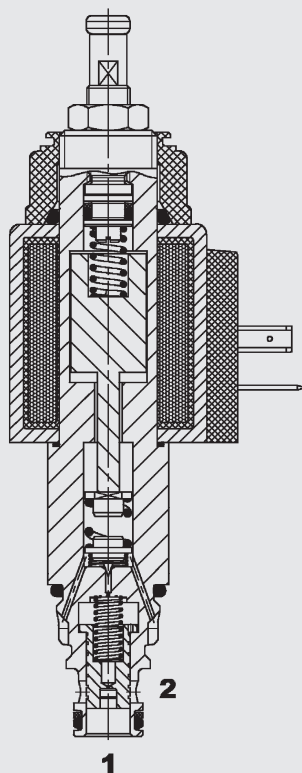


up to 60 l/min
up to 350 bar

FUNCTION



The PDB08PZ 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 pressure at port 1 is increasing. When de-energized, the highest pressure is adjusted (fail-safe function). The maximum pressure can be pre-set manually.

Proportional Pressure Relief Valve spool type, pilot operated - inverse UNF Cartridge – 350 bar PDB08PZ-08 /-18

FEATURES

- Reduces cavitation
- Decreasing pressure with increasing current
- Good stability across the whole pressure and flow range
- Excellent dynamic performance
- Adjustable throughout entire flow range
- Available in different versions with hydro-dynamic damping and reduced overlap for the reduction of pressure peaks
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1000 h Salt spray test)

SPECIFICATIONS*

Operating pressure:	max. 350 bar	
Pressure ranges:	4 to 60, 230, 350 bar	
Nominal flow:	max. 60 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, 2 and 3	
Viscosity range:	min. 7.4 mm ² /s to max. 420 mm ² /s	
Filtration: (to ISO 4406)	≤ 210 bar: min. class 17/15/12 > 210 bar: min. class 16/14/11	
MTTF _d :	150 - 1200 years, according to DIN EN ISO 13849-1	
Installation:	No orientation restrictions	
Materials:	Valve body:	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:	FC08-2	
Weight:	Valve complete	0.43 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:	160 - 250 Hz
Hysteresis with dither:	2 - 4% of I_{nom}
Repeatability:	≤ 2% of I_{nom}
Reversal error:	≤ 2% of I_{nom}
Response sensitivity:	≤ 1% of I_{nom}
Coil type:	Coil...-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.

* see "Conditions and instructions for valves" in brochure 53.000

MODEL CODE

PDB08PZ-08-C-N-330-V-330-24 PG-8.8

Basic model

Proportional pressure relief valve

Type

08 = standard, without damping
18 = as 08, with hydrodynamic damping

Body and ports*

C = cartridge only

Seals

N = NBR (standard)
V = FKM

Pressure range

087 = 4 - 60 bar (870 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), on request

Coil voltage

DC voltages

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
PK = Kostal threaded connection M27 x 1
PL = 2 flying leads, 457 mm long, 0.75 mm²
PN = Deutsch connector, 2-pole, axial
PT = AMP Junior Timer, 2-pole, radial

Coil resistance

2.2 = 2.2 Ohm (12 V)
8.8 = 8.8 Ohm (24 V)

Standard models

Model code	Part No.
PDB08PZ-08-C-N-087V087-12PG-2.2	3356340
PDB08PZ-08-C-N-087V087-24PG-8.8	3356404
PDB08PZ-08-C-N-330V330-12PG-2.2	3356342
PDB08PZ-08-C-N-330V330-24PG-8.8	3356435
PDB08PZ-08-C-N-500V500-12PG-2.2	3356344
PDB08PZ-08-C-N-500V500-24PG-8.8	3356438

