

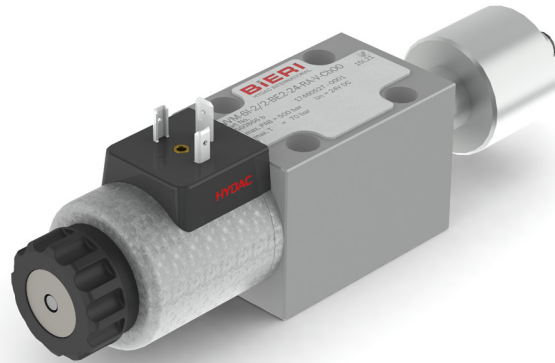
Directional poppet valves with position monitoring

Type WVM-6I-R

NG 6 ISO
up to 12 l/min, up to **500 bar**

Features

- Directly operated
- Poppet tight
- Position monitored with dirt resistant monitoring concept
- Good corrosion resistance
- High operational safety and reliable switching
- High duty cycles and long lifetime
- An overlap area on the poppet ensures that the possible flow in the switching points near the seats is limited to a minimum.
- Positive switching overlap (3/2 valves)



Applications

- Hydraulic controls according to DIN EN ISO 13849
- Controlling of cylinders in higher pressure ranges
- Clamping technology & jig construction
- Machine tools - auxiliary functions
- Forming technology - clamping
- Presses, test benches and systems
- Lifting and transport systems
- Hydraulic tools

Design

- Pressure compensated, hardened and specially grinded valve cones
- With sealed manual override
- As 2/2 or 3/2 valve with solenoid control
- 360° turnable and exchangeable plug-in coil
- Integrated check valve and orifices available
- With 1 or 2 position monitoring
- Non-contact low hysteresis transistor switches
- Return pressure stop available on request

Technical data

Hydraulic fluid	mineral oil according to DIN 51524 (other fluids on request)
Fluid temperature range	- 20 to 80 °C
Ambient temperature range	- 30 to 50 °C
Viscosity range	5 to 400 mm ² /s
Porting	NG 6 according to DIN 24340 / ISO 4401 / CETOP RP 121 H
Max. operating pressure connection P, A, B	500 bar
Max. operating pressure connection T	70 bar (WVM-6I-3/2-D = 500 bar)
Max. flow rate	12 l/min
Filtration (recommendation)	according to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12
Duty cycle DC	100%
Solenoid voltage (nominal power)	24 VDC (30 W)
Voltage tolerance	+/- 10%
Switching time	40 - 110 ms
Degree of protection	IP 65 according to EN 60529 / DIN 40050 (or according coil choice)
Weight	1.8 kg with solenoid / 1.5 kg without solenoid
Material	corrosion resistant steel (Solenoid coil: ZnNi-plated (1000 h salt spray test))

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Type code

		Additional elements																								
Example		WV	M	-	6I	-	2	/	2	-	E2	-	24	-	R0A	-	V	-	A	10	-	RV	-	A		00
Directional poppet valves																										
Size	500 bar																									
Nominal size	6 ...																									
Connection ISO	... I																									
Number of ports	2 or 3																									
Number of positions	2, 3 or 4																									
Control functions	See overview "Product information"																									
Control method	0 without solenoid 24 solenoid 24 VDC																									
Monitored position	RO 0 RA a R0A 0, a																									
Seal material	V FKM																									
Connection for orifice	P P-connection (pressure) A A-connection B B-connection T T-connection (tank)*																									
Orifice-Ø	05 0.5 mm 07 0.7 mm 10 1.0 mm 14 1.4 mm 20 2.0 mm																									
Check valve	RV plug in check valve in P-connection																									
		Design 00 ... 99 For internal purposes																								
		Index Please leave blank For internal purposes																								
		Design revision For internal purposes																								

* Safety note: Select orifice with regard to permissible tank pressure!

