HYDAC INTERNATIONAL

Proportional flow regulator pressure compensated, direct-acting with transducer
VP-P2SRR6

DESCRIPTION

HYDAC direct-acting flow control valves are 2-way proportional valves with transducer.
The valve keeps the required volume flow constant due to a control process. The volume flow is largely independent of pressure and viscosity.
The valve consists of a pressure compensator and a proportionally adjustable orifice.

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

FEATURES

- Interface according toISO 6263-03-03-0-97 (Cetop 4.5.2-2-03-250)
- Small hysteresis by superfinish of moving parts
- Electronic control by EHCD (see brochure 2.429.2)

Nominal size 6
up to 25 l/min
up to 250 bar

CONTENT

MODEL CODE

VP-P2SRR 6 L 16 R D01 – 24 PG / V

Type
Proportional flow control valve with transducer, direct-acting

Nominal size
6

Performance
L = linear

Nominal volume flow
01 = 1,5 l/min
04 = 4 l/min
08 = 8 l/min
16 = 16 l/min
25 = 25 l/min

Check valve
R = Check valve

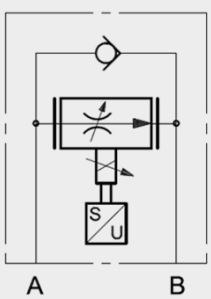
Series
D01 = standard

Rated voltage of the solenoid coil
24 = 24 VDC

Coil type
PG = Proportional device connector

Sealing material
V = FKM (standard)
N = NBR

SPOOL TYPES / SYMBOLS



ACCESSORIES

	Designation	Part no.
Seal kits (2-part set)	14 x 2 -FKM -90 Sh	3526085
	14 x 2 -NBR -90 Sh	3526072
Mounting screws (4 pcs)	DIN EN ISO 4762-M5x65–10.9	688208

FUNCTION

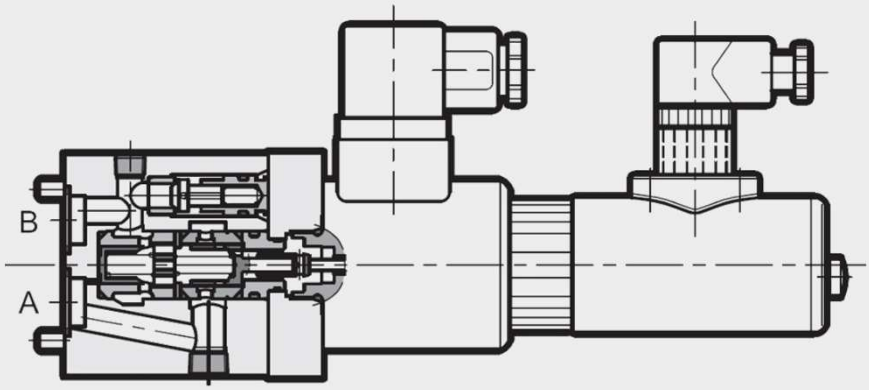
The VP-P2SRR 6 is a direct-acting 2-way flow control valve with transducer.
The proportional valve controls volume flow from port A to port B independently of the pressure.
In the opposite direction there is free flow trough the check valve without control.
The controlled flow rate is proportional to the electrical input signal at the coil. Analogue to the size the coil creates a force which pushes the piston against the spring. Hereby opening diameters are opened which determine the size of the flow independent from the pressure differential.
A built-in pressure compensator enables the regulation independent from pressure changes from port A to B.
For electronical control of the coil there are electronic controls available (see brochure 5.249.4).

Hint:
Bleed system and valve before setting in motion.

Transducer

The VP-P2SRR6 valve uses an LVDT type position transmitter with an amplified signal that allows precise control of the position of the throttle, and therefore of the regulated flow. This improves repeatability and hysteresis. The position transmitter is mounted coaxially to the proportional solenoid coil. The DIN connector can be moved 360°. The position transmitter is protected against polarity inversion on the power line.

SECTION VIEW



TECHNICAL DATA [1]

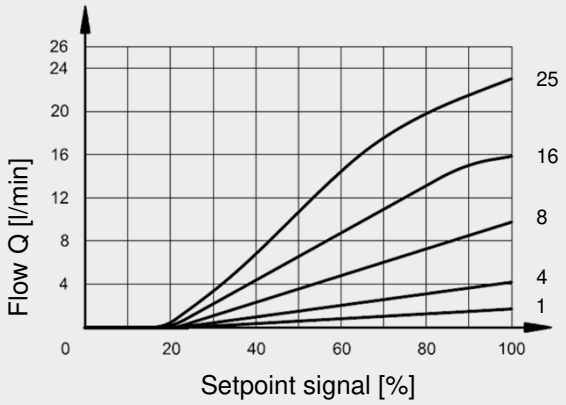
General specifications		
MTTFd		According to EN ISO 13849-1:2015 chart C1 & C2
Ambient temperature	[°C]	-10 to+50
Installation position		No orientation restrictions
Weight	[kg]	2,2
Material		Valve casing: Cast iron Name plate: Aluminium
Surface coating		Valve casing: Phosphate plated
Hydraulic specifications		
Operating pressure	[bar]	Port A, B: p_{max} = 250
Volume flow range (at Δp A → B min. 10 bar)	[bar]	0 up to 1,5 0 up to 4 0 up to 8 0 up to 16 0 up to 25 (40 in opposite direction B → A)
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 to400 (25 is recommended)
Permitted contamination level of operating fluid		class 18/16/13 to ISO 4406 or 17/15/12 for flows < 0,5 l/min
Sealing material		FKM (standard), NBR
Electrical specifications		
Switching time	[ms]	On: 180 (0 - 100%) 150 (25 - 100%) Off: 150 (100 - 0%) 120 (100 - 25%)
Type of voltage		DC
Rated voltage	[V]	24
Resistance at 20°C	[Ω]	17,6
Rated current	[A]	0,86
Duty cycle	[%]	100
Hysteresis	[%]	< 2,5 of Q_{max}
Repeatability	[%]	±1 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

