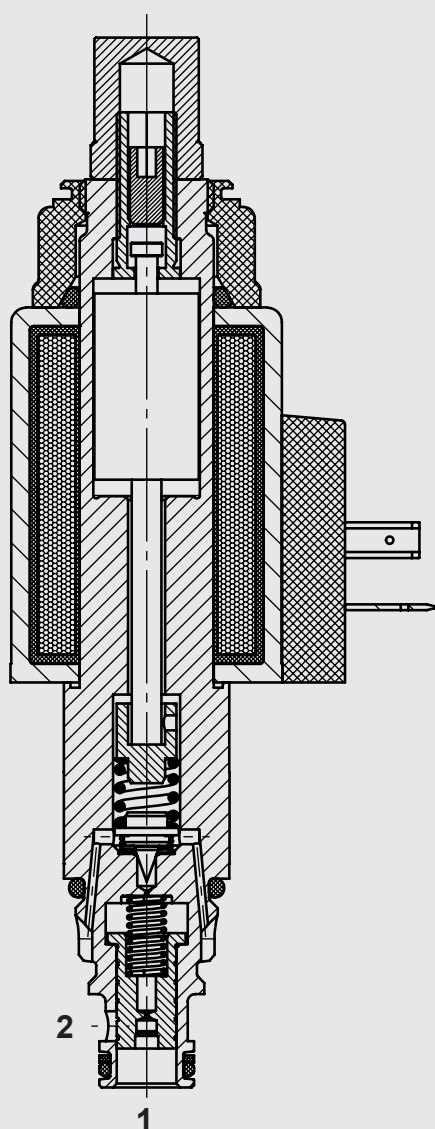


up to 60 l/min
up to 350 bar

FUNCTION



Proportional pressure relief valve PDB08PY-01

Spool type, pilot operated
Screw-in cartridge valve, UNF – 350 bar

PRODUCT ADVANTAGES

- Highly space-saving design thanks to elimination of a valve
- Lower weight
- Reduction of installation space
- Can be used as changeover valve between two pressure levels when using one switching coil → easy activation
- External surfaces with advanced corrosion protection thanks to ZnNi coating (1,000 h salt spray test)

DESCRIPTION OF FUNCTION

The HYDAC PDB08PY is a spool type pilot operated proportional pressure relief valve. When the pressure at port 1 rises and exceeds the nominal value that has been set electrically or mechanically, the pilot stage opens and the oil will flow from the rear of the main spool to tank port 2. The pressure difference created as a result of this action will cause the main spool to press against the return spring and allows the oil to flow from port 1 to port 2.

In accordance with the electrical nominal value, the pressure to be limited at port 1 can be continuously adjusted. A minimum and maximum pressure value can be defined on the valve for the usable range of the proportionally activatable limiting pressure.

Note:

Pressure at port 2 increases the setting pressure.

TECHNICAL DETAILS¹⁾

Operating pressure	max. 350 bar (port 1)	max. 5,000 psi
Setting pressure range	5 - 75 bar 5 - 115 bar 5 - 205 bar 5 - 285 bar 5 - 350 bar	70 - 1,100 psi 70 - 1,650 psi 70 - 3,000 psi 70 - 4,100 psi 70 - 5,000 psi
Flow rate	max. 60 l/min	max. 15.8 gpm
Internal leakage	<0.5 l/min at 80% of p _{nom}	
Operating fluid	Hydraulic oil according to DIN 51524 Part 1, 2 and 3	
Ambient temperature range	min. -20 °C up to max. +60 °C	
Temperature range of operating fluid	NBR: min. -20 °C up to max. +100 °C FKM: min. -20 °C up to max. +120 °C	
Viscosity range	min. 7.4 mm²/s up to max. 420 mm²/s	
Filtration	Permitted operating fluid contamination level according to ISO 4406 p < 210 bar: Class 20/18/15 p ≥ 210 bar: Class 18/16/13	
MTTF _D	150 - 1,200 years, assessment according to DIN EN ISO 13849-1:2016, Table C.1, confirmation of ISO 13849-2:2013, Tables C.1 and C.2	
Installation position	User defineable	
Materials	Valve body: Steel Spool: Steel, hardened and ground Seals: NBR (standard) FKM Support rings: PTFE Solenoid coil: Steel / Polyamide	
Installation space	FC08-2	
Weight	0.23 kg	0.47 kg with coil