Product information

Monitored position	R0	RA	ROA	PIN
Signal value				— 2 - - - 4
Valve type	2/2			
Control function	E2			
Part No. without solenoid	4560831	4560832	4560834	
Part No. 24 VDC	4450900	4450899	4450896	
Symbol				
Valve type	2/2			
Control function	BE2			
Part No. without solenoid	4560865	4560866	4560867	
Part No. 24 VDC	4450903	4450902	4450901	
Symbol				
Valve type	2/2			
Control function	E4			
Part No. without solenoid	4560869	4560870	4560871	
Part No. 24 VDC	4450892	4450887	4450885	
Symbol				
Valve type	2/2			
Control function	BE4			
Part No. without solenoid	4560872	4560873	4560874	
Part No. 24 VDC	4450895	4450894	4450893	
Symbol				

Monitored position	R0	RA	ROA	PIN
Signal value				— 2 - - - 4
Valve type	3/2			
Control function	D			
Part No. without solenoid	4560895	4560896	4560897	
Part No. 24 VDC	4450864	4347427	4347455	
Symbol				
Valve type	3/2			
Control function	Y			
Part No. without solenoid	4560898	4560899	4560900	
Part No. 24 VDC	4450863	4344658	4344641	
Symbol				

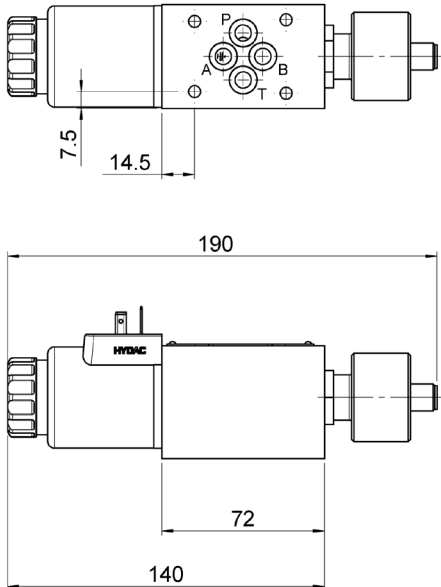
Usual flow direction

Type WVM-6I-R

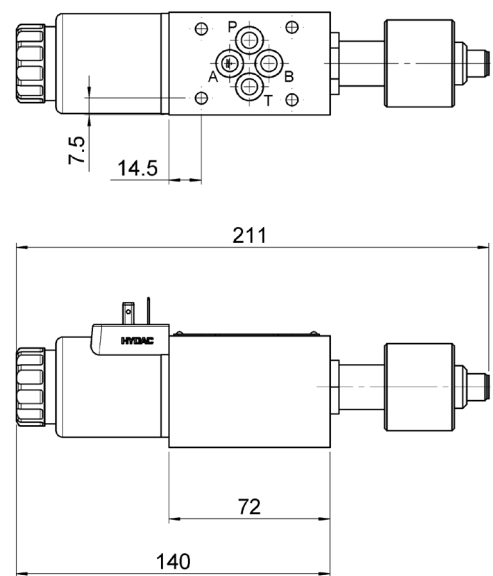
NG 6 ISO
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Dimensional drawings

