E3A, E4A - IP67
  - AMP Junior Timer - axial direction (2 pins; male)
- E12A, E13A - IP67 / IP69K
  - Deutsch DT04-2P - axial direction

Manual Override dimensions in millimeters (inches)

Designation M5 - socket head screw, size 2.5

![Socket head screw](socket1.png)

Designation M9 - without manual override

![Without override](override1.png)

In case of solenoid malfunction or power failure, the spool of the valve can be shifted by manual override as long as the pressure in port T does not exceed 25 bar (363 PSI). For alternative manual overrides contact our technical support.

Ordering Code

```
2/2 Proportional Directional valve, 
Solenoid Operated, Poppet Type, 
Piloted

Valve cavity
3/4-16 UNF-2A (C-8-2)

High performance

Functional symbol

Nominal flow rate
30 l/min at 35 bar (7.9 GPM at 508 PSI)

Rated supply voltage / max. current
12 V DC / 0.95 A
24 V DC / 0.475 A

Surface treatment
zinc-coated (ZnNi), ISO 9227 (520 h)

Seals
NBR
FPM (Viton)

Manual override
socket head screw, size 2.5
without manual override

Connector

SD3P-A2 / H 2L2 /30 - - B

Subject to change · SD3P-A2_5192_1en_09/2020