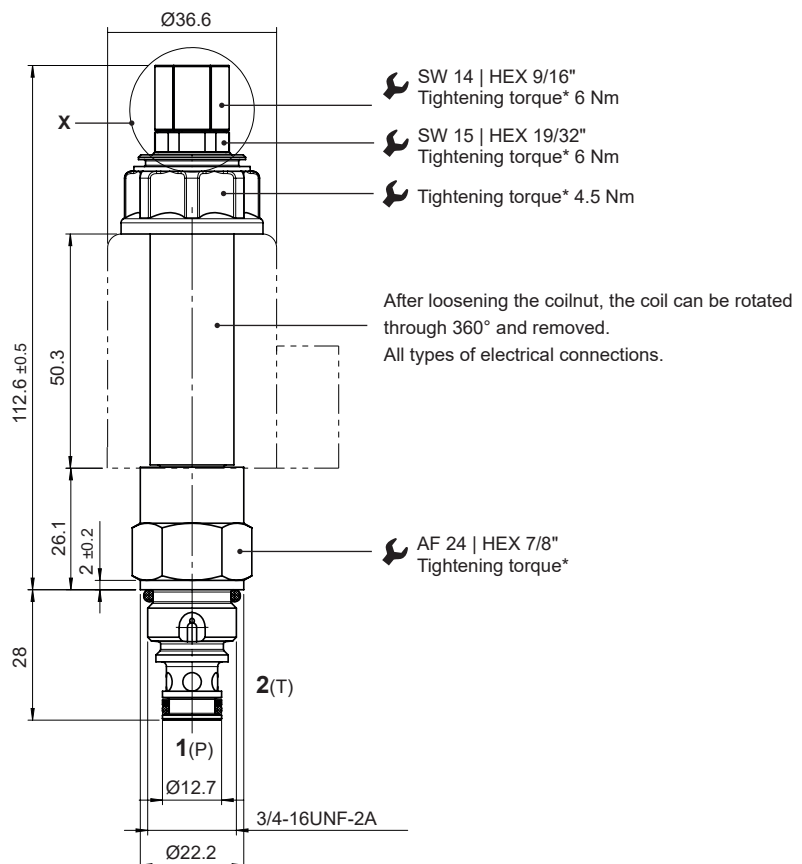
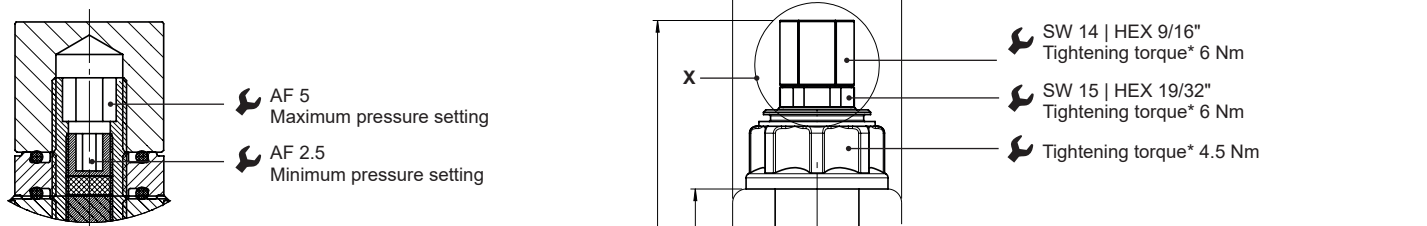
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Control current range	1,750 mA 4.1 ohms 12 volts 850 mA 17.6 ohms 24 volts
Dither frequency	200 Hz
Hysteresis with dither	2.5% of the max. control current
Repeatability	≤ 1.5% of the max. pressure range
Reversal error	≤3% of the max. control current
Response sensitivity	≤2% of the max. control current
Solenoid coil design	50-1836

¹⁾ See "Conditions and Instructions for Valves" in brochure 53.000.

