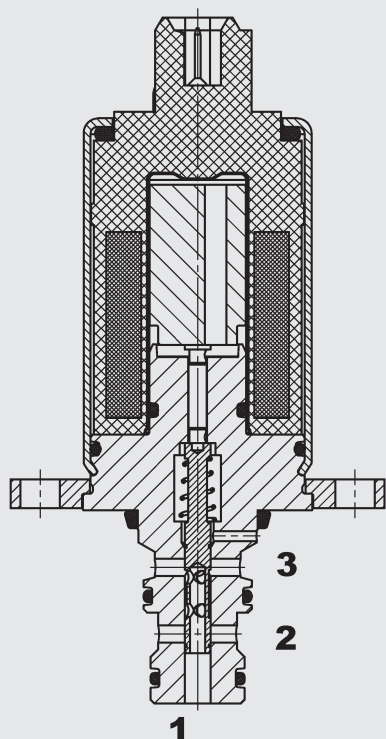


Up to 4 l/min  
Up to 60 bar

## FUNCTION



The proportional pressure reducing valve PDMC04S30D is a direct-acting 3-way spool-type valve. When de-energized, port 2 is closed and port 1 (consumer) is connected to port 3 (tank). When the inlet pressure 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 on the control spool which is proportional to the control current and thereby defines the regulated pressure at port 1. This setting is proportional to the control current. Any pressure at tank port 3 is additive to the pre-set control pressure. If, as a result of external factors, the pressure at port 1 rises above the pre-set pressure, the valve opens from port 1 to tank port 3. The valve has been specially developed for pilot applications. For these applications, the requirement is primarily for high dynamic performance and low pressure drop, in order to ensure rapid oil filling and fast draining of the consumer.

## 3-Way Proportional Pressure Reducing Valve Spool Type, Direct-Acting Slip-In Valve – 60 bar PDMC04S30D

### FEATURES

- Compact design
- Excellent dynamic performance
- Low pressure drop due to CFD optimized flow path
- Excellent curve characteristics, also when there is inadequate primary pressure
- Coil seals protect the solenoid system
- Main applications: pilot valve for directional spool valves and other main-stage valves, accumulator charging circuits, slewing angle adjustment on pumps, clutches
- Excellent small signal characteristics
- External surfaces with extended corrosion protection

### SPECIFICATIONS\*

Primary pressure at port 2:	max. 60 bar
Control pressure at port 1:	max. 32 bar
Tank pressure at port 3:	max. 10 bar
(Should be piped separately to tank)	
Nominal flow:	max. 4 l/min
Pressure ranges:	0 – 25 bar, 0 – 32 bar
Pressure drop:	7 bar from 2 → 1 at 4 l/min 8.5 bar from 2 → 1 with strainer (values given are based on clean strainer) 7 bar from 1 → 3 at 4 l/min (Dither-f = 130 Hz)
Leakage:	Energized: < 0.03 l/min De-energized: < 0.01 l/min (at 60 bar pump pressure, Dither 130 Hz)
Media operating temperature range:	min. -30 °C to max. +100 °C (only for NBR)
Ambient temperature range:	min. -30 °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 <sup>2</sup> /s to max. 420 mm <sup>2</sup> /s
Filtration:	Class 21/19/16 according to ISO 4406 or cleaner
MTTF <sub>d</sub> :	150 years
Installation:	No orientation restrictions
Materials:	Valve body: steel Spool: hardened and ground steel Seals: NBR, others on request U-Polyurethane (only for Type 03)
Cavity:	04S30
Weight:	0.28 kg
<b>Electronic data:</b>	
Duty cycle:	100 % duty rating * (see note on thermal load capacity of the coil)
Control currents:	0 – 750 mA, 21.2 Ω (24 V) 0 – 1,500 mA, 5.2 Ω (12 V)
Response time:	On: < 50 ms, Off: < 30 ms
Dither frequency:	130 Hz recommended (110 – 160 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

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

## MODEL CODE

**PDMC 04S30 D - 01 - C - N - 25 - 12 PU01 - 5.2**

### Basic model

Proportional pressure reducing valve, compact

### Cavity

04S30 = slip-in

### Design

D = direct-acting

### Type

01 = standard

02 = increased primary pressure, polyurethane O-rings

03 = with strainer in port 2 (w = 150 µm)\*

### Body and ports

C = slip-in only

### Seals

N = NBR (standard)

U = polyurethane (only in type 03)

### Pressure range

25 = 0 to 25 bar

32 = 0 to 32 bar

### Coil voltage

12 = 12 Volt (5.2 Ω)

