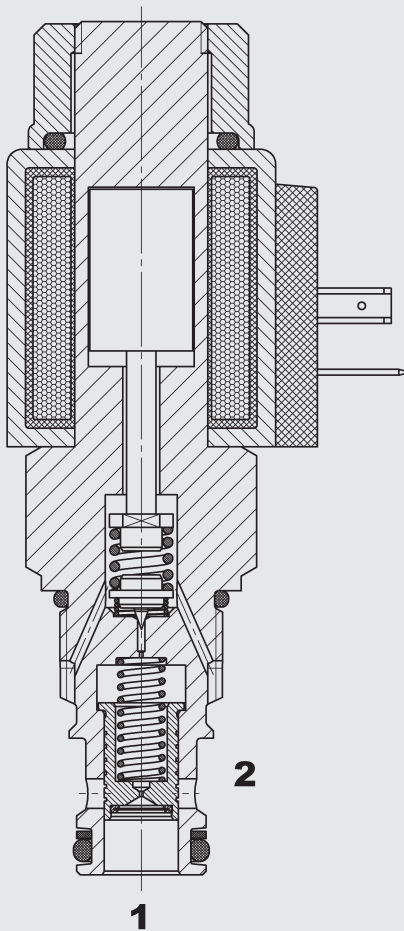


Up to 120 l/min  
Up to 350 bar

## FUNCTION



The PDBM10120AP is a pilot-operated, spool-type proportional pressure relief valve. If the pressure at port 1 exceeds the setting defined by the electrical signal, the pilot-stage opens and oil flows from behind the main spool to the tank port 2. The resulting pressure differential causes the main spool to move against the reset-spring and allows oil to flow from port 1 to port 2. As a function of the electrical signal, the relief pressure at port 1 can be changed steplessly.

## Proportional Pressure Relief Valve Spool Type, Pilot-Operated Normally Open Metric Cartridge – 350 bar PDBM10120AP

### FEATURES

- Hardened and ground control spool to ensure minimal wear and extended service life
- Quick response
- Low hysteresis and excellent stability throughout the flow range
- Increased operating reliability due to protective strainer
- Low pressure drop due to CFD optimized flow path
- External surfaces zinc-plated and corrosion-proof

### SPECIFICATIONS

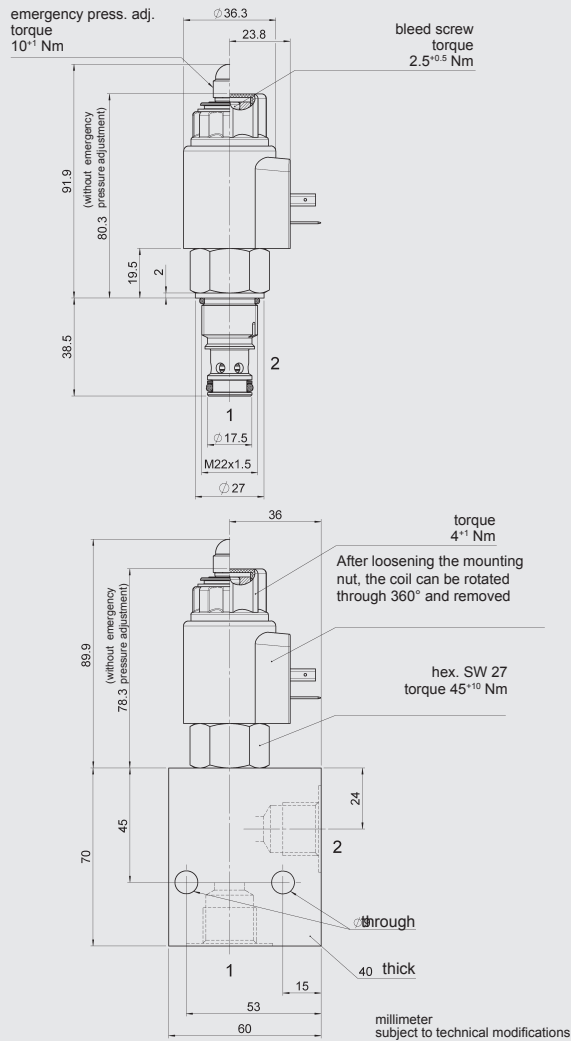
Operating pressure:	max. 350 bar
Nominal flow:	max. 120 l/min
Operating pressure ranges:	up to 60 bar up to 230 bar up to 350 bar
Media operating temperature range:	min. -20 °C to max. +100 °C
Ambient temperature range:	min. -20 °C to max. +60 °C
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Viscosity range:	min. 10 mm <sup>2</sup> /s to max. 420 mm <sup>2</sup> /s
Filtration:	Class 18/16/13 to 19/17/14 according to ISO 4406 or cleaner
MTTF <sub>d</sub> :	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:	10120A
Weight:	Valve complete 0.47 kg Coil only 0.23 kg

