Solenoid Operated Poppet Valve, Pilot Operated, Modular

ROE3-062S2M

Size 04 (D02), 06 (D03) • Q_{max} 25 l/min (6.6 GPM) • p_{max} 250 bar (3600 PSI)

Technical Features

› Valve built-in a modular block with subplate interface acc. to ISO 4401, DIN 24340 (CETOP 02 and 03) or an in-line body
› All ports may be fully pressurized with maximum pressure 250 bar
› Valve closes leak-free in specified flow direction
› Precisely manufactured parts and hardened poppet
› Normally closed (NC) version
› Optional type of manual override
› Coils interchangeable across ROE / RPE3-04 product line
› In the standard version, the valve body is phosphated and the valve is zinc-coated for 240 h protection acc. to ISO 9227

Functional Description

Solenoid operated poppet valve, pilot operated, built-in a modular block size (DN) 04 or 06, designed for creating hydraulic circuits by vertical grouping. The second variant is the valve in an in-line body. The one-directional valve is used for leak-free closing in specified flow direction (see Functional Symbols).

Technical Data

<table>
<thead>
<tr>
<th>Valve size / Cartridge cavity</th>
<th>04 (D02) / QG2</th>
<th>06 (D03) / QG2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. flow</td>
<td>l/min (GPM)</td>
<td>25 (6.6)</td>
</tr>
<tr>
<td>Max. operating pressure</td>
<td>bar (PSI)</td>
<td>250 (3630)</td>
</tr>
<tr>
<td>Fluid temperature range (NBR)</td>
<td>°C (°F)</td>
<td>-30 ... +80 (-22 ... +176)</td>
</tr>
<tr>
<td>Fluid temperature range (FPM)</td>
<td>°C (°F)</td>
<td>-20 ... +90 (-4 ... +122)</td>
</tr>
<tr>
<td>Max. switching frequency</td>
<td>1/h</td>
<td>15 000</td>
</tr>
<tr>
<td>Supply voltage tolerance</td>
<td>%</td>
<td>AC, DC: ± 10</td>
</tr>
<tr>
<td>Weight - valve with 1 solenoid</td>
<td>kg (lbs)</td>
<td>Modular 1.2 (2.5)</td>
</tr>
<tr>
<td>Weight - valve with 2 solenoids</td>
<td>kg (lbs)</td>
<td>Modular 1.7 (3.6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S2</td>
</tr>
<tr>
<td>2</td>
<td>R1, R2, R3, R4</td>
</tr>
<tr>
<td>3</td>
<td>R1, R2, R3, R4</td>
</tr>
</tbody>
</table>

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

Operating limits

Operating limits for maximum hydraulic power at rated temperature and supplied with voltage equal to 90% of the nominal value

Pressure drop related to flow rate

In-line body design R*
Characteristics measured at $v = 32 \text{ mm/s} (156 \text{ SUS})$

Pressure drop related to flow rate

In-line body design M*

![Graph showing the pressure drop related to flow rate with key points labeled S, T, A, B, OFF, and ON.]

<table>
<thead>
<tr>
<th>Model</th>
<th>Direction</th>
<th>Solenoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD04</td>
<td>T-A</td>
<td>OFF</td>
</tr>
<tr>
<td>MX04</td>
<td>B-A</td>
<td>OFF</td>
</tr>
<tr>
<td>MA04</td>
<td>A1-A2</td>
<td>OFF</td>
</tr>
<tr>
<td>MD04</td>
<td>A-T</td>
<td>ON</td>
</tr>
<tr>
<td>MA04</td>
<td>A2-A1</td>
<td>ON</td>
</tr>
<tr>
<td>MX04</td>
<td>B-A</td>
<td>ON</td>
</tr>
</tbody>
</table>

Ordering Code

2/2 Solenoid Operated
Poppet Valve, Pilot Operated, Modular

Valve size

Spool symbols

normally closed (NC)

Model modular valve, connection A2-A1
modular valve, connection B2-B1
modular valve, connection A-B
modular valve, connection A-T
modular valve, connection B-T
modular valve, connection B2-B1, A2-A1
modular valve, connection B-T, A-T
modular valve, connection P-T
modular valve, connection P2-P1
in-line valve, 2 ports, thread G3/8
in-line valve, 2 ports, thread G1/2
in-line valve, 2 ports, thread 3/4-16, (SAE 8)
in-line valve, 2 ports, thread 7/8-14 (SAE 10)
in-line valve, 2 ports, thread G3/8, G1/4

