Solenoid operated spool valve cartridge

**Screw-in cartridge construction**
- 4/2-way with spring reset
- $Q_{\text{max}} = 38 \text{ l/min}$
- $P_{\text{max}} = 350 \text{ bar}$

**GENERAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation</td>
<td>4/2-spool valve</td>
</tr>
<tr>
<td>Construction</td>
<td>Direct operated</td>
</tr>
<tr>
<td>Mounting</td>
<td>Screw-in cartridge construction</td>
</tr>
<tr>
<td>Nominal size</td>
<td>7/8&quot;-14 UNF according to Wandfluh standard</td>
</tr>
<tr>
<td>Actuation</td>
<td>Switching solenoid</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-25...+70 °C</td>
</tr>
<tr>
<td>Weight</td>
<td>0.68 kg</td>
</tr>
<tr>
<td>MTTFd</td>
<td>150 years</td>
</tr>
</tbody>
</table>

**TYPE CODE**

- Spool valve, direct operated
- Slip-on coil Economy
- Screw-in cartridge 7/8"-14 UNF

**Designation of symbol**

- Nominal voltage $U_n$
  - 12 VDC $U_{12}$
  - 24 VDC $U_{24}$
  - 115 VAC $U_{115}$
  - 230 VAC $U_{230}$
  - without coil $U_X$

- Slip-on coil
  - Metal housing round $W$
  - Metal housing square $M$

- Connection execution
  - Connector socket EN 175301-803 / ISO 4400 $U$
  - Connector socket AMP Junior-Timer $U$ (only for $U_n \leq 75 \text{ VDC}$)
  - Connector Deutsch DT04 - 2P $U$ (only for $U_n \leq 75 \text{ VDC}$)

- Sealing material
  - NBR $D1$
  - FKM (Viton) $D1$

**ACTUATION**

- Actuation
  - Switching solenoid, wet pin push type, pressure tight

- Execution
  - W.E45 / 23 x 50 (Data sheet 1.1-182)
  - M.S45 / 23 x 50 (Data sheet 1.1-181)

- Connection
  - Connector socket EN 175301 – 803
  - Connector socket AMP Junior-Timer
  - Connector Deutsch DT04 – 2P
**ELECTRICAL SPECIFICATIONS**

- Protection class:
  - Connection execution D: IP65
  - Connection execution J: IP66
  - Connection execution G: IP67 and IP69K
- Relative duty factor: 100 % DF
- Switching frequency: 15'000 / h
- Service life time: $10^7$ (number of switching cycles, theoretically)
- Voltage tolerance: ± 10 % with regard to nominal voltage
- Standard nominal voltage:
  - 12 VDC, 24VDC, 115 VAC, 230 VAC
  - AC = 50 to 60 Hz, rectifier integrated in the connector socket

**HYDRAULIC SPECIFICATIONS**

- Working pressure: $p_{\text{max}} = 350$ bar
- Maximum volume flow: $Q_{\text{max}} = 38$ l/min
- Fluid: Mineral oil, other fluid on request
- Viscosity range: $12 \ mm^2/s$…$320 \ mm^2/s$
- Temperature range:
  - -25…+70 °C (NBR)
  - -20…+70 °C (FKM)
- Contamination efficiency: Class 20 / 18 / 14
- Filtration: Required filtration grade $\beta 10…16 \geq 75$, see data sheet 1.0-50

**PERFORMANCE SPECIFICATIONS**

- Oil viscosity $\eta = 30 \ mm^2/s$

**ACCESSORIES**

- Electric plug B (black): Article no. 219.2002
- Technical explanations: Data sheet 1.0-100
- Filtration: Data sheet 1.0-50
- Relative duty factor: Data sheet 1.1-430

**INSTALLATION NOTES**

- Mounting type: Screw-in cartridge $\frac{7}{8}"$-14 UNF
- Mounting position: Any, preferably horizontal
- Tightening torque:
  - $M_p = 60$ Nm Screw-in cartridge
  - $M_p = 5$ Nm knurled nut

**SURFACE TREATMENT**

- All parts are zinc-nickel coated

**SEALING MATERIAL**

- NBR or FKM (Viton) as standard, choice in the type code

**MANUAL OVERRIDE**

- None

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Note! Other electrical specifications see data sheet 1.1-182 (slip-on coil W) and 1.1-181 (slip-on coil M)
**DIMENSIONS**

4/2-way spool valve (spring reset)

**HYDRAULIC CONNECTION**

Cavity drawing according to Wandfluh standard

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**PARTS LIST**

<table>
<thead>
<tr>
<th>Position</th>
<th>Article</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>206.1...</td>
<td>W.E45 / 23 x 50</td>
</tr>
<tr>
<td></td>
<td>206.7...</td>
<td>M.S45 / 23 x 50</td>
</tr>
<tr>
<td>12</td>
<td>154.2701</td>
<td>Knurled nut M23 x 1,5 x 19,7</td>
</tr>
<tr>
<td>17</td>
<td>160.2222</td>
<td>O-ring ID 22,22 x 2,62 (NBR)</td>
</tr>
<tr>
<td>50</td>
<td>160.2187</td>
<td>O-ring ID 18,72 x 2,62 (NBR)</td>
</tr>
<tr>
<td>60</td>
<td>160.2156</td>
<td>O-ring ID 15,60 x 1,78 (NBR)</td>
</tr>
<tr>
<td>70</td>
<td>049.8196</td>
<td>Backup ring PTSM rd 14,5 x 17,4 x 1,4</td>
</tr>
<tr>
<td>80</td>
<td>160.2140</td>
<td>O-ring ID 14,00 x 1,78 (NBR)</td>
</tr>
<tr>
<td>90</td>
<td>049.8177</td>
<td>Back-up ring PTSM rd 12,4 x 15,3 x 1,4</td>
</tr>
<tr>
<td>100</td>
<td>160.2120</td>
<td>O-ring ID 12,42 x 1,78 (NBR)</td>
</tr>
<tr>
<td>110</td>
<td>049.8166</td>
<td>Backup ring PTSM rd 10,8 x 13,7 x 1,4</td>
</tr>
</tbody>
</table>

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**ATTENTION!**

For detailed cavity drawing and cavity tools see data sheet 2.13-1057