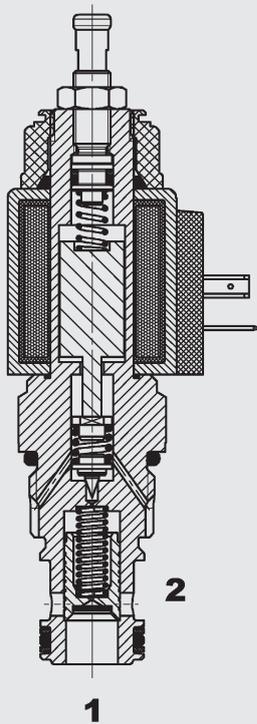


FUNCTION



The PDB12PZ 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.

The valve is inversely controlled: with decreasing control current the pilot poppet closes, the main stage follows the pilot stage and a counter-pressure is created at port 1, e.g. to drive a fan motor.

The maximum pressure can be pre-set mechanically.

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

PDB12PZ-08/-09

FEATURES

- Reduces cavitation
- External surfaces zinc-plated and corrosion-proof
- Good stability across the whole pressure and flow range
- Excellent dynamic performance
- Hardened and ground internal valve components to ensure minimal wear and extended service life
- Coil seals protect the solenoid system
- Low pressure drop due to CFD optimized flow path
- Adjustable throughout flow range

SPECIFICATIONS

Operating pressure:	max. 350 bar (port 1) / 50 bar (port 2)
Nominal flow:	max. 200 l/min
Internal leakage:	< 0.5 l/min at 80% of p_{nom}
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 mm ² /s to max. 420 mm ² /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) FKM (optional, media temperature range -20 °C to +120 °C) Back-up rings: PTFE Coil: steel / polyamide
Cavity	FC12-2
Weight:	Valve complete 0.58 kg Coil only 0.22 kg

Electronic data:

Control currents:	1050 mA, 8.8 Ohm (24 Volt) 2100 mA, 2.2 Ohm (12 Volt)
Dither frequency:	200 Hz
Hysteresis with dither:	2 - 4% of I_{nom}
Repeatability:	≤ 2% of p_{nom}
Reversal error:	≤ 2 % of I_{nom}
Response sensitivity:	≤ 1 % of I_{nom}
Type of coil:	Coil (12 or 24) P ...-40-1836

NOTE

In order to achieve optimal function, any trapped air should be vented using the air bleed screw on the face of the pole tube.

MODEL CODE

PDB 12PZ-08-C-N-330-V-330-24 PG-8.8

Basic model

Proportional pressure relief valve

Type

08 = higher basic Δp : improved opening and closing characteristics (pressure range 330 - 500)

09 = lower basic Δp : main application = fan control (pressure ranges 087 - 330)

Body and ports*

C = cartridge only

Seals

N = NBR (standard)

V = FKM

Pressure range

087 = 4 - 60 bar (870 PSI)

140 = 4 - 96 bar (1400 PSI)

330 = 4 - 228 bar (3300 PSI)

500 = 4 - 345 bar (5000 PSI)

Type of adjustment

V = adjustable using tool

Setting

No details = no setting, spring relaxed

330 = 230 bar, specific cracking pressure (3300 PSI)

Coil voltage

DC voltages:

12 = 12 V DC (2.2 Ohm)

24 = 24 V DC (8.8 Ohm)

Coil connectors

DC: DG = DIN connector to EN175301-803

DK = Kostal threaded connection M27 x 1

DL = 2 flying leads, 457 mm long, 0.75 mm²

DN = Deutsch connector, 2-pole, axial

DT = AMP Junior Timer, 2-pole, radial

Coil resistance

2.2 = 2.2 Ω (12 V)

8.8 = 8.8 Ω (24 V)

