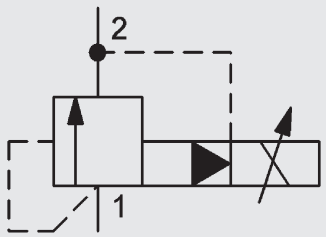


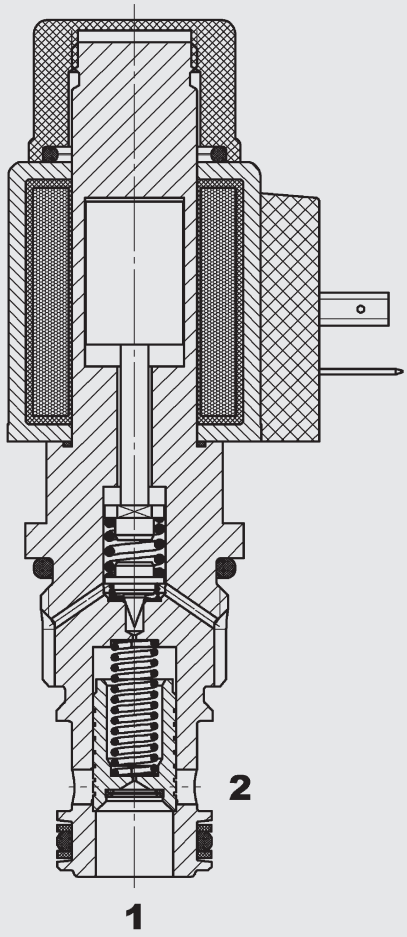

200 l/min
350 bar

# Proportional Pressure Relief Valve Spool Type, Pilot-Operated SAE-12 Cartridge – 350 bar

UNF

PDB12P-01

## FUNCTION




The PDB12P is a pilot-operated, spool type proportional pressure relief valve. If pressure at port 1 exceeds the setting defined by the electrical signal, the pilot poppet opens and oil flows from behind the main spool to tank port 2. The resulting pressure differential causes the main spool to lift against the return spring and allows flow from port 1 to port 2. As a function of the electrical signal, the relief pressure at port 1 can be changed steplessly.

## FEATURES

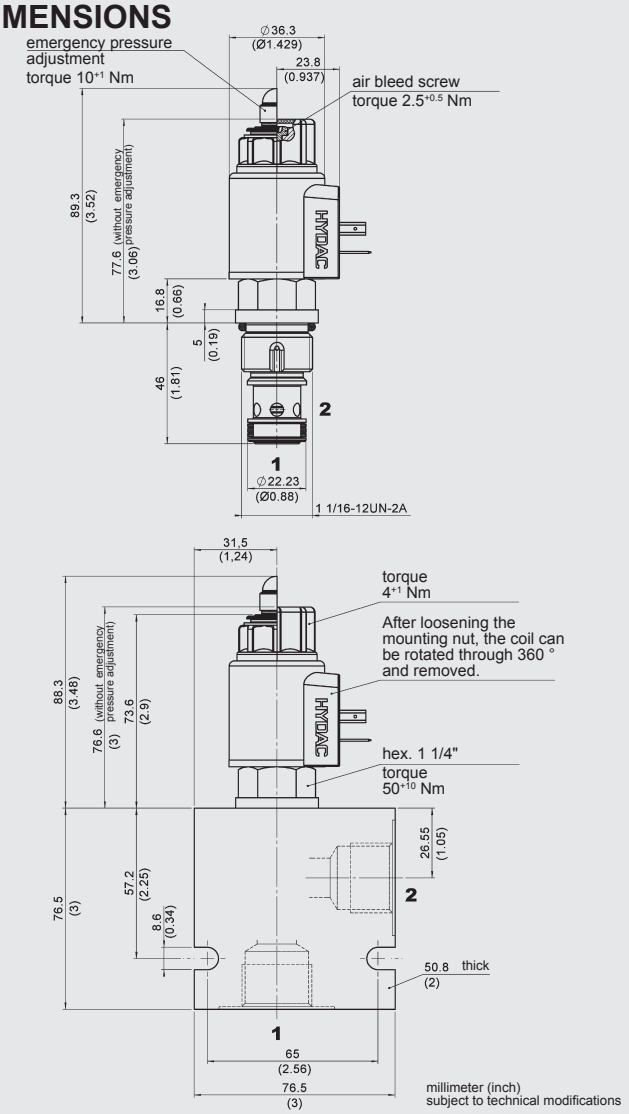
- External surfaces zinc-plated and corrosion-proof
- Hardened and ground internal valve components to ensure minimal wear and extended service life
- Coil seals protect the solenoid system
- Excellent stability throughout the entire flow range
- Excellent dynamic performance
- Low pressure drop due to CFD optimized flow path
- Screen-protected metering orifice enhances safety