Other models on request

*Standard in-line bodies

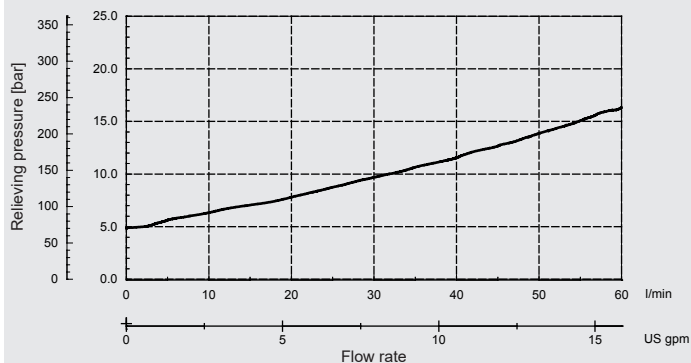
Code	Part No.	Material	Ports	Pressure
FH082-SB3	560919	Steel, zinc-plated	G3/8"	max. 350 bar
FH082-AB3	3011423	Aluminium, anodized	G3/8"	max. 210 bar

Seal kits

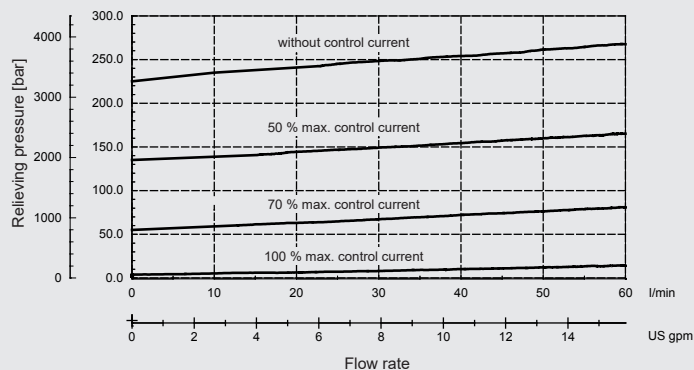
Code	Material	Part No.
FS UNF 08/N	NBR	3651385
FS UNF 08/V	FKM	3651356

TYPICAL PERFORMANCE

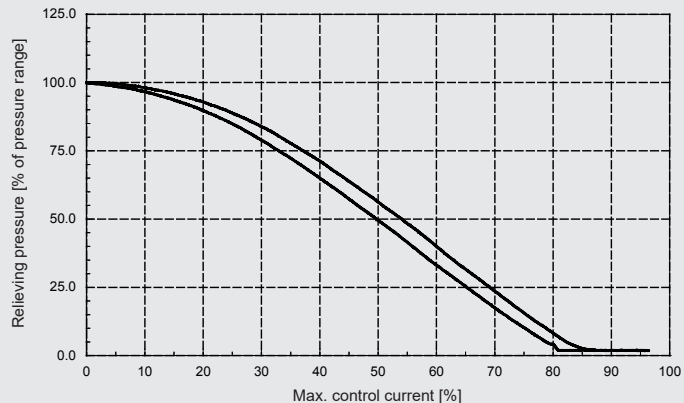
measured at $v = 34 \text{ mm}^2/\text{s}$, $T_{\text{oil}} = 46 \text{ }^\circ\text{C}$



measured at $v = 34 \text{ mm}^2/\text{s}$, $T_{\text{oil}} = 46 \text{ }^\circ\text{C}$



measured at $v = 34 \text{ mm}^2/\text{s}$, $T_{\text{oil}} = 46 \text{ }^\circ\text{C}$