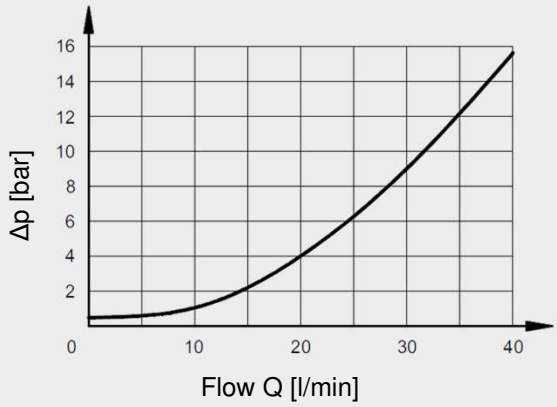
PERFORMANCE

measured at v = 36 mm²/s and T_{oil} = 50°C

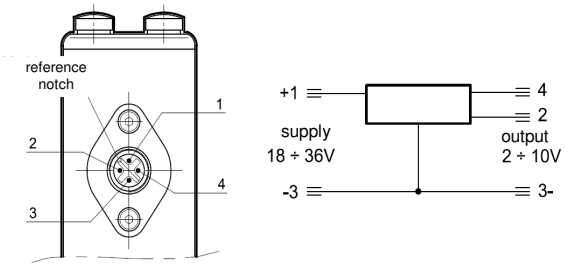
Flow control Q = f(I)
from port A → B



Pressure drop Δp = f(Q)
with free flow fom port B → A through the check valve



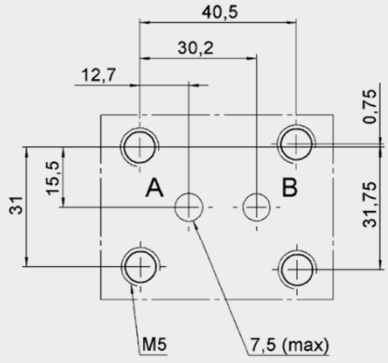
TRANSDUCER

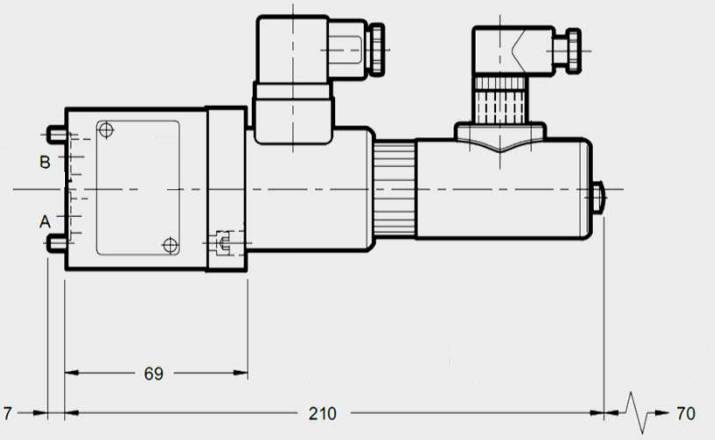


Transducer connection		Electronic card connection
PIN 1	Supply 18 ÷ 36 V	PIN 8c
PIN 2	Output 2 ÷ 10 V	PIN 24a
PIN 3	0 V	PIN 22c
PIN 4	NC	NC

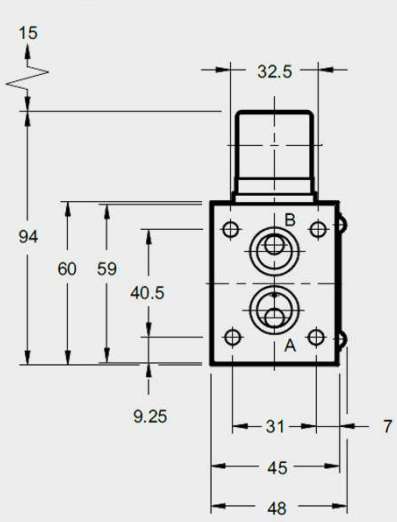
DIMENSIONS

Interface according to ISO 6263-03-03-0-97





Mounting screws
(not included in delivery)
DIN EN ISO 4762 – M5x65 – 10.9
Tightening 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.

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