Standard models

Model code	Part No.
PDB12PZ-09-C-N-087V087-12PG-2.2	3370981
PDB12PZ-09-C-N-087V087-24PG-8.8	3370980
PDB12PZ-08-C-N-330V330-12PG-2.2	3370977
PDB12PZ-08-C-N-330V330-24PG-8.8	3370978
PDB12PZ-08-C-N-500V500-12PG-2.2	3370953
PDB12PZ-08-C-N-500V500-24PG-8.8	3370976

Other models on request

*Standard in-line bodies

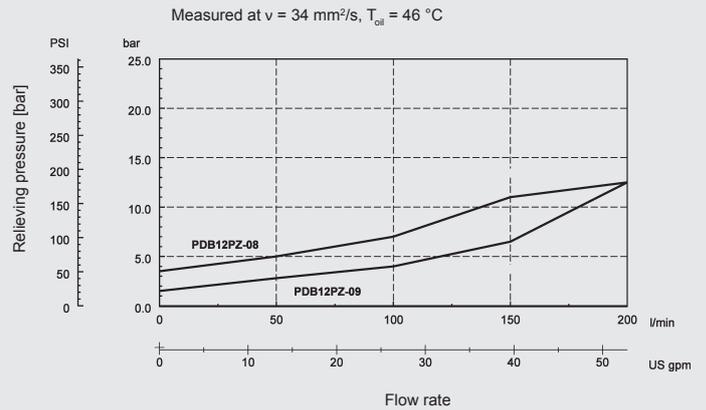
Code	Part No.	Material	Ports	Pressure
FH122-SB6	3053782	Steel, zinc-plated	G3/4	max. 420 bar
FH122-AB6	3053843	Aluminium, anodized	G3/4	max. 210 bar

Seal kits

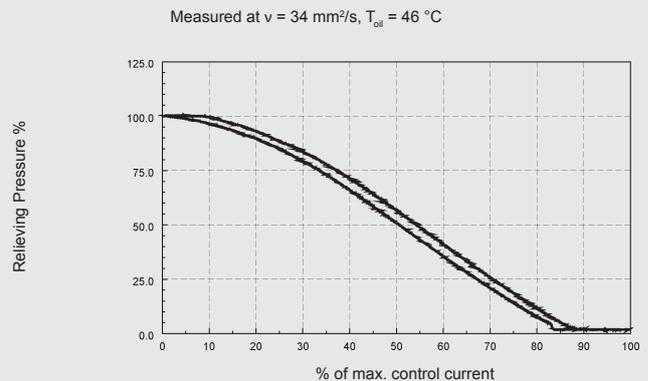
Code	Material	Part No.
FS122-N SEAL KIT	NBR	3071298
FS122-V SEAL KIT	FKM	3071299

