Proportional pressure control valve EPDRD3-05

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Characteristics

- 3-way proportional pressure control valve in spool design
- screw-in valve for cavity T-11A or
- screw-in valve for cavity C-10-3
- minimum oil leakage
- low vibration
- maintenance-free
- degressive version available
- also usable as 2-way proportional pressure reducing valve (after consultation with WEBER-HYDRAULIK ValveTech)
Technical Data

**Hydraulic**
- Operating pressure max.: 315 bar, with aluminium manifolds: 210 bar
- Pressure at port 3 (T) < pressure at port 1 (A)
- Flow rate: 12 l/min
- Pressure setting range: see type code
- Flow direction: see symbol
- Hydraulic fluid: mineral oil according to DIN 51524, other hydraulic fluids upon request
- Viscosity range: 10 - 350 cSt
- Filtration: oil cleanliness according to ISO 4406 (1999)
- Repeatability: < 3 % with optimized PWM-signal*
- Hysteresis: < 5 % with optimized PWM-signal*

* at 20 % to 100 % of the nominal valve current.

**NOTE**
The pressure on port 3 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.

**Mechanic**
- Design: EEPDRDS screw-in valve T-11A, EEPDRDM screw-in valve C-10-3, or EPDRDSA screw-in valve in mounting plate NG 6, direct operated
- Size: 05
- Fluid temperature: -25 °C to +70 °C
- Ambient temperature: -25 °C to +50 °C
- Storage temperature: -30 °C to +60 °C (non-condensing)
- Installation position: any, preferably horizontal
- Maximum acceleration: 5 g, crossways
- Weight: EEPDRDS3-05: 0,76 kg, EEPDRDM3-05: 0,86 kg, EPDRDSA3-05/06: 1,07 kg
- Material: valve parts: steel, mounting plate: aluminium, seals: NBR, optional Viton
- Surface protection: exterior parts: zinc coated steel, partially burnished mounting plate: anodized aluminium

**Electric**
- Nominal voltage: 12 V DC, 24 V DC
- Nominal valve current: 1,7 A (12 V), 0,7 A (24 V)
- Nominal resistance (R20): 4 Ω (12 V), 25 Ω (24 V)
- Power consumption: 16 W at nominal valve current
- Shifting time: 100 % ED
- Control command: PWM-signal
- PWM-frequency: typically 140 Hz (depending on application)
- Protection class: IP65 with correctly mounted and locked mating connector
- Electric termination: Electric plug according to DIN EN 175301-803 shape A, AMP Junior Timer, unterminated wire
- Electronic controllers: see chapter 6 "electronics and sensors" as well as our online catalogue at www.weber-hydraulik.com

NOTE: The pressure on port 3 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.
Performance

Pressure drop diagram (p/I) EPDRD3-05 at Q = 0 l/min (static)

Pressure drop diagram (p/I) EPDRD3-05 degressive version at Q = 0 l/min (static)

Pressure drop diagram (p/Q) EPDRD3-05 with 115 bar spool at various currents

Pressure drop diagram (p/Q) EPDRD3-05 degressive version with 115 bar spool at various currents

Pressure drop diagram (Δp/Q) EPDRD3-05 at I = 0 mA (currentless)

Pressure drop diagram (Δp/Q) EPDRD3-05 degressive version at I = 100% (full current)

Test conditions

Oil: HLP 32, temperature: 40 °C (~32 cSt)
Higher viscosities change the characteristic curves.
**Dimensions**

*Screw-in valve*

**EEPDRDS3-05**

- **Installation torque**: 3 Nm
  - SW 3

- **Electric plug according to DIN EN 175301-803 shape A**

- **Installation torque**: 45 Nm
  - SW 22

- **Locating shoulder T-11A**

**Cavity T-11A**

**NOTE** For a detailed drawing of the cavity please see chapter 11 “general information” or our online catalogue at [www.weber-hydraulik.com](http://www.weber-hydraulik.com).

**NOTE** For appropriate manifolds see chapter 10 “connecting plates and manifolds” as well as our online catalogue at [www.weber-hydraulik.com](http://www.weber-hydraulik.com).