DIMENSIONS

X (2:1) Ø36.6



*Tightening torque:

Steel housing tensile strength >460 N/mm²: 30 Nm | Aluminium housing tensile strength >330 N/mm²: 25 Nm

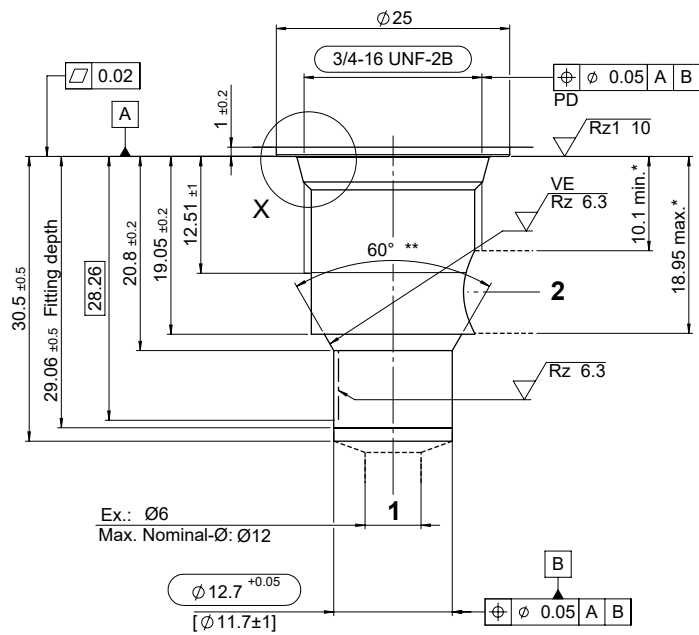
Torque tool acc. to DIN EN ISO 6789, tool type II class A or B.

Millimetre

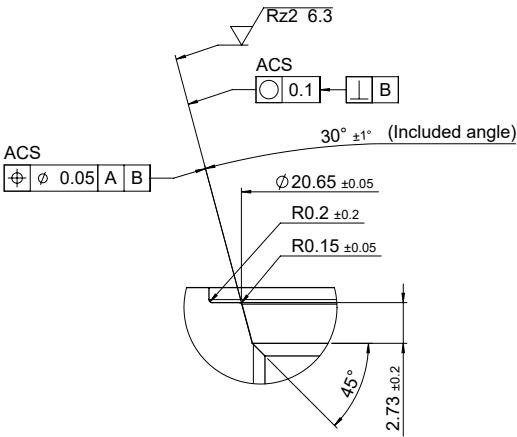
Subject to technical modifications.

CAVITY

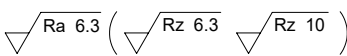
FC08-2



X 4 : 1



VE = Visual Examination



MODEL CODE

PDB08PY - 01 - C - N - 330 V 140 / 073 - 12 PG - 4.1

Name

Proportional Pressure Relief Valve UNF

Design

01 = standard

Connection type

C = Screw-in cartridge valve

Sealing material

N = NBR (standard)

V = FKM

Setting pressure range

110 = 75 bar | 1,100 psi

165 = 115 bar | 1,650 psi

300 = 205 bar | 3,000 psi

410 = 285 bar | 4,100 psi

500 = 350 bar | 5,000 psi

Adjustment type

V = adjustable with tool

Maximum pressure value limitation

n/a = presetting p_{nom}

140 = preset customer-specific maximum setting pressure (specified in psi/10)

Minimum pressure value limitation

n/a = presetting p_{min} 5 bar

073 = preset customer-specific minimum setting pressure (specified in psi/10)

Please note: Minimum pressure value $< 0.9 \times$ maximum pressure value

Nominal voltage

0 = without coil, with fastening nut and seal

12 = 12 V DC

24 = 24 V DC

Solenoid coil design* Type 50-1836**

Number of poles

Connection

Protection class

DC:

PG = Plug A acc. to DIN EN 175301-803

3-pole

radial

IP65

PL = 2 flying leads 0.75 mm² x 457 mm (18")

