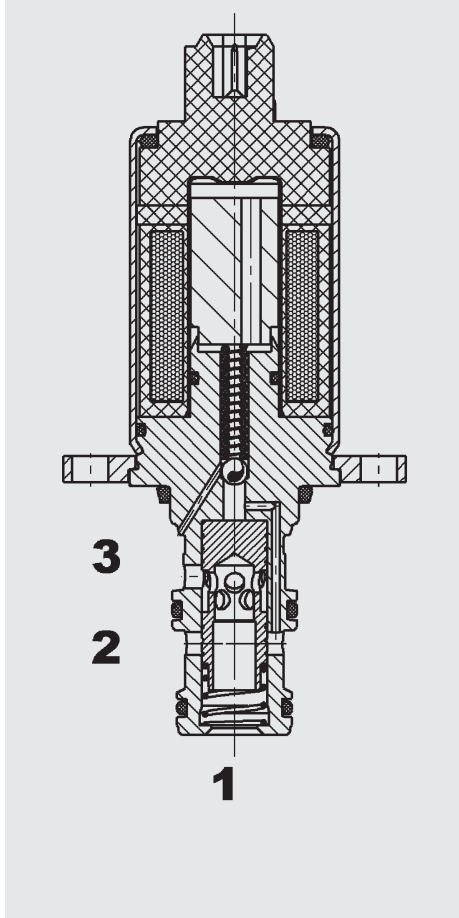


FUNCTION



The proportional pressure reducing valve PDMC10S30P is a pilot-operated, 3-way spool-type valve. When de-energized, port 1 (consumer) is vented via tank port 3. Pump port 2 provides a constant small flow of pilot oil to tank port 3. When the inlet pressure and the volume required fluctuates, it provides an almost constant outlet pressure - depending on the energization of the coil. When the control current increases, the solenoid coil exerts a force via the pilot line on the pilot spool and thereby connects port 2 (consumer) with pump port 3. This compresses the reset spring of the control spool. If, as a result of external factors, the pressure at port 1 rises above the preset pressure, the valve opens from port 1 (consumer) to tank port 3. This reduces the flow from pump port 2 to port 1 (consumer) until the pressure across port 1 is equal to the pre-set pressure value. Any pressure at tank port 3 is additive to the pre-set control pressure.

3-Way Proportional Pressure Reducing Valve Spool Type, Pilot-Operated Slip-In Valve – 60 bar PDMC10S30P

FEATURES

- Compact design
- Excellent dynamic performance
- Low pressure drop due to CFD optimized flow path
- Control pressure reduction is possible right down to 0 bar.
- Excellent curve characteristics, also when there is inadequate primary pressure (the max. control pressure is 1.3 bar below the primary pressure)
- External surfaces corrosion-proof
- Hardened and ground valve components to ensure minimal wear and extended service life
- Application example: clutch control
- Screen filter protects the pilot from contamination

SPECIFICATIONS

Primary pressure at port 2:	max. 60 bar
Control pressure at port 1:	max. 35 bar
Tank pressure at port 3:	Max. 10 bar dynamic (30 bar static)
(Should be piped separately to tank, i.e not connected to the working hydraulics)	
Nominal flow:	max. 40 l/min
Pressure ranges:	0 – 25 bar, 0 – 35 bar
Pressure drop:	approx. 8 bar at 40 l/min (from 2 → 1, 1 → 3)
Leakage:	Energized: < 0.4 l/min De-energized: < 0.8 l/min (at 60 bar pump pressure)
Media operating temperature range:	min. -20 °C to max. +100 °C
Ambient temperature range:	min. -20 °C to max. +80 °C * (see note on thermal load capacity of the coil)
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Viscosity range:	min. 7.4 mm ² /s to max. 2000 mm ² /s
Filtration:	Class 21/19/16 according 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
Cavity:	10S30 compact
Weight:	0.28 kg
Electronic data:	
Coil duty rating:	100 % duty cycle * (see note on thermal load capacity of the coil)
Control currents:	0 – 950 mA, 10.5 Ω (24 V) 0 – 2,000 mA, 2.65 Ω (12 V)
Dither frequency:	130 Hz recommended (110 – 200 Hz)
Hysteresis with dither:	2 % of the max. control current
Repeatability:	≤ 1 % of the max. pressure range
Reversal error:	≤ 1 % of the max. control current
Response sensitivity:	≤ 1 % of the max. control current
Insulation material class:	H to VDE0580, 180 °C

