

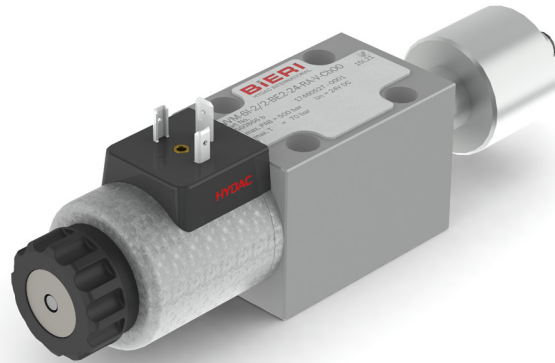
Directional poppet valves with position monitoring

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
- 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
- Return pressure stop available on request
- Patented functional principle
- With 1 or 2 position monitoring
- Non-contact low hysteresis transistor switches

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	-	ROA	-	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 ROA 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				

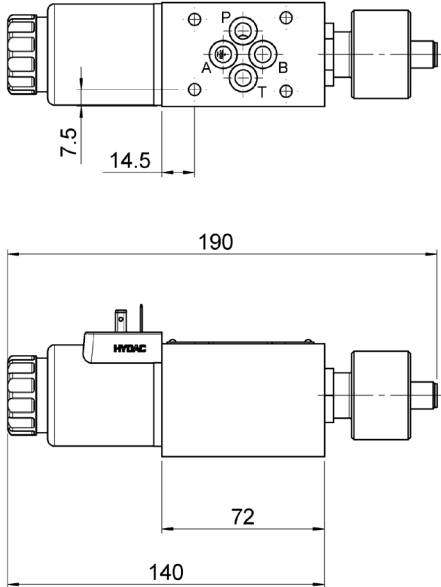
Usual flow direction

Type WVM-6I-R

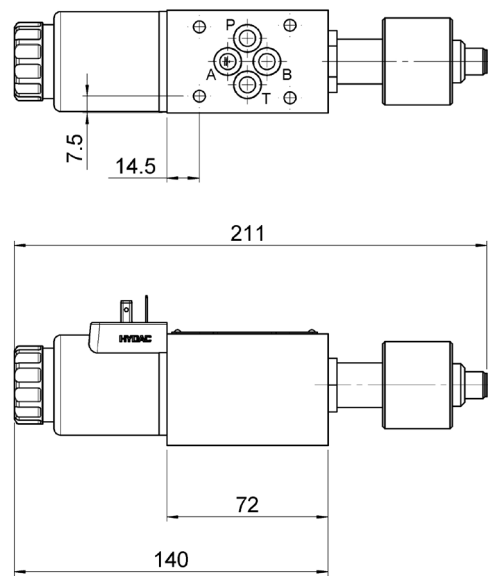
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Dimensional drawings