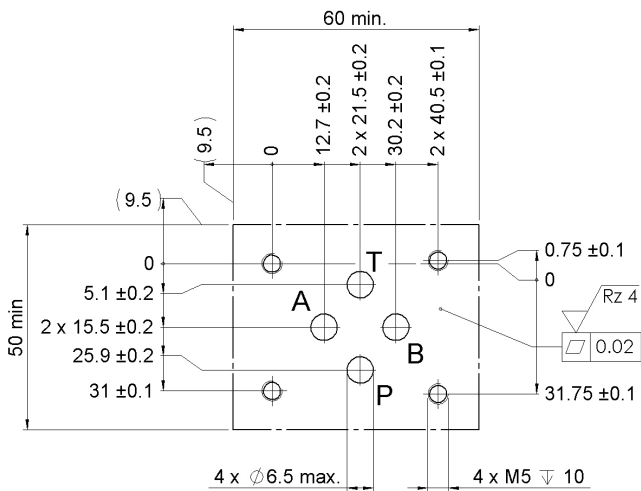
Monitored position R0 and RA



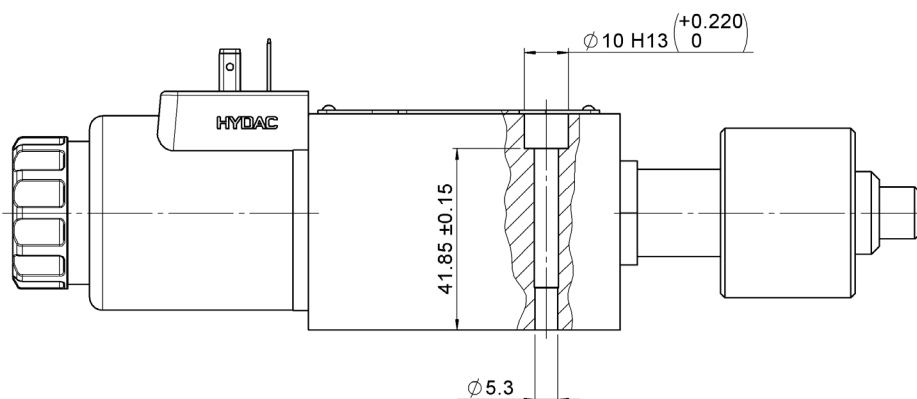
Monitored position ROA



Drilling pattern

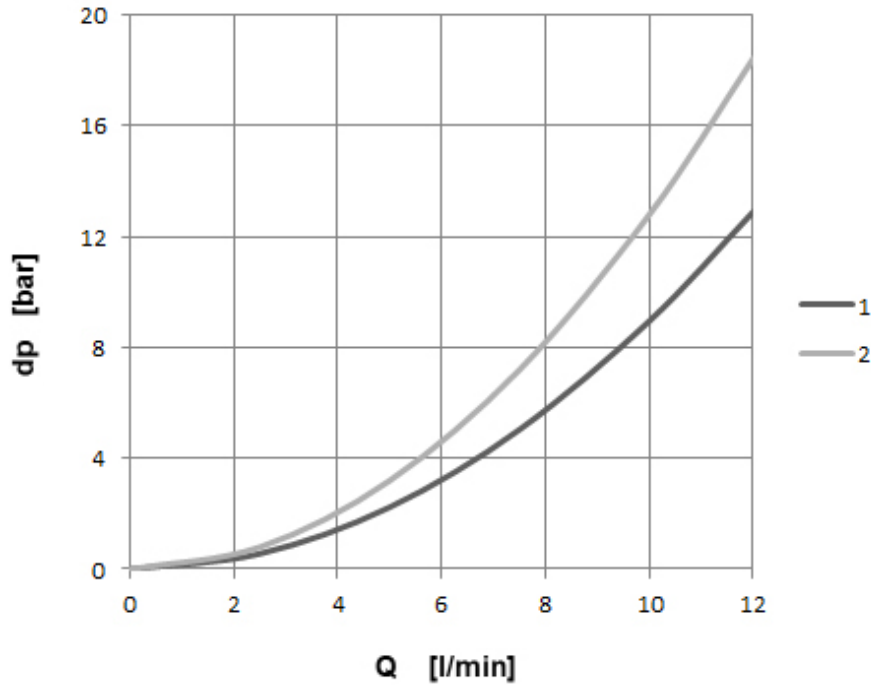


Mounting screws / clamping length



Pressure drop

($v = 32 \text{ mm}^2/\text{s}$)

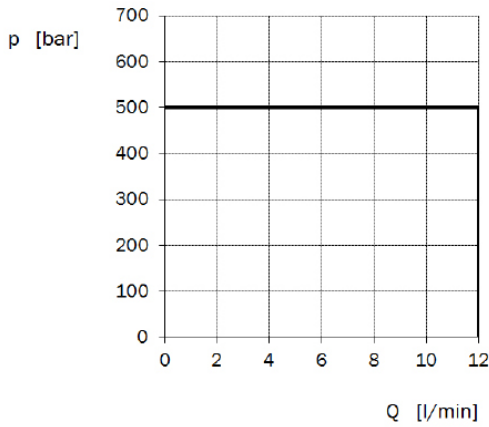


Valve type	Control function	a			0 (+)		
		P-A	A-T	P-T	P-A	A-T	P-T
2/2	E2	2					
2/2	BE2				1		
2/2	E4			2			
2/2	BE4						1
3/2	D		1		2		
3/2	Y	2				1	

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Hydraulic switching capacity



Hydraulic switching capacity at rated voltage and ambient temperature $T_a = 50^\circ \text{C}$
 $v = 32 \text{ mm}^2/\text{s}$

Applies to all valves (control functions)!

