

4/3 proportional directional valve direct-acting with transducer **P4WER 06**

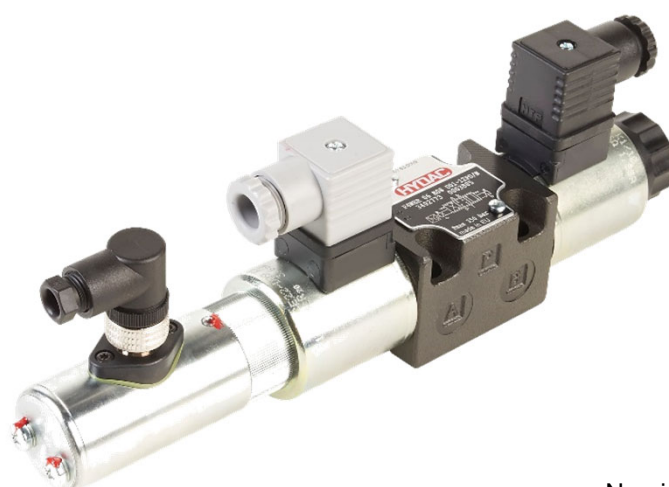
DESCRIPTION

HYDAC proportional valves of the P4WER series combines directional control with speed control of the consumer.

The controlled volume flow is proportional to the electrical input signal on the valve electronics.

FEATURES

- High nominal flow due to optimized, cast casing
- Low hysteresis due to precision machining of moving parts
- Easy interchangeability due to internationally standardised interface ISO 4401
- With integrated transducer
- Electronic control by EHCD (see brochure 2.429.2)



Nominal size 6
up to 40 l/min
up to 350 bar

CONTENT

Description	1
Features	1
Model code	2
Spool types / Symbols	2
Technical Data	3
Function	3
Section view	3
Accessories	3
Performance	4
Transducer	5
Dimensions	6

MODEL CODE

P4WER 06 E 16 D01 – 24 PG /V

Type
Proportional directional valve with integrated transducer

Nominal size (NG)
6

Symbol
see page 2

Nominal flow (at $\Delta p = 10 \text{ bar}$, $P \rightarrow T$)
08 = 8 l/min
16 = 16 l/min
26 = 26 l/min

Series
D01 = standard with manual override

Rated voltage of the solenoid coil
12 = 12 VDC

Coil type
PG = DIN connector to EN175301-803

Sealing material
V = FKM (standard)
N = NBR

SPOOL TYPES / SYMBOLS

Type	Basic symbol	Type	Basic symbol
E		Q	

FUNCTION

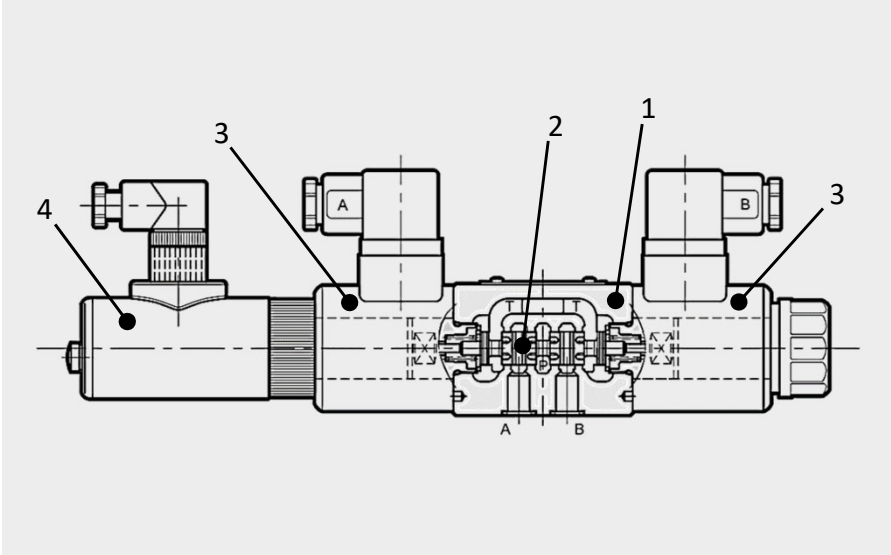
The proportional valves of the P4WER series are direct-acting valves with integrated transducer. The volume flow is controlled continuously (proportionally) to the electrical input signal at the solenoid coil. The valve consists of a valve casing (1), a control piston (2), as well as the transducer (4) and two proportional solenoids (3).