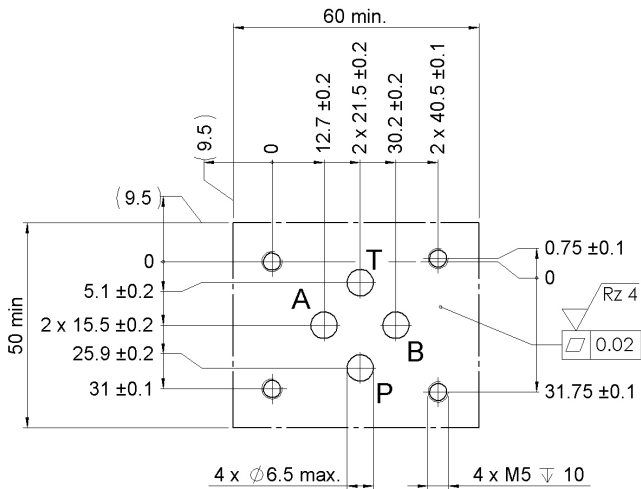
Monitored position R0 and RA



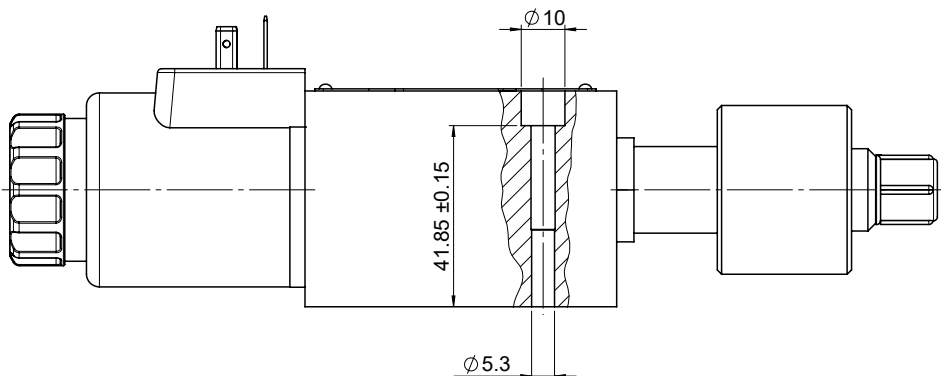
Monitored position ROA

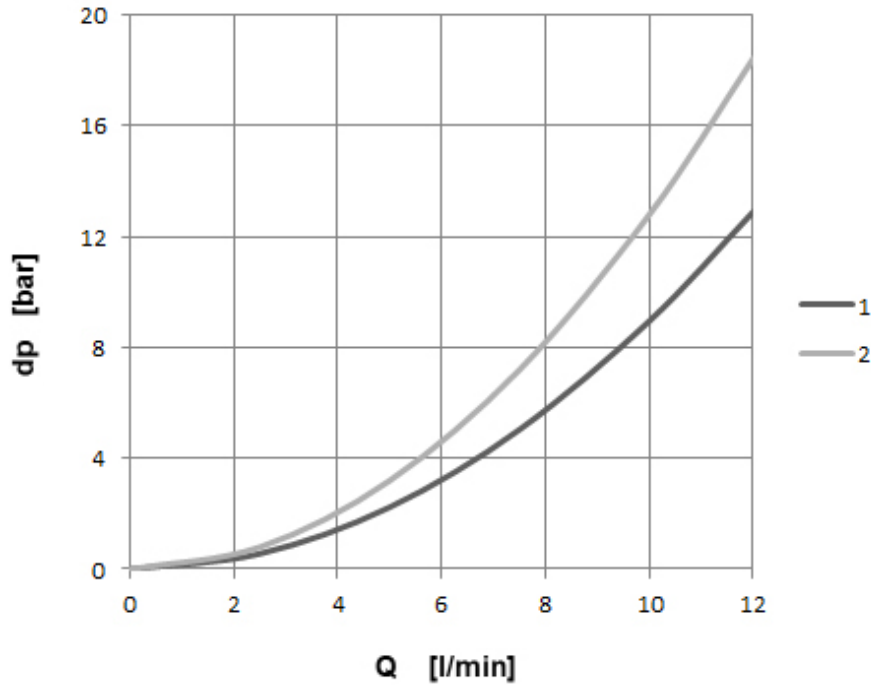


Drilling pattern



Mounting screws / clamping length



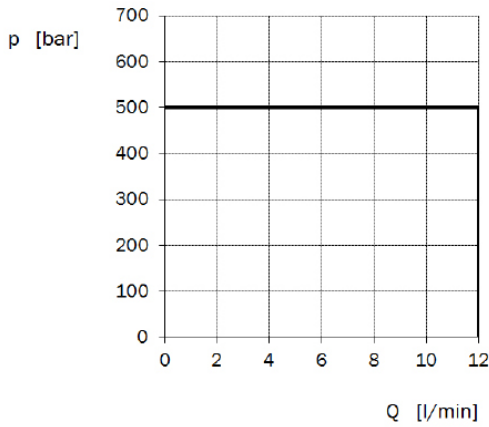
Pressure drop $(v = 32 \text{ mm}^2/\text{s})$ 

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

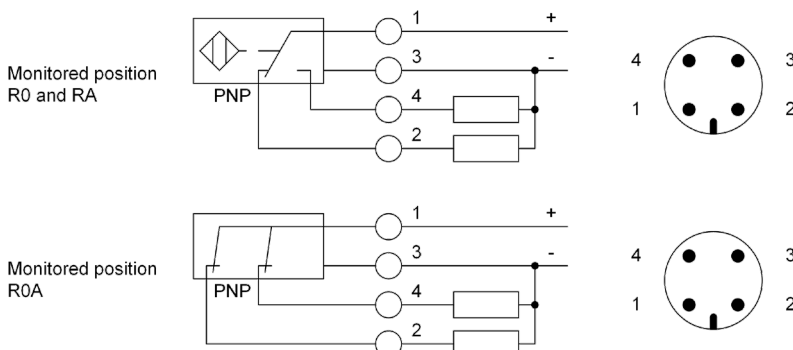
* indicative values

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

see technical data sheet WVM-6I

Spare parts

see technical data sheet WVM-6I