

Solenoid valves VZWM-L, NPT

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Key features and type codes

General

- Indirectly actuated diaphragm valve
- Process valve connection
N14 ... N2
- Flow rate
1,400 ... 31,000 l/min
- Available in brass or stainless steel casting
- Wide range of coils

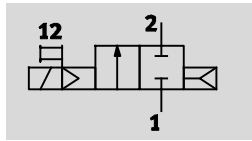
VZWM – L – M22C – N14 – F4 –	
Type	
VZWM	Solenoid valve, process directional control valve
Design	
L	In-line valve
Valve function	
M22C	2/2-way valve, normally closed
Process valve connection	
N14	NPT1/4
N38	NPT3/8
N12	NPT1/2
N34	NPT3/4
N1	NPT1
N114	NPT1 1/4
N112	NPT1 1/2
N2	NPT2
Electrical connection	
F4	MD-2-With armature tube for solenoid coil MD-2- ... -PA (system 8)
F5	MH-2-With armature tube for solenoid coil MH-2- ... -PA (system 13)
Housing material	
R1	Stainless steel casting
	Brass

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Technical data

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Function



-  - Flow rate
1,400 ... 31,000 l/min

-  - Voltage
24 V DC
110, 230 V AC



General technical data									
Process valve connection		NPT1/4	NPT3/8	NPT1/2	NPT3/4	NPT1	NPT1 1/4	NPT1 1/2	NPT2
Nominal size (DN)	[mm]	13.5	13.5	13.5	27.5	27.5	40	40	50
Valve function	2/2-way, single solenoid								
Design	Diaphragm valve								
Sealing principle	Soft								
Actuation type	Electric								
Reset method	Pneumatic spring								
Type of control	Piloted								
Direction of flow	Non-reversible								
Exhaust function	No flow control								
Manual override	None								
Type of mounting	In-line installation								
Mounting position	Preferably vertical								
Standard nominal flow rate	[l/min]	1,400	2,100	2,400	10,000	11,700	24,000	26,400	31,000
Flow rate Kv	[m³/h]	1.6	2	2.4	8.5	10.7	21.3	27.4	39
c value	[l/sbar]	6	8.8	9.8	39	41	75	82	110
b value		0.3	0.35	0.37	0.5	0.5	0.6	0.67	0.68
Pressure differential	[bar]	0.5	0.5	0.5	0.5	0.5	0.7	0.7	0.7
Materials	Housing	Brass or stainless steel casting							
	Diaphragm	Nitrile rubber							
	Armature tube	High-alloy steel							
Note on materials		Contains PWIS (paint-wetting impairment substances)							
Max. tightening torque	Connecting thread	[Nm]	35	60	105	200	350	450	540
	Cover screw	[Nm]	20	20	20	30	30	30	30
	Coil mounting	[Nm]	2	2	2	2	2	2	2

Operating and environmental conditions										
Process valve connection			NPT1/4	NPT3/8	NPT1/2	NPT3/4	NPT1	NPT1 1/4	NPT1 1/2	NPT2
Operating medium			Compressed air in accordance with ISO 8573-1:2010 [7:4:4]							
			Neutral liquids							
			Inert gases							
			Water							
Note on operating/pilot medium			Operation with lubricated medium required							
Process valve operating pressure	Gases	[bar]	0.5 ... 10				0.7 ... 10			
	Liquids	[bar]	0.5 ... 6				0.7 ... 6			
Ambient temperature ¹⁾		[°C]	-10 ... +60							
Temperature of medium	Gases	[°C]	-10 ... +60							
	Liquids	[°C]	5 ... 50							
Max. viscosity		[mm²/s]	22							
Corrosion resistance class CRC ²⁾	Brass		1							
	Stainless steel casting		3							

1) Note ambient temperature of solenoid coils

2) Corrosion resistance class 1 according to Festo standard 940 070

Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Corrosion resistance class 3 according to Festo standard 940 070

Components subject to high corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

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Technical data

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Valve switching times										
Process valve connection			NPT1/4	NPT3/8	NPT1/2	NPT3/4	NPT1	NPT1 1/4	NPT1 1/2	NPT2
Gases										
Switching time	Off	[ms]	10	10	10	12	12	20	20	21
	On	[ms]	8	8	8	15	15	26	26	62
Liquids										
Switching time	Off	[ms]	200	210	220	930	930	1,900	2,000	2,800
	On	[ms]	100	110	110	400	400	1,400	1,400	2,100
Switching time of variant R1	Off	[ms]	210	190	200	950	950	1,900	2,000	2,800
	On	[ms]	80	110	110	420	300	1,400	1,400	2,100