According to the input signal, the solenoid generates a force and shifts the piston against a spring. This releases cross-sections, which define the size of the volume flow, depending on the pressure difference at the relevant control element.

For electronical control of the coil there are electronic controls available (see brochure 2.429.2).

1. Hint:
Vent system and valve before setting in motion.
2. Hint:
The valve is only available in 12V coil version. A 24VDC powered control electronics supplies the transducer and enables improved dynamic values.

SECTION VIEW



ACCESSORIES

	Designation	Part no.
Seal kits	9,25 x 1,78 90 Sh FKM	3524413
(4-part set)	9,25 x 1,78 90 Sh NBR	3524355
Mounting screws	ISO 4762 M5 x 30	3524313
(4-part set)		
Control module EHCD*	AM005XXXU	6158999

*For further information see brochure "Control modules for hydraulic drives -EHCD" catalogue-24000.2/10/14 or contact customer support EHCD@hydac.com.

TECHNICAL DATA ¹

General specifications			
MTTF _d :		150 - 1200 years, according to DIN EN ISO 13849-1:2016; Table C.1, confirmation of ISO 13849-2:2013; Tables C.1 and C.2	
Ambient temperature:		[°C]	-20 to +60
Installation position:		No orientation restrictions	
Weight:		[kg]	2,3
Material:		Valve casing:	Cast iron
		Name plate:	Aluminium
Surface coating:		Valve casing:	Phosphate
Hydraulic specifications			
Operating pressure:		[bar]	Port P, A, B: p _{max} = 350 Port T: p _{max} = 210
max. flow: (Δp = 10 bar, P→T)		[l/min]	40
Operating fluid:		Hydraulic oil to DIN 51524 part 1, 2 and 3	
Media operating temperature range:		[°C]	-20 to +80
Viscosity range:		[mm²/s]	10 – 400
Permitted contamination level of operating fluid:		class 18/16/13 to ISO 4406	
Sealing material:		NBR, FKM (standard)	
Electrical specifications			
Switching time (0 → 100%):		[ms]	30
Switching time (100% → 0):		[ms]	25
Type of voltage:		DC	
Rated voltage:		[V]	12
Nominal current:		[A]	1,88 at 12 VDC
Resistance at 20°C:		[Ω]	3,66 at 12 VDC
Hysteresis:		[%]	< 1,5 of Q _{max}
Repeatability:		[%]	< ±1,0 of Q _{max}
Protection class to DIN EN 60529:		with electrical connection “G “ IP65 ²	

¹ see „Conditions and Instructions for Valves“ in brochure 53.000

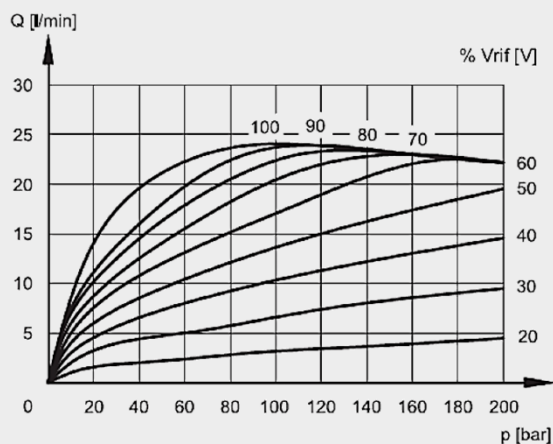
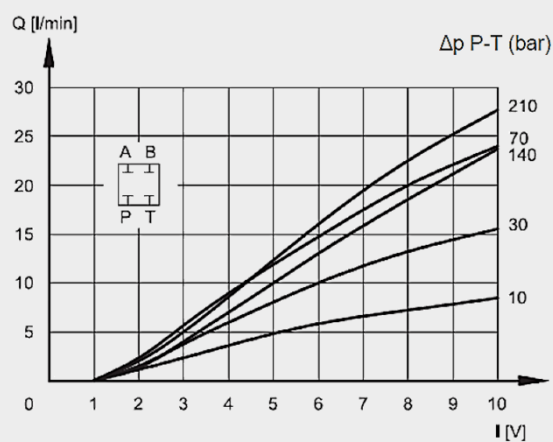
² if installed correctly