PERFORMANCE

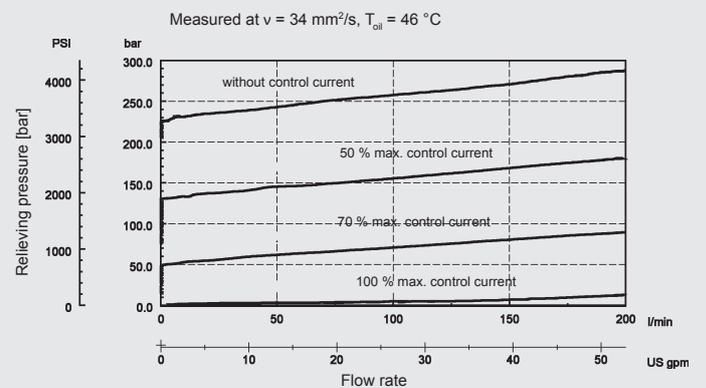
Δp -Q graph



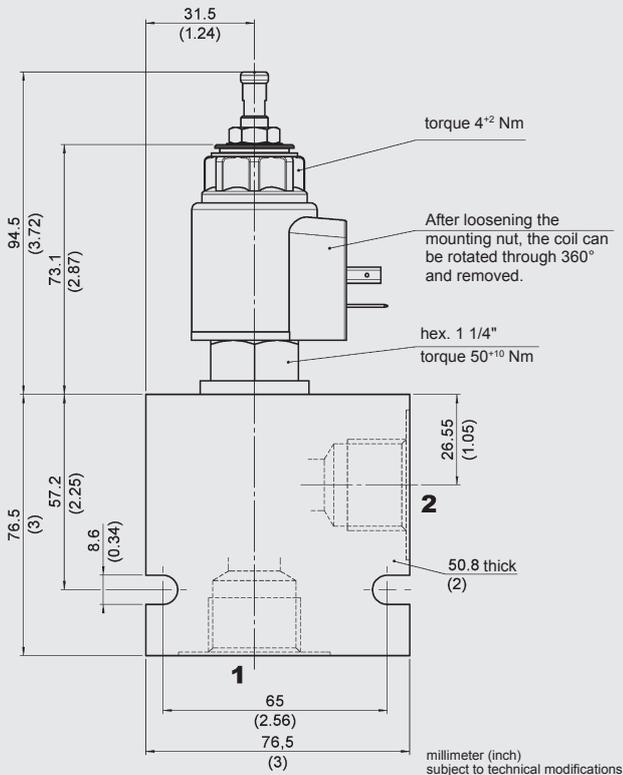
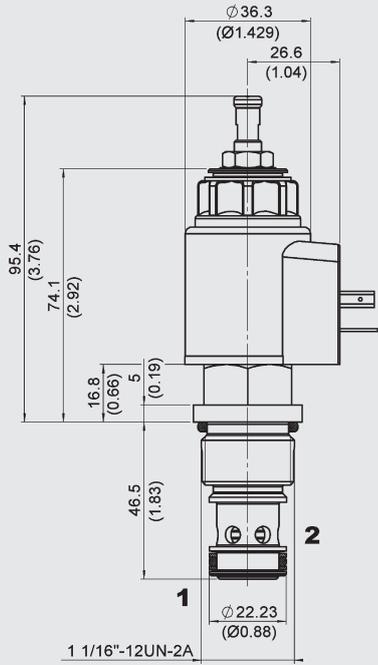
P-I graph



P-Q graph, typical

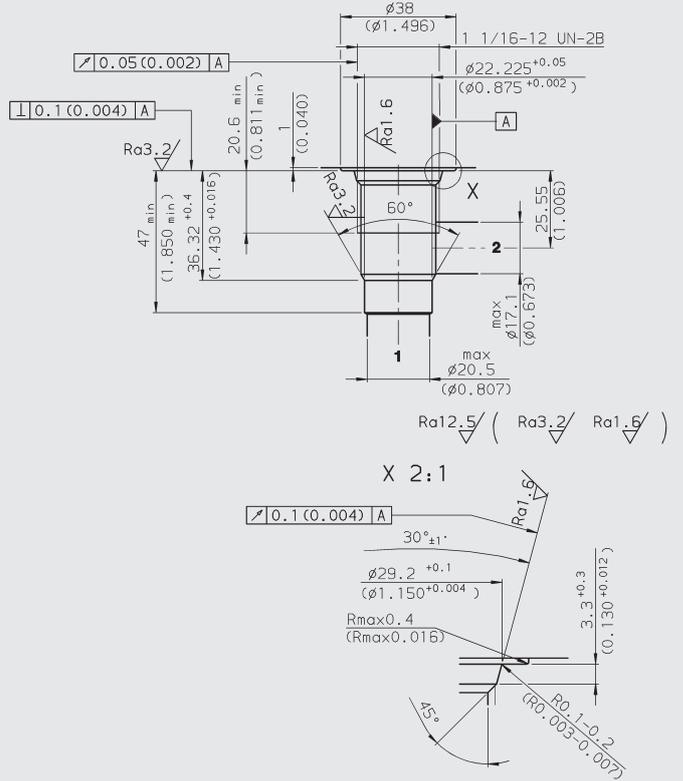


DIMENSIONS



CAVITY

FC12-2



Form tools

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

millimeter (inch)
subject to technical modifications

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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