4/2 and 4/3 Directional Control Valve, Solenoid Operated, Lightline

RPEL1-06

Size 06 (D03)  •  Q_max 50 l/min (13 GPM)  •  p_max 250 bar (3600 PSI)

Technical Features

› Direct acting directional control valve with subplate mounting interface acc. to ISO 4401, DIN 24340 (CETOP 03)
› Cost-effective Lightline design with reduced solenoid dimensions, suitable for applications with lower required power
› Three chamber valve design for high transmitted hydraulic power
› Wide range of solenoid electrical terminas and supply voltage types for electromagnets
› The coil, fastened to the core tube with a retaining nut, can be rotated by 360° to suit the available space
› Wide range of interchangeable spools
› In the standard version, the valve housing is phosphated and steel parts zinc-coated for 240 h protection in NSS acc. to ISO 9227.
› Enhanced surface protection for mobile sector available (520 h in NSS, ISO 9227)

Technical Data

Valve size 06 (D03) | Max. flow Q [l/min (GPM)] | 50 (13.2)
| Max. operating pressure at ports P, A, B p [bar (PSI)] | 250 (3630)
| Max. operating pressure at port T | 250 (3630)
| Fluid temperature range (NBR) °C (°F) | -30 ... +80 (-22 ... +176)
| Fluid temperature range (FPM) °C (°F) | -50 ... +80 (-67 ... +176)
| Supply voltage tolerance % DC: ±10
| Max. switching frequency 1/h DC: 10 000
| Switching time at ν = 32 mm/s (156 SUS) ON ms DC: 30 ... 50
| OFF ms DC: 30 ... 50
| Weight kg (lbs) - valve with 1 solenoid 1.3 (2.9)
| - valve with 2 solenoids 1.6 (3.5)

Datasheet Type

General information GL_0060 Products and operating conditions
Coil types / connectors C_8007 / K_8008 C19B*/K*
Mounting interface SMT_0019 Size 06
Spare parts SP_8010
Subplates DP_0002 DP*-06

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

Operating limits

Operating limits for maximum hydraulic power at rated temperature and supply voltage equal to 90% nominal.

Pressure drop related to flow rate

For operating limits under conditions and flow directions other than shown contact our technical support.
**Ordering Code**

RPEL1-06

- 4/2 and 4/3 directional control valve, solenoid operated, Lightline

**Valve size**

- Number of valve positions
  - two positions: 2
  - three positions: 3

**Spool symbols**

- see the table “Spool Symbols”

**Rated supply voltage of solenoids**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 V DC</td>
<td>2.45 A</td>
<td>01200</td>
</tr>
<tr>
<td>14 V DC</td>
<td>1.70 A</td>
<td>01400</td>
</tr>
<tr>
<td>24 V DC</td>
<td>1.15 A</td>
<td>02400</td>
</tr>
<tr>
<td>27 V DC</td>
<td>0.89 A</td>
<td>02700</td>
</tr>
<tr>
<td>48 V DC</td>
<td>0.55 A</td>
<td>04800</td>
</tr>
</tbody>
</table>

**Seals**

- NBR
- FPM (Viton)

**Manual override**

- standard
- rubber boot protected

**Connector**

- E1 with quenching diode
- E2 with quenching diode
- E3 with quenching diode
- E3A with quenching diode
- E4 with quenching diode
- E4A with quenching diode
- E8 with quenching diode
- E9 with quenching diode
- E12A with quenching diode
- E13A with quenching diode

- For directional valves with two solenoids, one solenoid must be de-energized before the other solenoid can be charged.
- For AC voltage supply use coils with connector type E5.
- For other solenoid voltage supply options see data sheet C_8007.
- The solenoid operated valves are delivered without connectors. For available connectors see data sheet K_8008.
- The orifice to the P port can be ordered separately, see data sheet SP_8010.
- Mounting bolts M5 x 45 DIN 912-10.9 or studs must be ordered separately. Tightening torque is 8.9 Nm (6.56 lbf.ft).
- Besides the commonly used valve versions shown other special models are available. Contact our technical support for their identification, feasibility and operating limits.

**Spool Symbols**

<table>
<thead>
<tr>
<th>Type</th>
<th>Symbol</th>
<th>Interposition</th>
<th>Type</th>
<th>Symbol</th>
<th>Interposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z11</td>
<td></td>
<td></td>
<td>Z51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C11</td>
<td></td>
<td></td>
<td>H51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H11</td>
<td></td>
<td></td>
<td>Z11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y11</td>
<td></td>
<td></td>
<td>X11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L21</td>
<td></td>
<td></td>
<td>C11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R11</td>
<td></td>
<td></td>
<td>H11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y51</td>
<td></td>
<td></td>
<td>Y11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C51</td>
<td></td>
<td></td>
<td>J15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Solenoid Coil in millimeters (inches)

<table>
<thead>
<tr>
<th>E1</th>
<th>E3</th>
<th>E3A</th>
<th>E12A</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 175301-803-A</td>
<td>AMP Junior Timer</td>
<td>AMP Junior Timer</td>
<td>Deutsch DT04-2P</td>
</tr>
<tr>
<td>E2</td>
<td>E4</td>
<td>E4A</td>
<td>E13A</td>
</tr>
<tr>
<td>E1 with quenching diode</td>
<td>- radial direction</td>
<td>- axial direction</td>
<td>- axial direction</td>
</tr>
</tbody>
</table>

Protection degree IP65

![Diagram of E1, E3, E3A, E12A in millimeters (inches)]

### Manual Override in millimeters (inches)

<table>
<thead>
<tr>
<th>No designation</th>
<th>Designation M2</th>
</tr>
</thead>
<tbody>
<tr>
<td>- standard</td>
<td>- rubber boot protected</td>
</tr>
</tbody>
</table>

![Diagram of manual override](image)

**Note:**
- A = Standard 300 mm (11.81 in), other lengths on demand

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.

The indicated IP protection level is only achieved if the connector is properly mounted.
Valve Dimension in millimeters (inches)

RPEL1-063x/xE1*
Valve with two solenoids
Spool symbols
Z11, C11, H11, Y11, L21, J15

RPEL1-062x/xE1*
Valve with one solenoid „a“
Spool symbols
R11, Y51, C51, Z51, H51

RPEL1-062x/xE1*
Valve with one solenoid „b“
Spool symbols
Z11, X11, C11, H11, Y11

Mounting screws 0.9 Nm (7 lbf.ft)
M5x45 DIN 912-10.9