PERFORMANCE

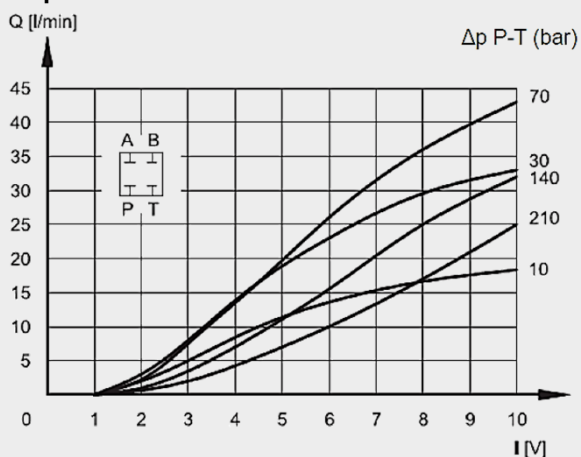
measured at $T_{oil} = 50^{\circ}\text{C}$ and $36 \text{ mm}^2/\text{s}$

The performance curves represent typical flow curves for different valve pistons. The first curve shows the flow value at constant Δp , depending on the solenoid current. The second curve describes the dependency of flow value and Δp at constant solenoid current. The total valve pressure drop (Δp) was measured between port P and T of the valve.

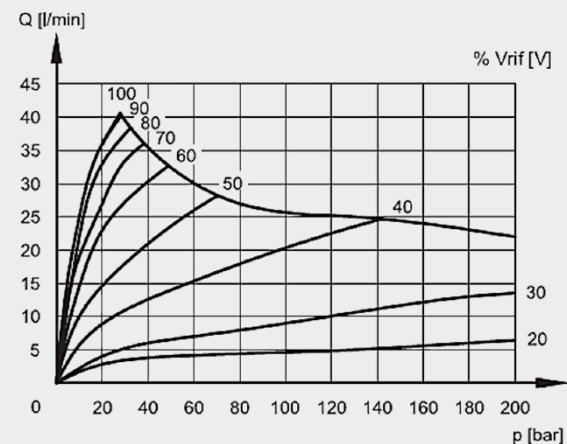
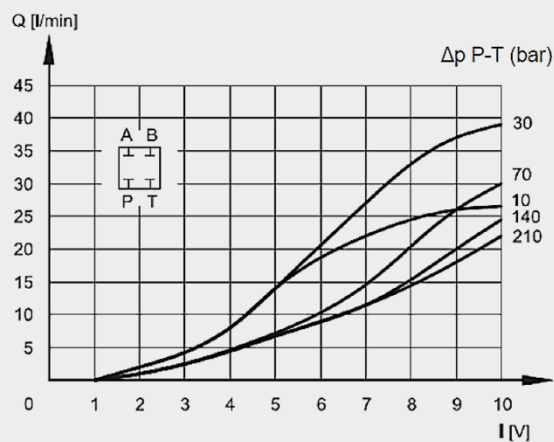
E 08 spool