MODEL CODE

PDMC10S30 P - 01 - C - N - 25 - 12 PU - 10.5

Basic model

Proportional pressure reducing valve, compact

Cavity

10S30

Design

P = pilot-operated

Type

01 = standard
03 = strainer at port 2

Body and ports

C = slip-in only

Seals

N = NBR (standard)
V = FKM (optional)

Pressure range

25 = 0 to 25 bar
35 = 0 to 35 bar

Coil voltage

12 = 12 Volt (2.65 Ω)
24 = 24 Volt (10.5 Ω)

Coil connectors

PN = Deutsch connector DT04, 2-pole, axial
PU = AMP Junior Timer, 2-pole, axial

Coil resistance

2.65 = 2.65 Ω (12 V)
10.5 = 10.5 Ω (24 V)

Standard models

Model code	Part No.
PDMC10S30P-01-C-N-25-12PU-5.2	3450702
PDMC10S30P-01-C-N-25-24PU-21.2	3396732
PDMC10S30P-01-C-N-35-12PU-5.2	3450703
PDMC10S30P-01-C-N-35-24PU-21.2	3422416

Other models on request

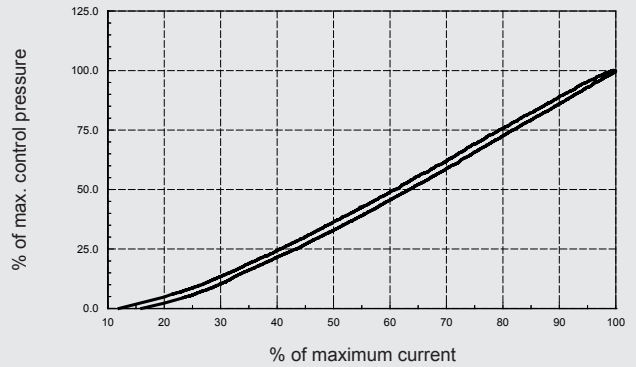
Standard in-line bodies

Code	Part No.	Material	Ports	Pressure
R10S30-010-01	3426652	Steel	G3/8	60 bar