2-pole

radial

IP65 / IP67

PN = DEUTSCH plug connector DT04-2P

2-pole

axial

IP67 / IP69

PT = AMP Junior Timer

2-pole

radial

IP65 / IP67

PU = AMP Junior Timer

2-pole

axial

IP65 / IP67

Coil resistance

4.1 = 4.1 Ω | 12 V

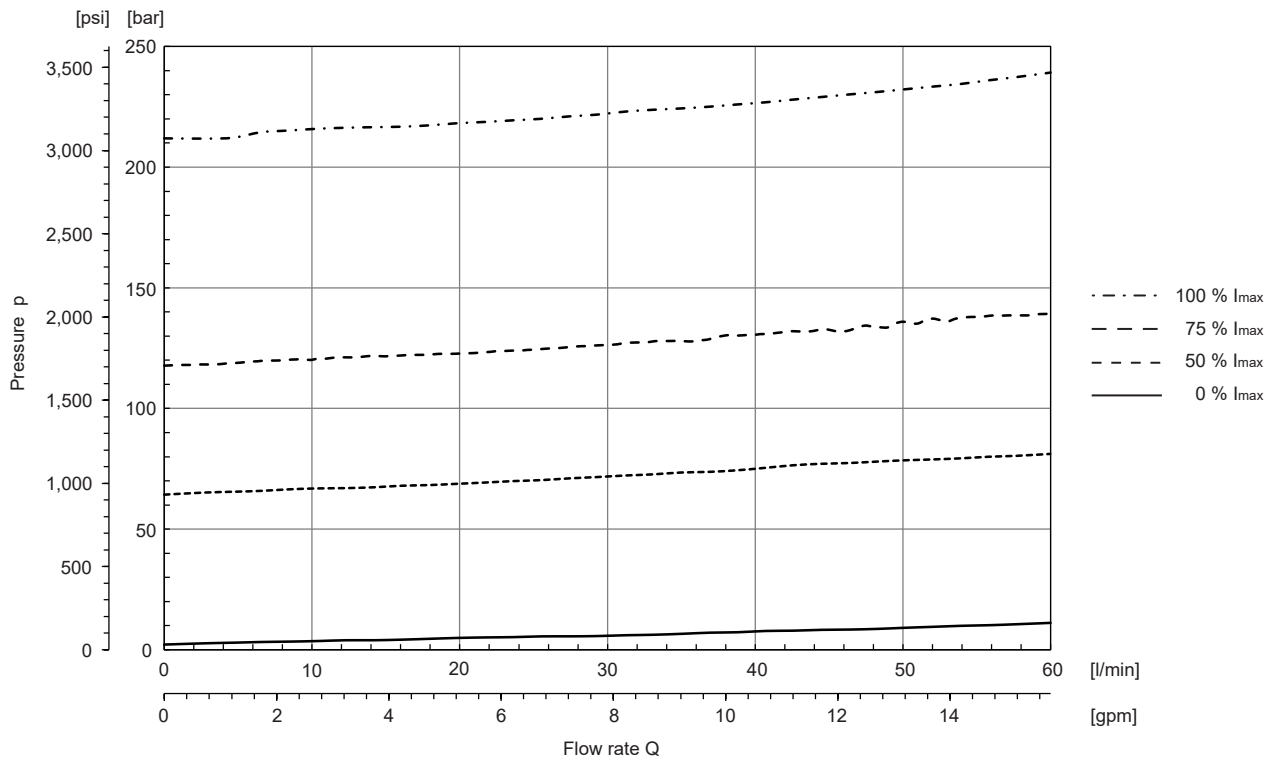
17.6 = 17.6 Ω | 24 V

* Further versions on request.