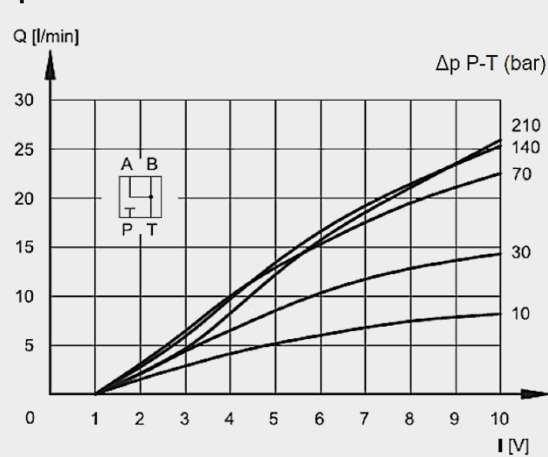
E 16 spool



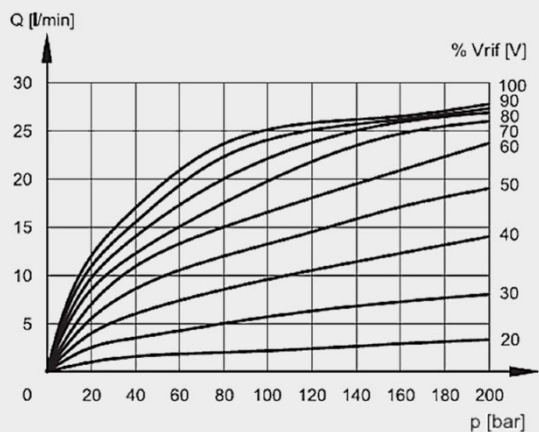
E 26 spool



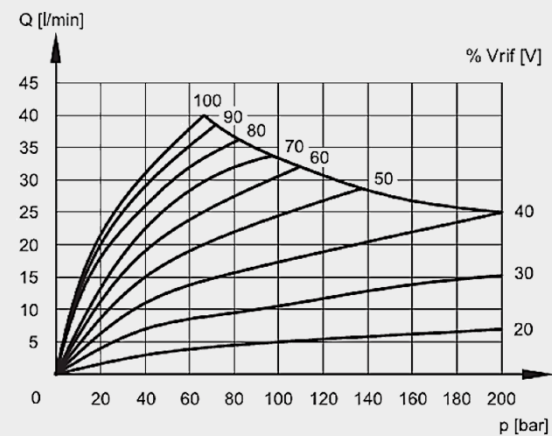
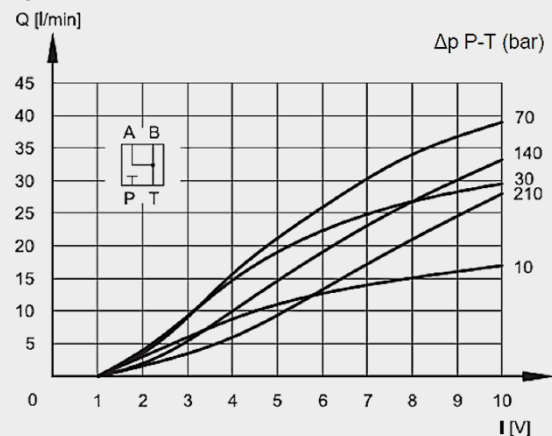
Q 08 spool



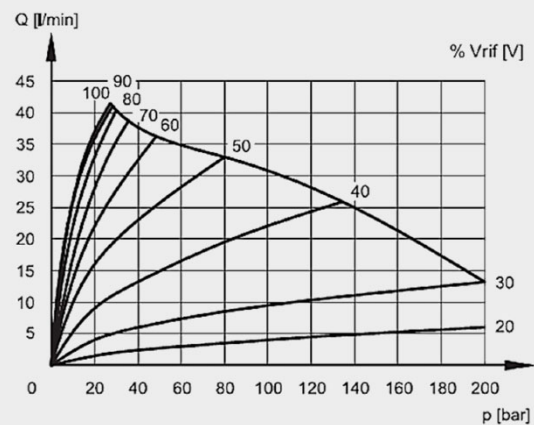
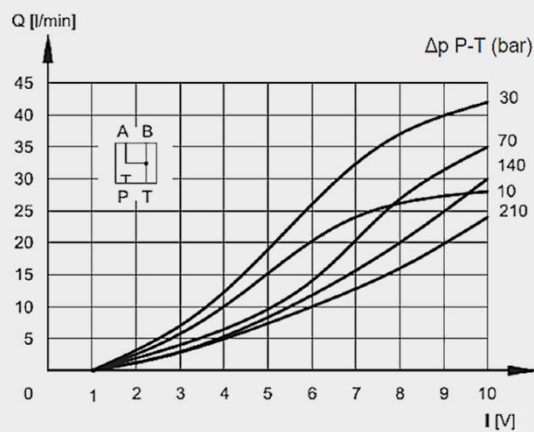
PERFORMANCE



Q 16 spool



Q 26 spool

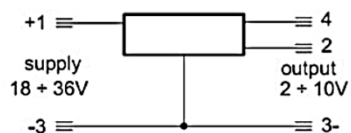
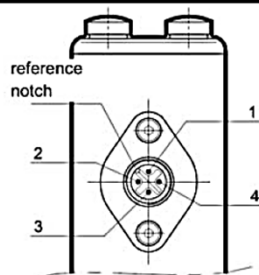