Electrical data										
			NPT1/4	NPT3/8	NPT1/2	NPT3/4	NPT1	NPT1 1/4	NPT1 1/2	NPT2
Electrical connection			F4, with armature tube for solenoid coil MD-2- ... -PA (system 8), must be ordered separately					MH-2-F5, with armature tube for solenoid coil MH-2- ... -PA (system 13), must be ordered separately		
Operating voltage	DC voltage	[V DC]	24							
	AC voltage	[V AC]	110/230 (50 ... 60 Hz)							
Coil characteristics	DC voltage	[W]	6.8					7.9		
	AC voltage	[VA]	Pull: 14.5 Hold: 10.5					14		
Protection class to EN 60529			IP65 (with plug socket)							

Weight [g]										
Brass housing					Stainless steel casting housing					
VZWM-L-M22C-N14-F4	500				VZWM-L-M22C-N14-F5-R1	400				
VZWM-L-M22C-N38-F4	450				VZWM-L-M22C-N38-F5-R1	400				
VZWM-L-M22C-N12-F4	415				VZWM-L-M22C-N12-F5-R1	400				
VZWM-L-M22C-N34-F4	1,220				VZWM-L-M22C-N34-F5-R1	1,200				
VZWM-L-M22C-N1-F4	1,200				VZWM-L-M22C-N1-F5-R1	1,100				
VZWM-L-M22C-N114-F5	2,700				VZWM-L-M22C-N114-F5-R1	2,600				
VZWM-L-M22C-N112-F5	2,510				VZWM-L-M22C-N112-F5-R1	2,500				
VZWM-L-M22C-N2-F5	4,000				VZWM-L-M22C-N2-F5-R1	3,700				

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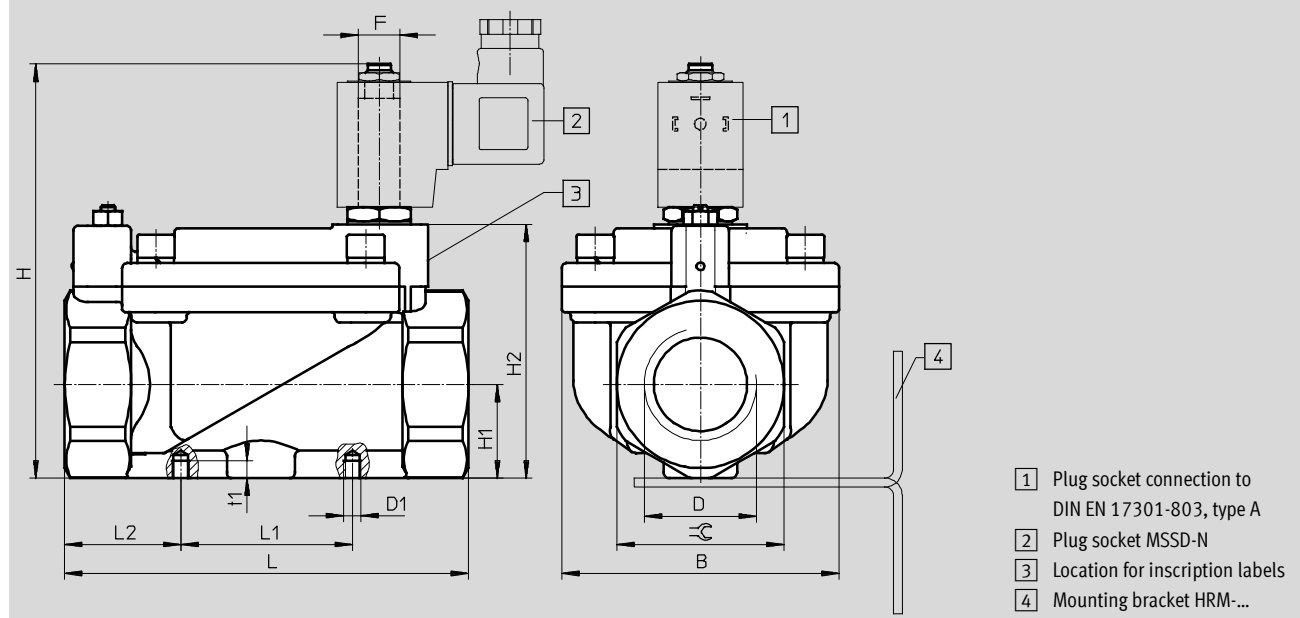
Technical data