24 = 24 Volt (21.2 Ω)

### Coil connectors

PN = Deutsch connector DT04, 2-pole, axial

PU = AMP Junior Timer, 2-pole, axial

### Coil resistance

5.2 = 5.2 Ω (12 V)

21.2 = 21.2 Ω (24 V)

\*w = mesh size

### Standard models

Model code	Part No.
PDMC04S30D-01-C-N-25-12PU-5.2	3451383
PDMC04S30D-01-C-N-25-24PU-21.2	3371734
PDMC04S30D-01-C-N-32-12PU-5.2	3456387
PDMC04S30D-01-C-N-32-24PU-21.2	3396178
PDMC04S30D-03-C-N-25-12PU-5.2	3486396
PDMC04S30D-03-C-N-25-24PU-21.2	3486397
PDMC04S30D-03-C-N-25-12PN-5.2	3491096
PDMC04S30D-03-C-N-25-24PN-21.2	3567187

Other models on request

### Standard in-line bodies

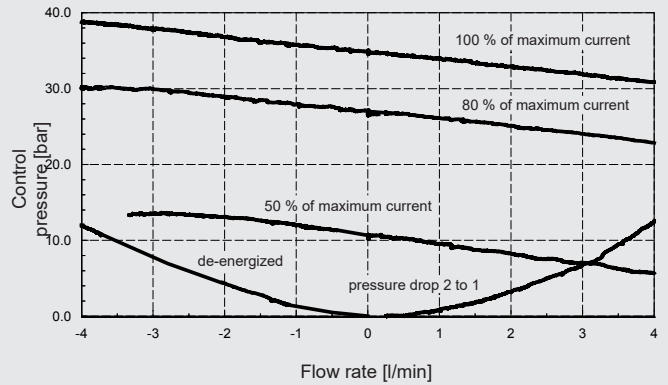
Code	Part No.	Material	Ports
Dual housing: B-BM 2X PDMC04S30D	3482029	Aluminium	A, B = G ¼ P, T = G ¾

Other bodies on request

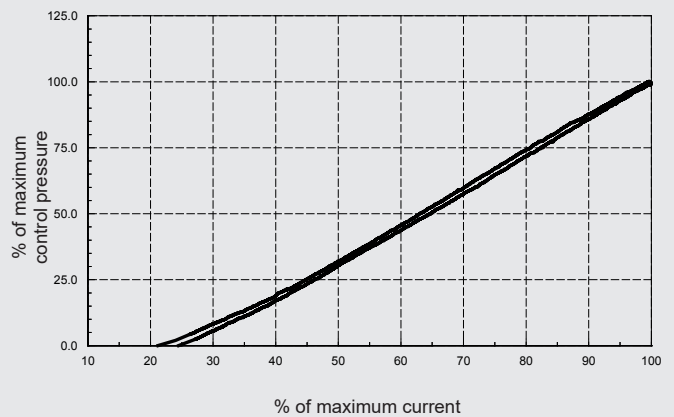
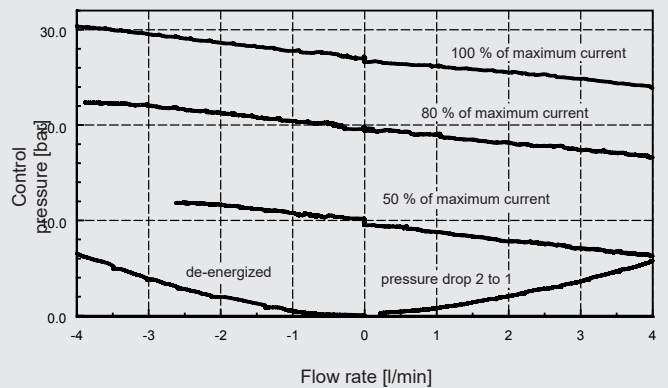
## PERFORMANCE