TRANSDUCER

position transducer – electrical connection

Pin 1 | supply 18 ÷ 36 V
Pin 2 | output 2 ÷ 10 V
Pin 3 | 0 V
Pin 4 | NC

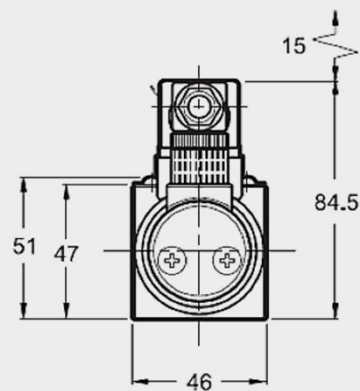
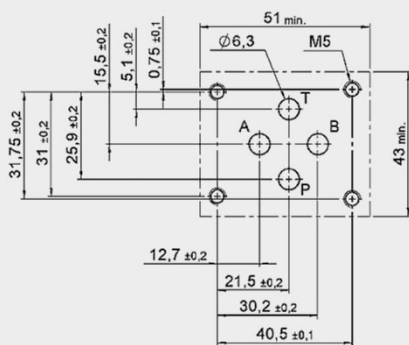
Pin 8c
Pin 24a
Pin 22c
NC



DIMENSIONS

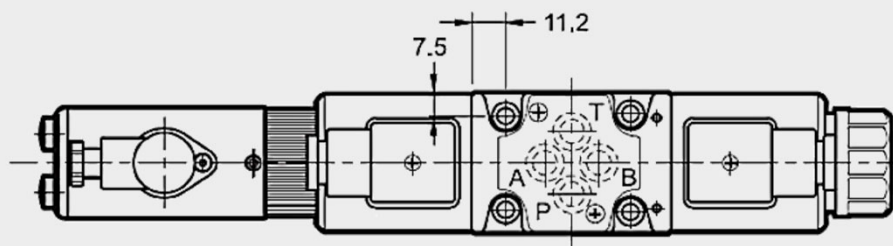
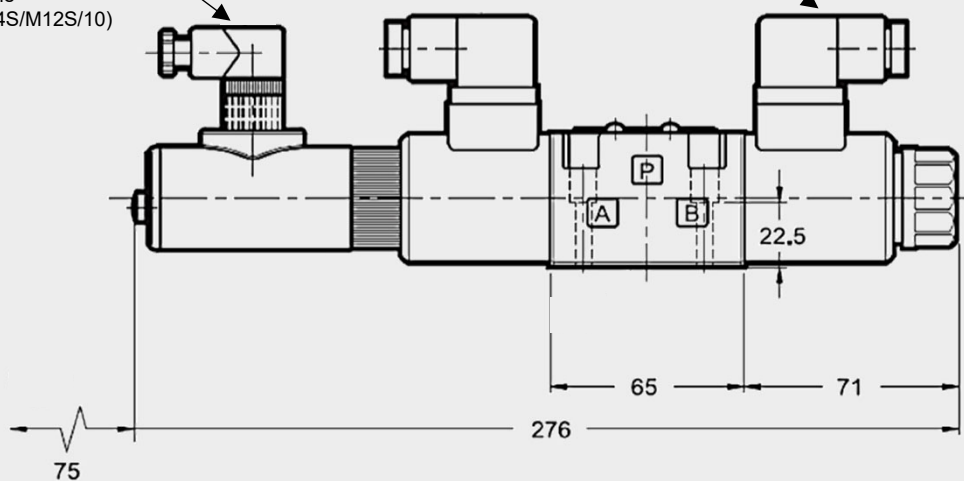
INTERFACE

ISO 4401-03-02-0-05



Electrical
connection
4 pole
(EC4S/M12S/10)

Connector to
EN175301-803



Mounting screws (ISO 4762): 4 pcs M5 x 30 A10.9 (not included in delivery)
Torque: 5 Nm

Note

The information in this brochure relates to the operating conditions and applications described. For applications not described, please contact the relevant technical department.
All technical details are subject to change without notice.

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: valves@hydac.com