NOTE

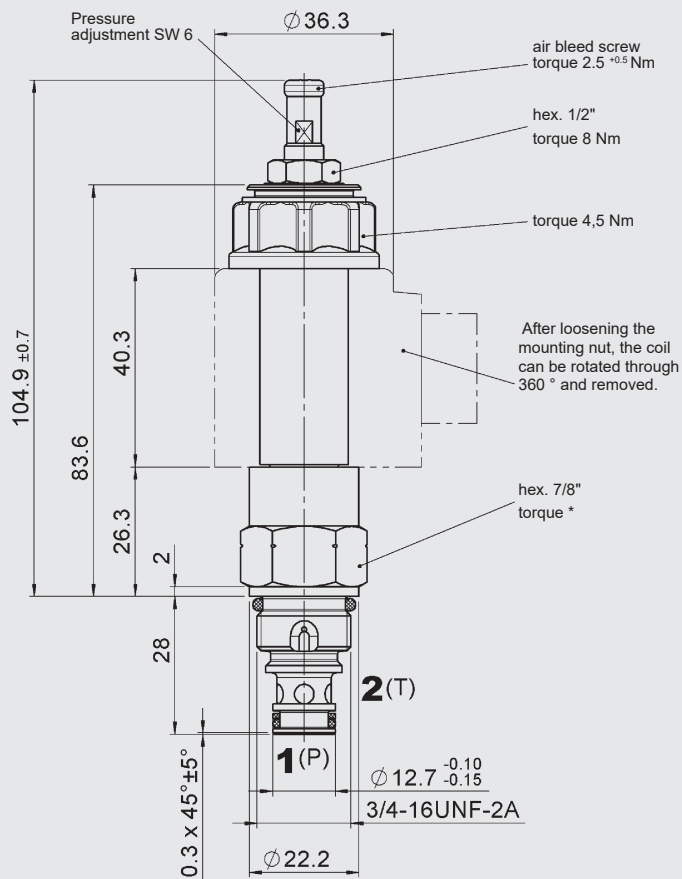
When operated with a high-impedance switching valve coil, the max. control current at 100% ED rated voltage of the coil is limited by the coil resistance. This prevents a thermal overload of the switching valve coil at the operating conditions specified under specifications.

However, this results in a loss of valve dynamics, an increased hysteresis value and a dependency between coil temperature and the p_{min} value to be achieved, which must be taken into account in the application.

Control currents with switching coil:

- 566 mA; 30 Ohm (24 V)
- 1047 mA; 8 Ohm (12 V)

DIMENSIONS



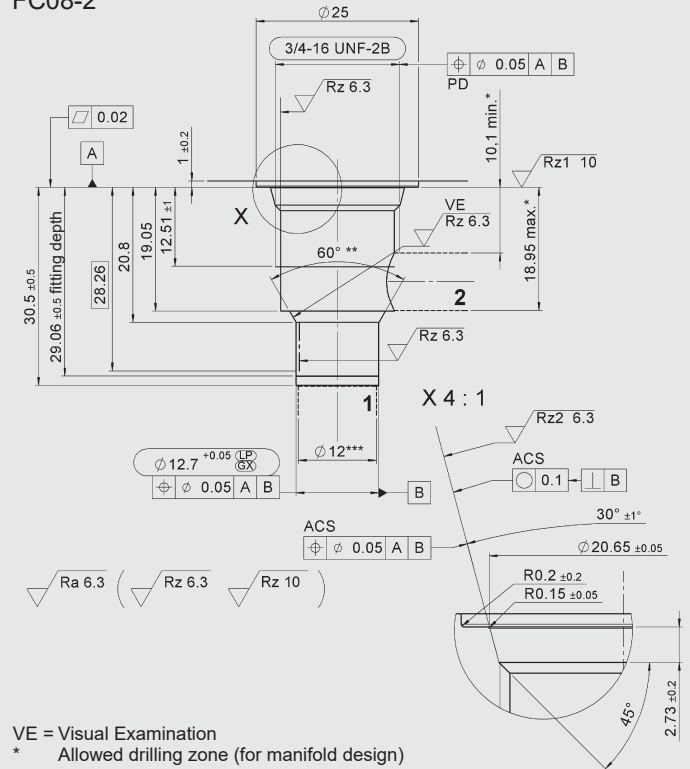
*Torque:
 Steel manifold
 (ultimate tensile strength < 360 N/mm²): 35 Nm
 Aluminium manifold
 (ultimate tensile strength < 330 N/mm²): 30 Nm
 (tool acc. to DIN EN ISO 6789,
 tool type II class A or B)

For further informations see brochure No. 53.000
 "Conditions and instructions for valves"

millimeter (inch)
 subject to technical modifications

CAVITY

FC08-2



VE = Visual Examination

* Allowed drilling zone (for manifold design)

** Sharp edges should be avoided by rounding to a radius of 0.1 mm to 0.2 mm

*** largest pre-drilling diameter (nominal tool diameter)

Form tools

Tool	Part No.
Countersink	175473
Reamer	175474

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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