**NOTE** The valve is also available as degressive version.
Dimensions

Screw-in valve
EEPDRDM3-05

installation torque 3 Nm
SW 3

electric plug according to
DIN EN 175301-803 shape A

installation torque 45 Nm
SW 22

locating shoulder C-10-3

Cavity C-10-3

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE We also provide a variety of suitable manifolds for C-10-3. Please contact us for further assistance.

NOTE The valve is also available as degressive version.
Dimensions

**Screw-in valve**
EEPDRDS3-05

*degressive*

Do not adjust!

- **Installation torque 3 Nm**
  - SW 3

- **Electric plug according to**
  - DIN EN 175301-803 shape A

- **Installation torque 45 Nm**
  - SW 22

- **Locating shoulder T-11A**

**NOTE**
For a detailed drawing of the cavity please see chapter 11 “*general information*” or our online catalogue at [www.weber-hydraulik.com](http://www.weber-hydraulik.com).

**NOTE**
For appropriate manifolds see chapter 10 “*connecting plates and manifolds*” as well as our online catalogue at [www.weber-hydraulik.com](http://www.weber-hydraulik.com).

**NOTE**
The degressive version of the valve is also available as EEPDRDM3-05 (with cavity C-10-3).
ValveTech | 030120_EPDRD3_05_e

Proportional pressure control valve

**Type code**

<table>
<thead>
<tr>
<th>Design</th>
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<tbody>
<tr>
<td>EEPDRDS3-05</td>
</tr>
<tr>
<td>EEPDRDM3-05</td>
</tr>
<tr>
<td>EPDRDAS3-05/06</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Nominal voltage</th>
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<tbody>
<tr>
<td>12V 12V DC</td>
</tr>
<tr>
<td>24V 24V DC</td>
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</table>

**Revision**

**Special design**

- without
- degressive**
- DEG

**Pressure setting range**

<table>
<thead>
<tr>
<th>Pressure setting range</th>
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<tbody>
<tr>
<td>30 30 bar</td>
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<tr>
<td>45 45 bar</td>
</tr>
<tr>
<td>60 60 bar</td>
</tr>
<tr>
<td>75 75 bar</td>
</tr>
<tr>
<td>115 115 bar</td>
</tr>
<tr>
<td>175 175 bar</td>
</tr>
<tr>
<td>250 250 bar</td>
</tr>
<tr>
<td>315 315 bar</td>
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</table>

**Electric termination***

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<tr>
<th>Electric termination***</th>
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<tbody>
<tr>
<td>DIN</td>
</tr>
<tr>
<td>AMP AMP Junior Timer (only 24 V version)</td>
</tr>
<tr>
<td>K unterminated wire 500 mm (only 24 V version)</td>
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</tbody>
</table>

**Manual override**

- without
- lockable manual override with hexagon socket and lock nut (FNH)
- manual override with push knob (DNH)

**Seals**

- NBR
- Viton V

* aluminium manifolds are approved for max. operating pressure of 210 bar
** for degressive versions no additional manual override selectable
*** DEUTSCH plug on request

**NOTE FOR FNH**

The lockable manual override with hexagon socket and lock nut (FNH) could be used to override the pressure control function of the valve. Be aware that the valve can not fulfil its pressure control function if the FNH is screwed in and locked. This can lead to excessive pressure and cause breakage or failure of the components if no parallel pressure relief protection is present.

The FNH should never be screwed in and locked when used in conjunction with a running system!
## Accessories and additional information

**Accessories/ spare parts**

<table>
<thead>
<tr>
<th>Article:</th>
<th>Article number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket connector DIN EN 175301-803, shape A, black</td>
<td>149.0007</td>
</tr>
<tr>
<td>Seal kit T-11-A (NBR)</td>
<td>405.0038</td>
</tr>
<tr>
<td>Seal kit T-11-A (Viton)</td>
<td>405.0039</td>
</tr>
<tr>
<td>Seal kit C-10-3 (NBR)</td>
<td>405.0063</td>
</tr>
<tr>
<td>Seal kit C-10-3 (Viton)</td>
<td>405.0096</td>
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**NOTE**

For the appropriate electronic controllers, see chapter 6 „electronics and sensors“ as well as our online catalogue at [www.weber-hydraulik.com](http://www.weber-hydraulik.com).

**Manual**

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „general operating manual“ or will be provided upon request.