### Electronic data:

Control current range:	1050 mA, 8.8 Ohm (24 Volt) 2100 mA, 2.2 Ω
Internal leakage:	max. 170 cm <sup>3</sup> /min at 350 bar and 34 mm <sup>2</sup> /s
Dither frequency:	approx. 160 Hz - 250 Hz
Response time:	Energized: approx. 50 ms De-energized: approx. 30 ms
Hysteresis with dither:	2-4% of I <sub>nom</sub>
Repeatability:	≤ 1.5% of I <sub>nom</sub>
Sensitivity:	≤ 1 % of I <sub>nom</sub>
Coil type:	Coil...-40-1836

The PDBM10120AP can also be supplied with an emergency pressure adjustment (version -02M). 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



## MODEL CODE

**PDBM10120AP - 01 M - C - N - 350 - 24 PG - 8.8**

**Basic model** □

Proportional pressure relief valve

**Type**  
01 = standard

**Emergency pressure adjustment**  
no details = without emergency press. adj.  
M = emergency pressure adjustment

**Body and ports\***  
C = cartridge only

**Seals**  
N = NBR (standard)  
V = FKM

**Pressure setting range**  
60 = to 60 bar  
250 = to 250 bar  
350 = to 350 bar

**Coil voltage**  
12 = 12 Volt DC (2.2 Ω)  
24 = 24 Volt DC (8.8 Ω)

**Coil connectors (type 40-1836)**

DC: PG = DIN connector to EN175301-803

PT = AMP Junior Timer, 2-pole, radial

PL = 2 flying leads, 457 mm long; 0.75 mm<sup>2</sup>

PN = Deutsch connector, 2-pole, axial, DT04-22P-EF 04

Other connectors on request

**Coil resistance**

2.2 = 2.2 Ohm (12 V)

8.8 = 8.8 Ohm (24 V)

## Standard models

Model code	Part No.
PDBM10120AP-01-C-N-60-12PG-2.2	3122655
PDBM10120AP-01-C-N-230-12PG-2.2	3122656
PDBM10120AP-01-C-N-350-12PG-2.2	3122657
PDBM10120AP-01-C-N-60-24PG-8.8	3122622
PDBM10120AP-01-C-N-230-24PG-8.8	3122621
PDBM10120AP-01-C-N-350-24PG-8.8	3105357

## \*Standard in-line bodies

Code	Part No.	Material	Ports	Pressure
R10120A-01X-01	395232	Steel, zinc-plated	G1/2	420 bar

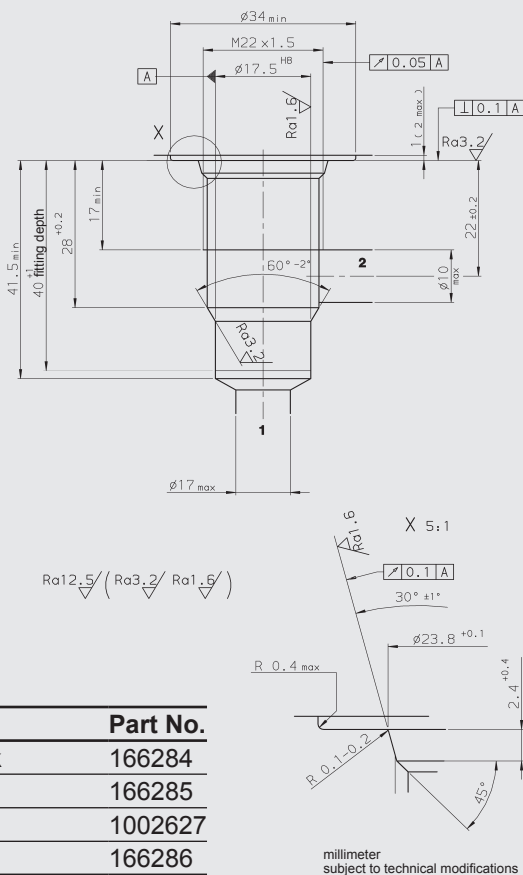
Other bodies on request

## Seal kits

Code	Material	Part No.
SEAL KIT DB10120A...NBR	NBR	3085499
SEAL KIT DB10120A...FKM	FKM	560222

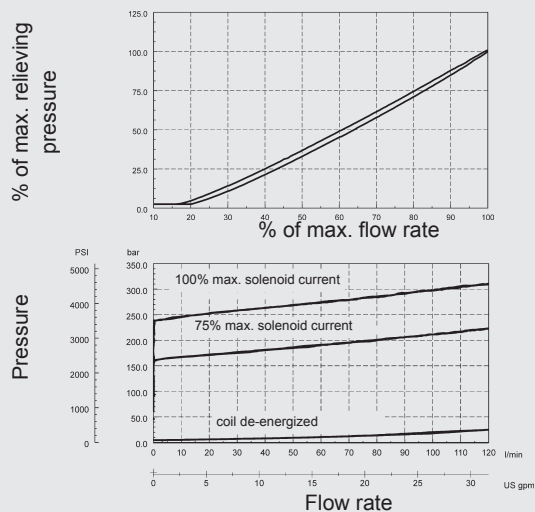
## CAVITY

10120A



## PERFORMANCE

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



## 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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