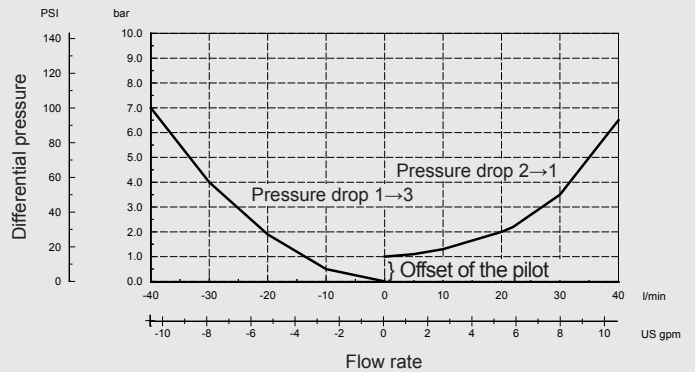
PERFORMANCE

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

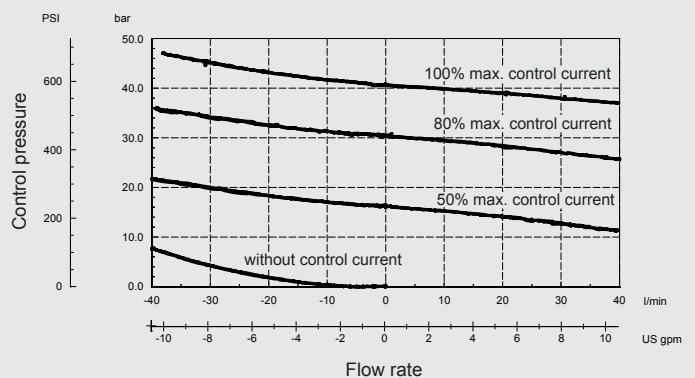
p/l



Dp/Q



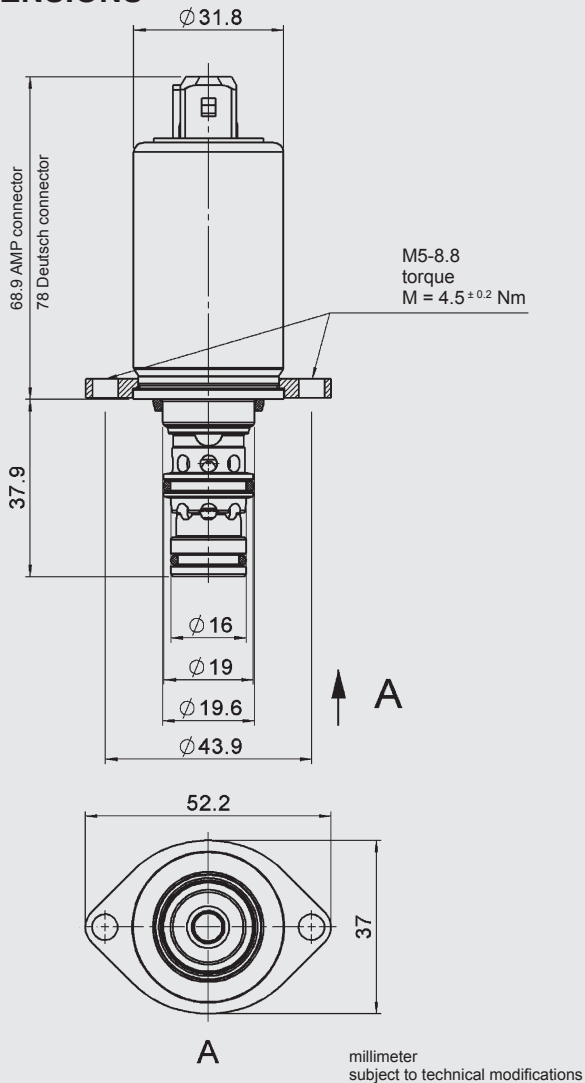
p/Q



*Thermal load capacity of the coil:
100% duty cycle at $T_{A, \text{max}} = 80 \text{ }^\circ\text{C}$

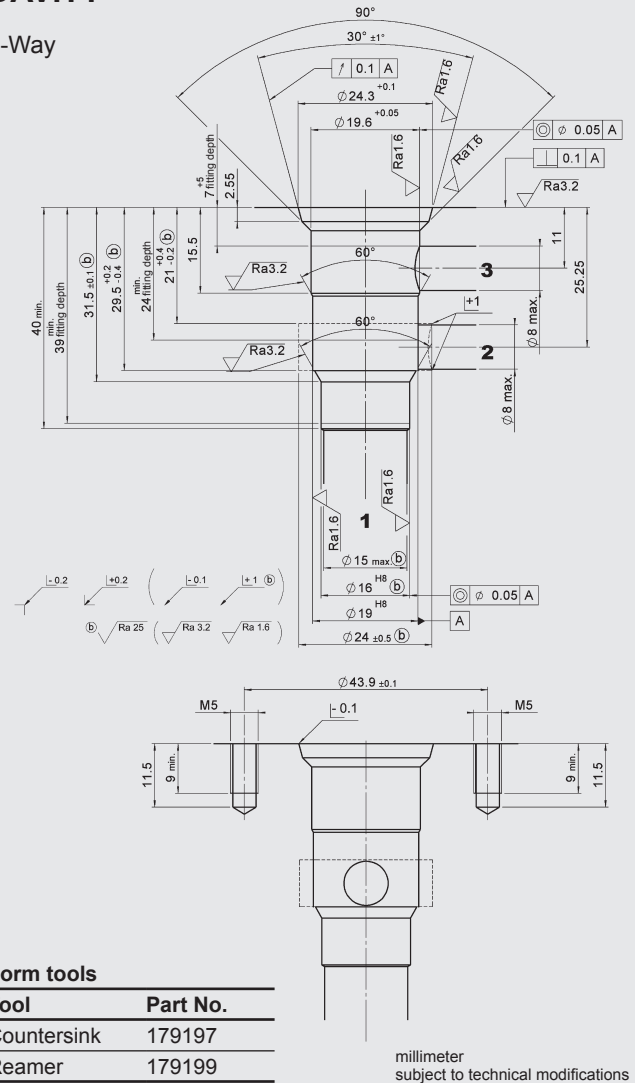
Please note: The data is based on the complete valve, mounted in a line body (block temperature: $105 \text{ }^\circ\text{C}$, aluminium or steel; dimensions $40 \times 60 \times 56 \text{ mm}$), flanged to a base block (block temperature $105 \text{ }^\circ\text{C}$, steel, dimensions $200 \times 150 \times 100 \text{ mm}$). The air in the climatic test cabinet is circulated by the cabinet ventilator.

DIMENSIONS



CAVITY

3-Way



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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