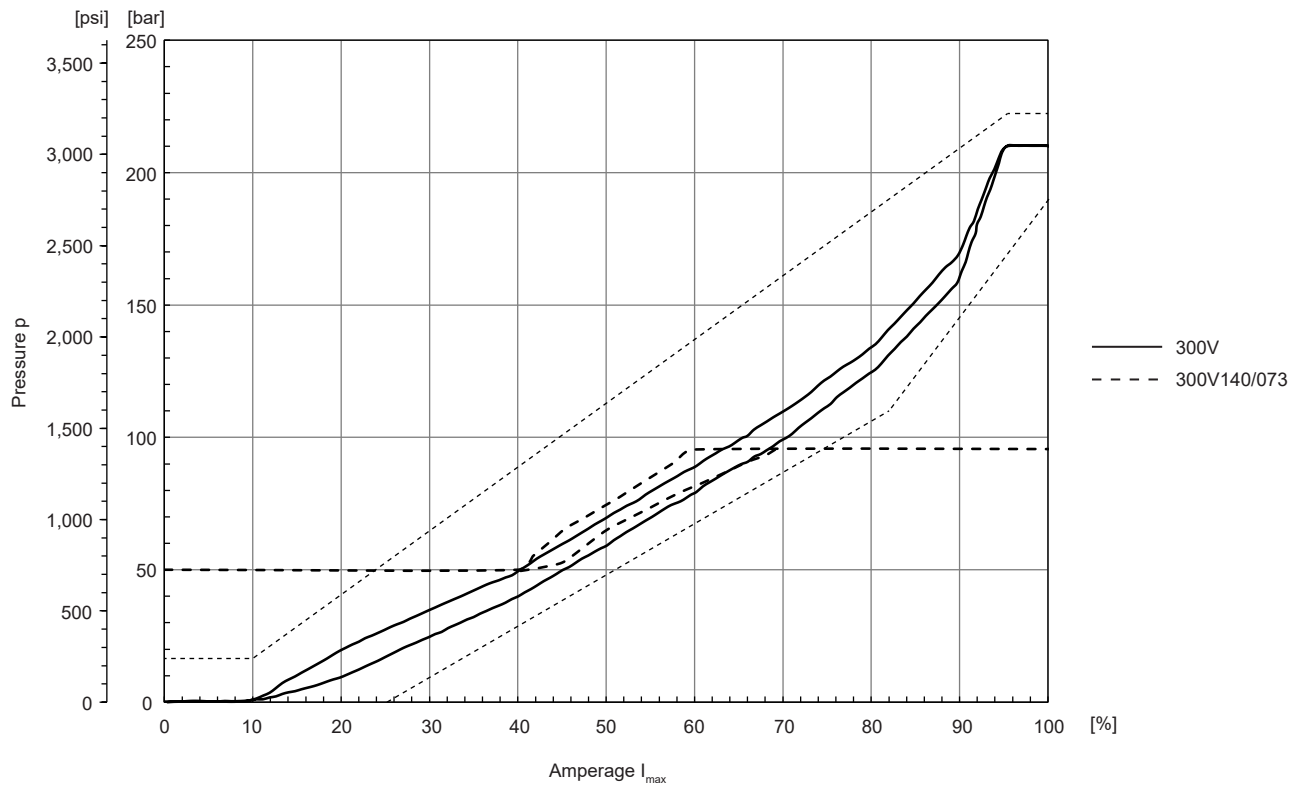
** Detailed information is available in brochure 5.215 – Solenoid coils for proportional valves.

TYPICAL PERFORMANCE CURVE

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



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



MATERIAL OVERVIEW

Standard designs

Designation	Part no.
PDB08PY-01-C-N-110V-0	3949677
PDB08PY-01-C-N-165V-0	3943678
PDB08PY-01-C-N-300V-0	3949676
PDB08PY-01-C-N-410V-0	3949679
PDB08PY-01-C-N-500V-0	3949680

Further versions on request.

Spare parts, seal kits

Designation	Material	Code	Part no.
Seal kit	NBR	FS UNF 08/N	3651385
Seal kit	FKM	FS UNF 08/V	3651356

Housing

Designation	Material	Code	Pressure	Ports	Weight	Part no.
Pipe connection housing	Steel, zinc-plated	H-R082-SB3	350 bar	G3/8"	0.45 kg	560919
Pipe connection housing	Aluminium, anodised	H-R082-AB3	210 bar	G3/8"	1.16 kg	3011423

Tools, installation space

Designation	Part no.
Rougher (Countersink)	175473
Finisher (Reamer)	175474

NOTE

The information provided in this brochure refers to the described operating conditions and applications. For applications not described, please contact the relevant technical departments.

Subject to technical modifications.

Documents are only valid if they have been obtained via the website and are up-to-date.

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