## SPECIFICATIONS

| | | |
|---|---|---|
| Operating pressure: | max. 350 bar | |
| Nominal flow: | max. 200 l/min | |
| Operating pressure ranges: | up to 60 bar<br>up to 230 bar<br>up to 350 bar | |
| Media operating temperature range: | min. -20 °C to max. +100 °C | |
| Ambient temperature range: | min. -20 °C to max. 60 °C | |
| Operating fluid: | Hydraulic oil to DIN 51524 Part 1 and 2 | |
| Viscosity range: | min. 7.4 mm²/s to max. 420 mm²/s | |
| Filtration: | Class 18/16/13 to class 19/17/14 to ISO 4406 or cleaner | |
| $MTTF_d$: | 150 years (see "Conditions and instructions for valves" in brochure 5.300) | |
| Installation: | No orientation restrictions | |
| Materials: | Valve body: | free-cutting steel |
| | Spool: | hardened and ground steel |
| | Seals: | NBR (standard)<br>FKM (optional, media temperature range -20 °C to +120 °C) |
| | Back-up rings: | PTFE |
| | Coil: | steel / polyamide |
| Cavity: | FC12-2 | |
| Weight: | Valve complete | 0.55 kg |
| | Coil only | 0.23 kg |
| **Electronic data:** | | |
| Control currents: | 1050 mA, 8.8 Ohm (24 Volt)<br>2100 mA, 2.2 Ohm (12 Volt) | |
| Internal leakage: | < 0.5 l/min at 350 bar | |
| Dither frequency: | approx. 160 Hz - 250 Hz | |
| Response time: | Energized:<br>De-energized: | approx. 50 ms<br>approx. 30 ms |
| Hysteresis with dither: | 2 - 4% of $I_{nom}$ | |
| Repeatability: | ≤ 1.5 % of $I_{nom}$ | |
| Reversal error: | ≤ 2 % of $I_{nom}$ | |
| Response sensitivity: | ≤ 1 % of $I_{nom}$ | |
| Coil type: | Coil…-40-1836 | |

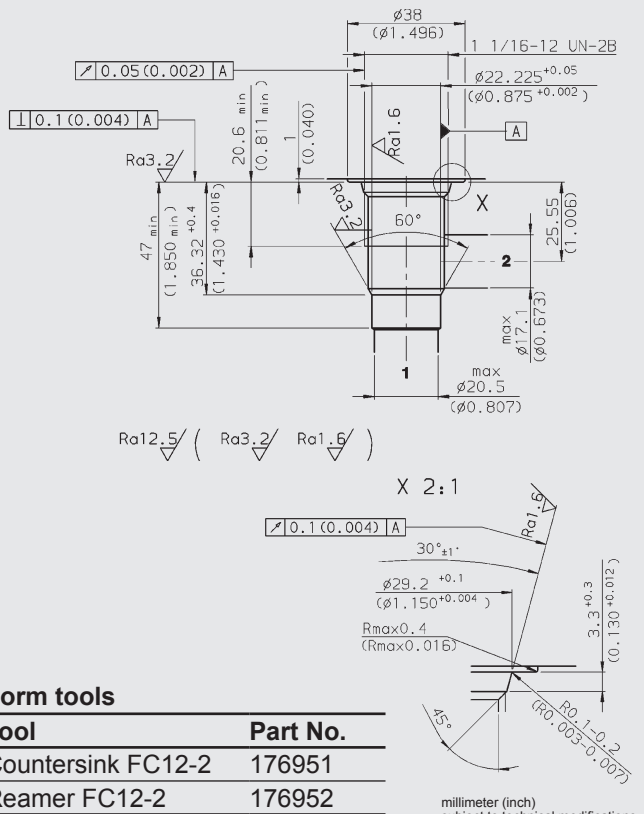
The PDB12P can also be supplied with an emergency pressure adjustment (version –01M). This allows a manual pressure adjustment of the valve if the electrical signal is interrupted. This adjustment should be used only in the case of electrical failure since the manual setting would be additive to the electrical setting and the system could be damaged when power is restored.