Switch on current I_{ON}
 $I_{\text{ON}} \geq 0.7 \times I_N$

Switch off current I_{OFF}
 $I_{\text{OFF}} \leq 0.07 \times I_N$

Switching times

Valve type	Control function	Switching on [ms]*		Switching off [ms]*
		at operating temperature ($0.7 \times I_N$)	cold ($1 \times I_N$)	
2/2	E2, BE2	110	50	25
2/2	E4, BE4	60	40	25
3/2	D	110	50	25
3/2	Y	60	40	25

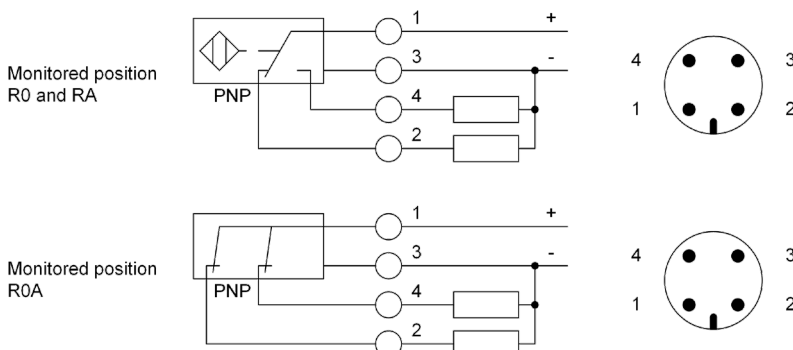
* indicative values

Data (sensor)

Voltage	20 - 32 VDC
Power tolerance	+/- 10%
Max. output load	400 mA each
Connection	M12x1/4-pole
Electromagnetic Compatibility	DIN EN 61000-6-1/2/3/4
Permissible acceleration	1-Point: 20g (0 ... 500 Hz), shock 50g 2-point: 5g (0 ... 500 Hz), shock 20g
Permissible ambient humidity	max. 95% rel. (according to DIN 40040)

PIN configuration

1	24 V
2	Signal (voltage according to supply voltage)
3	0 V
4	Signal (voltage according to supply voltage)

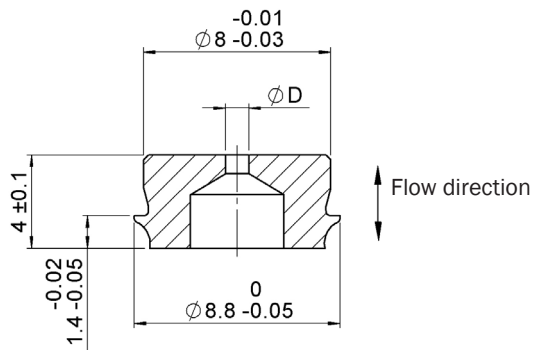


Accessories

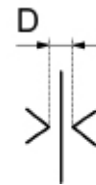
Orifice for P-, A-, B-, T-connection

Part description	Type code	Part No.
Orifice \varnothing 0,5	BL700-6-D8-0,5-A*00	3687934
Orifice \varnothing 0,7	BL700-6-D8-0,7-A*00	3687956
Orifice \varnothing 1,0	BL700-6-D8-1,0-A*00	3687961
Orifice \varnothing 1,4	BL700-6-D8-1,4-A*00	3656890
Orifice \varnothing 2,0	BL700-6-D8-2,0-A*00	3687970

Dimensional drawing



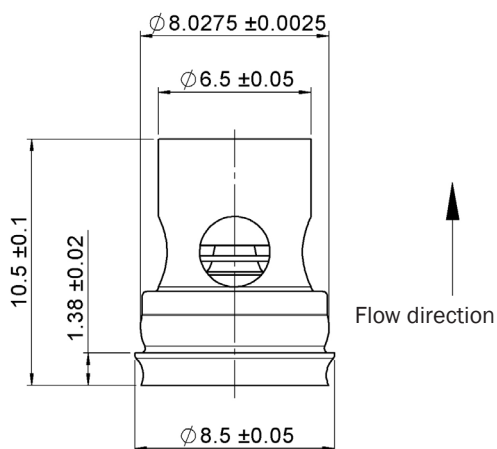
Symbol



Check valve for P-connection

Part description	Type code	Part No.
Check valve (fitting in connection P)	RV500-6-D8-V-A*00	4269275