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Dimensions

Download CAD data → www.festo.com

2/2-way valve



Type	B ±1.5	D	D1	H ±2	H1 ±1.5	H2 ±1	L ±2	L1 ±1.5	L2	F	t1 ±1.5	≈
VZWM-L-M22C-N14-F4	48	NPT1/4	M4	85.5	15	49	67	25	21	F5	4	27
VZWM-L-M22C-N38-F4	48	NPT3/8	M4	85.5	15	49	67	25	21	F5	4	27
VZWM-L-M22C-N12-F4	48	NPT1/2	M4	85	15	49	67	25	21	F5	4	27
VZWM-L-M22C-N34-F4	70	NPT3/4	M6	107	24.2	70.5	96	40	28	F5	6	41
VZWM-L-M22C-N1-F4	70	NPT1	M6	107	24.2	70.5	96	40	28	F5	6	41
VZWM-L-M22C-N114-F5	96	NPT1 1/4	M6	143.5	32.5	87	140	59.5	40.25	F5	6	58
VZWM-L-M22C-N112-F5	96	NPT1 1/2	M6	143.5	32.5	87	140	59.5	40.25	F5	6	58
VZWM-L-M22C-N2-F5	112	NPT2	M6	159	38.5	103.5	168	59.5	54.25	F5	6	70
VZWM-L-M22C-N14-F5-R1	44	NPT1/4	M4	106	15.6	51	67	25	21	F4	4	27
VZWM-L-M22C-N38-F5-R1	44	NPT3/8	M4	106	15.6	51	67	25	21	F4	4	27
VZWM-L-M22C-N12-F5-R1	44	NPT1/2	M4	106	15.6	51	67	25	21	F4	4	27
VZWM-L-M22C-N34-F5-R1	70	NPT3/4	M6	126	24.2	70	96	40	28	F4	6	41
VZWM-L-M22C-N1-F5-R1	70	NPT1	M6	126	24.2	70	96	40	28	F4	6	41
VZWM-L-M22C-N114-F5-R1	96	NPT1 1/4	M6	145	34	89.5	140	59.5	40.25	F5	6	58
VZWM-L-M22C-N112-F5-R1	96	NPT1 1/2	M6	145	34	89.5	140	59.5	40.25	F5	6	58
VZWM-L-M22C-N2-F5-R1	112	NPT2	M6	159	38.5	104	168	59.5	40.25	F5	6	70

Ordering data

Process valve connection	Brass housing		Stainless steel casting housing	
	Part No.	Type	Part No.	Type
NPT1/4	546 154	VZWM-L-M22C-N14-F4	546 170	VZWM-L-M22C-N14-F5-R1
NPT3/8	546 155	VZWM-L-M22C-N38-F4	546 171	VZWM-L-M22C-N38-F5-R1
NPT1/2	546 156	VZWM-L-M22C-N12-F4	546 172	VZWM-L-M22C-N12-F5-R1
NPT3/4	546 157	VZWM-L-M22C-N34-F4	546 173	VZWM-L-M22C-N34-F5-R1
NPT1	546 158	VZWM-L-M22C-N1-F4	546 174	VZWM-L-M22C-N1-F5-R1
NPT1 1/4	546 159	VZWM-L-M22C-N114-F5	546 175	VZWM-L-M22C-N114-F5-R1
NPT1/2	546 160	VZWM-L-M22C-N112-F5	546 176	VZWM-L-M22C-N112-F5-R1
NPT2	546 161	VZWM-L-M22C-N2-F5	546 177	VZWM-L-M22C-N2-F5-R1

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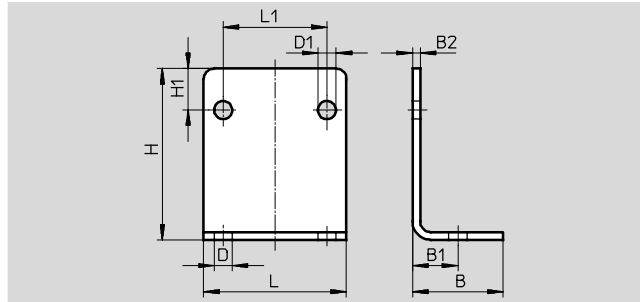
Accessories

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Mounting bracket HRM

Material:

Galvanised steel



Dimensions and ordering data										
B	B1	B2	D Ø	D1 Ø	H	H1	L	L1	Weight [g]	Part No. Type
25	12.5	2	6	5	37	10	40	25	39	9 769 HRM-1
35	17.5	3	7	7	66	16	55	40	130	9 770 HRM-2
47	23.5	3	9	7	87	23	75	59.5	246	9 771 HRM-3

Ordering data – Solenoid coils				Technical data ➔ Internet: solenoid coil	
	Voltage	Part No.	Type		
Solenoid coil for VZWM- ... -F4- ... (system 8) ¹⁾					
	24 V DC	549 903	MD-2-24VDC-PA		
	110 V AC, 50 ... 60 Hz	549 904	MD-2-110VAC-PA		
	230 V AC, 50 ... 60 Hz	549 905	MD-2-230VAC-PA		
Solenoid coil for VZWM- ... -F5- ... (system 13) ¹⁾					
	24 V DC	549 906	MH-2-24VDC-PA		
	110 V AC, 50 ... 60 Hz	549 907	MH-2-110VAC-PA		
	230 V AC, 50 ... 60 Hz	549 908	MH-2-230VAC-PA		

1) Ambient temperature –20 ... 50 °C

Ordering data – Plug socket			Technical data → Internet: mssd-n	
		Part No.	Type	
	3-pin, square design MSF	550 067	MSSD-N	