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

Pressure range 32 bar



Pressure range 25 bar

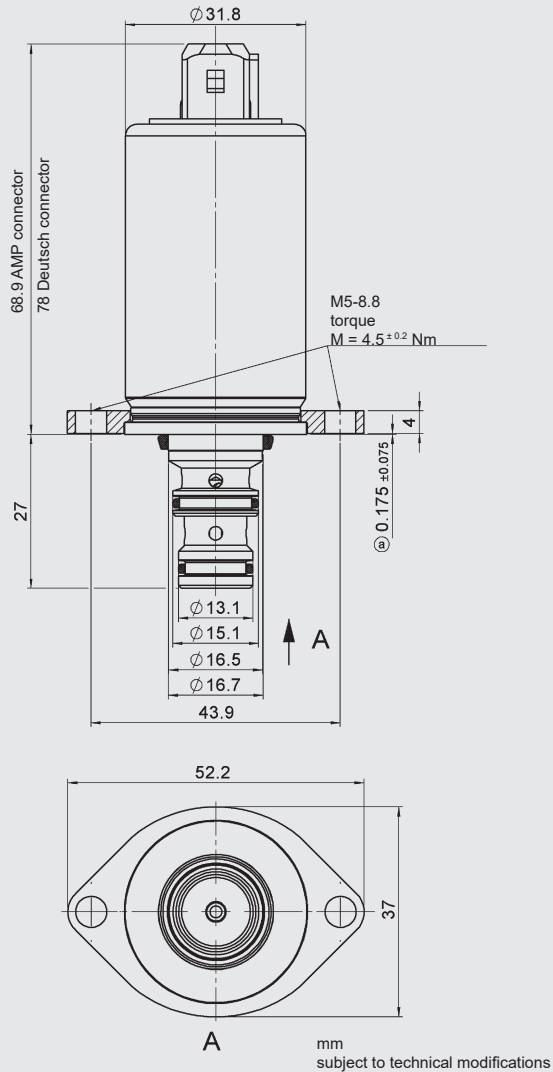


\*Thermal load capacity of the coil:

100% duty cycle at  $T_{A, \text{max}} = 80 \text{ °C}$

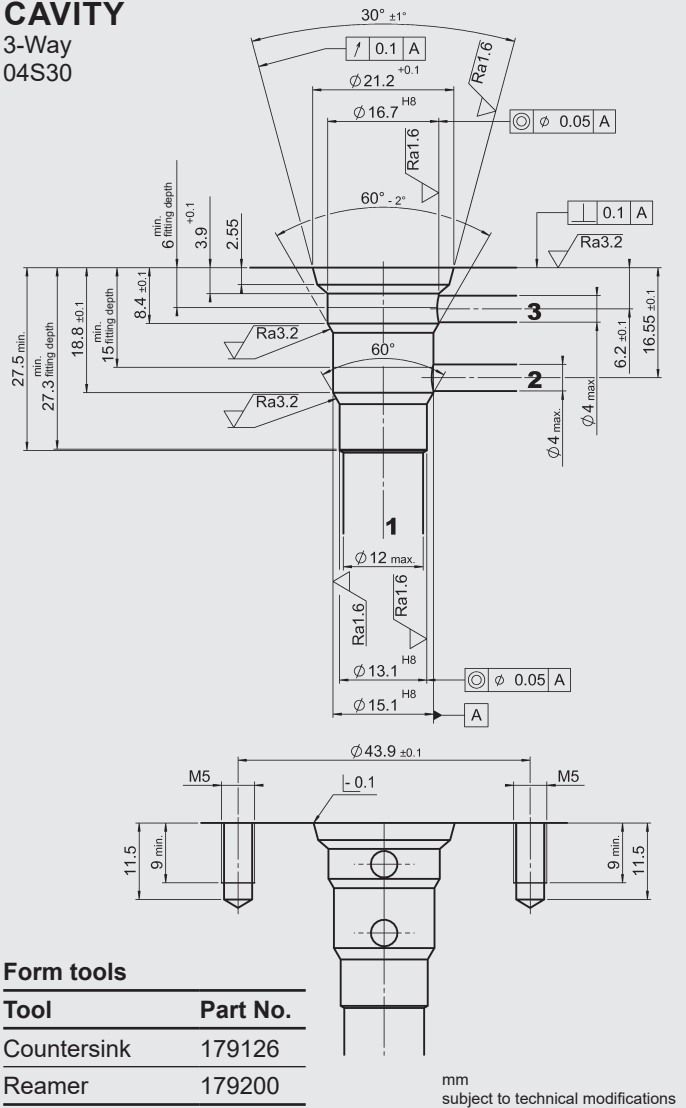
**Please note:** The data is based on the complete valve, mounted in a line body (block temperature: 105 °C, aluminium or steel; dimensions 40 x 60 x 56 mm), flanged to a base block (block temperature 105 °C, steel, dimensions 200 x 150 x 100 mm). The air in the climatic test cabinet is circulated by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

## DIMENSIONS



## CAVITY

3-Way  
04S30



## NOTE

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

**HYDAC Fluidtechnik GmbH**  
Justus-von-Liebig-Str.  
**D-66280 Sulzbach/Saar**  
Tel: 0 68 97 / 509-01  
Fax: 0 68 97 / 509-598  
E-Mail: flutec@hydac.com