Dimensional drawing



Symbol

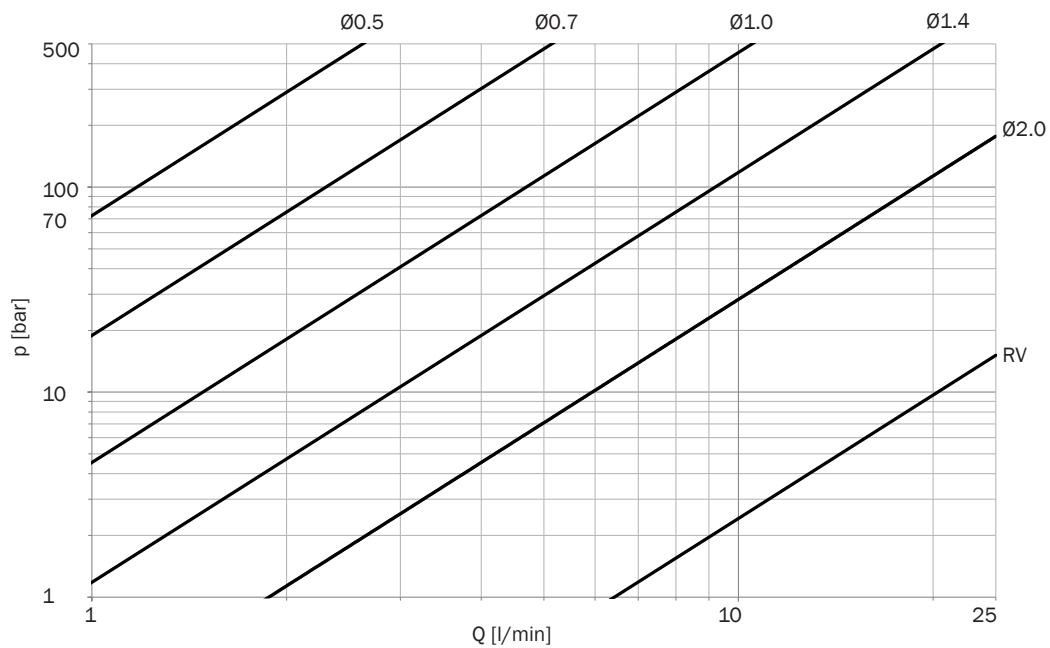


Load change B10d 6 million according to ISO 13849-1

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Drop pressure



Solenoid coil

All WVM-6I valves are supplied with solenoid coil 4244171 as standard. Optionally, other solenoid coils of the Coil-50-2345 series according to the table below can also be used.

The valve „without solenoid coil“ (control type „0“ in the type code) and the solenoid coil have separately. Coil nut and O-ring are supplied with the valve.

Connection	DIN 436050	Junior Timer	Litz wire	Deutsch DT04
Protection ¹	radial IP65	axial IP67	300 mm long IP67	axial IP67
12 V Part No.	4244169	on request	on request	on request
24 V Part No.	4244171	on request	on request	on request
110 VAC Part No.	3586364 ²	on request	on request	on request
230 VAC Part No.	3586396 ²	on request	on request	on request

¹ Important note: The protection class applies to the solenoid coil. The precondition is the proper assembly of the mating connector and the same or better protection class of the mating connector.

² Rectifier is integrated in the solenoid coil

Part description	Part No.
1 x Plug for solenoid grey	6132484
1 x Plug for solenoid black	3728850
1 x Plug for solenoid with rectifier / grey	3681390
1 x Plug for solenoid with rectifier / black	3671158
1 x Power reduction plug LRS2 KPL Z4 TR 2POL LED	4747017
4 x Socket head screw ISO 4762-M5 x 50-12.9	4455691

Spare parts

Part description	Part No.
4 x O-Ring 9,25 x 1,78, FKM	4455692
1 x Pole tube nut	914555
1 x O-Ring for pole tube nut	616992

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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.