*only available for size 06 (D03)

Modular plate size

ISO 4401-02-01-0-05, DIN 24340 (CETOP 02), size 04 04
ISO 4401-03-02-0-05, DIN 24340 (CETOP 03), size 06 06

No designation Surface treatment
standard
A zinc-coated (ZnCr-3), ISO 9227 (240 h)
B zinc-coated (ZnNi), ISO 9227 (520 h)

Seals
NBR FPM (Viton)

No designation Manual override
standard - without manual override
with external hexagon 14

Connector

EN 175301-803-A
12 V DC / 2.41 A
14 V DC / 1.66 A
21 V DC / 1.31 A
24 V DC / 1.15 A
27 V DC / 0.89 A
205 V DC / 0.12 A
24 V AC / 1.44 A / 50 (60) Hz
120 V AC / 0.22 A / 50 (60) Hz
230 V AC / 0.12 A / 50 (60) Hz

The AC coils correspond to E5.

Rated supply voltage of solenoids (at the coil terminals)

01200 12 V DC / 2.41 A
01400 14 V DC / 1.66 A
02100 21 V DC / 1.31 A
02400 24 V DC / 1.15 A
02700 27 V DC / 0.89 A
20500 205 V DC / 0.12 A
02450 24 V AC / 1.44 A / 50 (60) Hz
12060 120 V AC / 0.22 A / 50 (60) Hz
23050 230 V AC / 0.12 A / 50 (60) Hz

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Subject to change · ROE3-062S2/M_4072_5en_05/2020
Functional Symbols

Model MA  Model MB  Model MX  Model MD  Model ME  Model MG

P1 A1 B1 T1  P1 A1 B1 T1  P1 A1 B1 T1  P1 A1 B1 T1  P1 A1 B1 T1  P1 A1 B1 T1

Model MC  Model MF  Model MP  Model R1(R3), R2(R4)  Model R7

P1 A1 B1 T1  P1 A1 B1 T1  P1 A1 B1 T1  P1 A1 B1 T1  P1 A1 B1 T1

Solenoid Coil in millimeters (inches)

E1 - EN 175301-803-A  E3 - AMP Junior Timer  E3A - AMP Junior Timer  E5 - EN 175301-803-A
E2 - E1 with quenching diode  - radial direction  - axial direction  and integrated rectifier
Protection degree IP65  Protection degree IP67  Protection degree IP67  Protection degree IP65

E8 - Loose conductors (two insulated cables)  E12A - Deutsch DT04-2P
E9 - (E8 with quenching diode)  E13A - E12A with quenching diode
Protection degree IP65

Protection degree IP67 / IP69K

Note:
A = Standard 300 mm (11.81 in), other sizes on demand

The indicated IP protection level is only reached with a properly mounted connector.

Manual Override in millimeters (inches)

No designation  Designation N5
- standard - without manual override  - with external hexagon 14

- 78 (3.07)  OFF 89 (3.50)
- 92 (3.62)  ON
### Dimensions in millimeters (inches)

<table>
<thead>
<tr>
<th>Model</th>
<th>K</th>
<th>M</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>G3/8</td>
<td>(223)</td>
<td>(0.91)</td>
<td>12 (0.47)</td>
<td>15 (0.59)</td>
</tr>
<tr>
<td>R2</td>
<td>G1/2</td>
<td>(228)</td>
<td>(1.10)</td>
<td>14 (0.55)</td>
<td>16 (0.61)</td>
</tr>
<tr>
<td>R3</td>
<td>3/4-16UNF-2B (SAE 8)</td>
<td>(220.6)</td>
<td>(0.81)</td>
<td>(230) (1.18)</td>
<td>14.3 (0.56)</td>
</tr>
<tr>
<td>R4</td>
<td>7/8-14UNF-2B (SAE 10)</td>
<td>(223.9)</td>
<td>(0.94)</td>
<td>(234) (1.34)</td>
<td>16.7 (0.66)</td>
</tr>
</tbody>
</table>

### Models R1 (R2) Models R3 (R4)

### Models MA, MX, MD, MG, MP

### Models MB, ME

### Models MC, MF