# DIMENSIONS




# CAVITY

FC12-2




## Form tools

| Tool | Part No. |
|---|---|
| Countersink FC12-2 | 176951 |
| Reamer FC12-2 | 176952 |

# MODEL CODE

**PDB12P-01 M - C - N - 330 - 24 PG - 8.8**

**Basic model**
Proportional pressure relief valve, UNF

**Manual override**
no details = without manual override
M = manual override

**Body and ports***
C = cartridge only
SB6 = G3/4 ports, steel body
AB6 = G3/4 ports, aluminium body

**Seals**
N = NBR
V = FKM

**Pressure range**
87 = up to 60 bar ( 870 PSI)
330 = up to 230 bar (3300 PSI)
500 = up to 350 bar (5000 PSI)

**Coil voltage**
12 = 12 V DC (2.2 Ohm)
24 = 24 V DC (8.8 Ohm)

**Coil connectors (type 40-1836)**
DC: PG = DIN connector to EN175301-803
PU = AMP Junior Timer, 2-pole, axial
PL = 2 flying leads, 457 mm long; 0.75 mm²
PN = Deutsch connector, 2-pole, axial, DT04-22P-EF 04
Other connectors on request

**Coil resistance**
2.2 = 2.2 Ohm (12V)
8.8 = 8.8 Ohm (24V)

## Standard models

| Model code | Part No. |
|---|---|
| PDB12P-01-C-N-87-12PG-2.2 | 3144462 |
| PDB12P-01-C-N-330-12PG-2.2 | 3144463 |
| PDB12P-01-C-N-500-12PG-2.2 | 3144464 |
| PDB12P-01-C-N-87-24PG-8.8 | 3144465 |
| PDB12P-01-C-N-330-24PG-8.8 | 3144466 |
| PDB12P-01-C-N-500-24PG-8.8 | 3144467 |

## *Standard in-line bodies

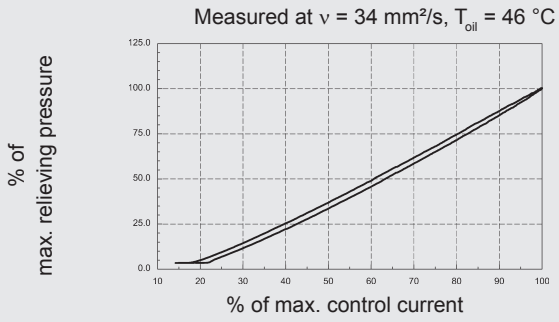
| Code | Part No. | Material | Ports | Pressure |
|---|---|---|---|---|
| FH122-SB6 | 3053782 | Steel, zinc-plated | G3/4 | 420 bar |
| FH122-AB6 | 3053843 | Aluminium, anodized | G3/4 | 210 bar |

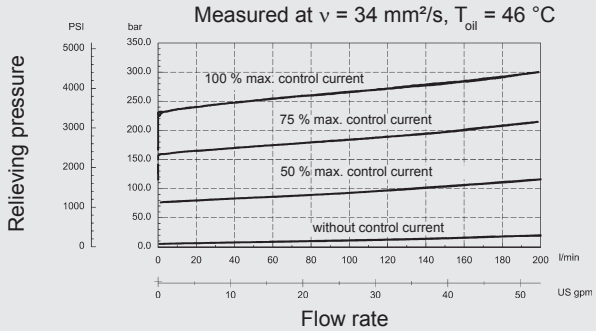
Other bodies on request

## Seal kits

| Code | Material | Part No. |
|---|---|---|
| FS122-N SEAL KIT | NBR | 3071298 |
| FS122-V SEAL KIT | FKM | 3071299 |

# PERFORMANCE




## NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.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