

Solenoid valves VZWM-L, NPT

FESTO



Solenoid valves VZWM-L, NPT

Key features and type codes

General

- Indirectly actuated diaphragm valve
- Process valve connection
N14 ... N2
- Flow rate
1400 ... 31000 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
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Design

L	In-line valve
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Valve function

M22C	2/2-way valve, normally closed
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Process valve connection

N14	1/4 NPT
N38	3/8 NPT
N12	1/2 NPT
N34	3/4 NPT
N1	1 NPT
N114	1 1/4 NPT
N112	1 1/2 NPT
N2	2 NPT

Electrical connection

F4	MD-2-With armature tube for solenoid coil MD-2- ... -PA
F5	MH-2-With armature tube for solenoid coil MH-2- ... -PA

Housing material

R1	Stainless steel casting
	Brass

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Technical data

Function



-  - Flow rate
1400 ... 31000 l/min

-  - Voltage
24 V DC
110, 230 V AC



General technical data									
Process valve connection		1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
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]	1400	2100	2400	10000	11700	24000	26400	31000
Flow rate Kv	[m ³ /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	NBR							
	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

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Operating and environmental conditions										
Process valve connection			1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
Medium			Compressed air in accordance with ISO 8573-1:2010 [7:4:4]							
			Neutral liquids							
			Inert gases							
			Water							
Ambient temperature ¹⁾			[°C]	-10 ... +60						
Medium pressure	Gases	[bar]	0.5 ... 10					0.7 ... 10		
	Fluids	[bar]	0.5 ... 6					0.7 ... 6		
Temperature of medium	Gases	[°C]	-10 ... +60							
	Fluids	[°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.

Valve switching times										
Process valve connection			1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
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	1900	2000	2800
	On	[ms]	100	110	110	400	400	1400	1400	2100
Switching time of variant R1	Off	[ms]	210	190	200	950	950	1900	2000	2800
	On	[ms]	80	110	110	420	300	1400	1400	2100

Electrical data										
Process valve connection			1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
Electrical connection			F4, with armature tube for solenoid coil MD-2- ... -PA, must be ordered separately					MH-2-F5, with armature tube for solenoid coil MH-2- ... -PA, 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)							

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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	1220	VZWM-L-M22C-N34-F5-R1	1200
VZWM-L-M22C-N1-F4	1200	VZWM-L-M22C-N1-F5-R1	1100
VZWM-L-M22C-N114-F5	2700	VZWM-L-M22C-N114-F5-R1	2600
VZWM-L-M22C-N112-F5	2510	VZWM-L-M22C-N112-F5-R1	2500
VZWM-L-M22C-N2-F5	4000	VZWM-L-M22C-N2-F5-R1	3700

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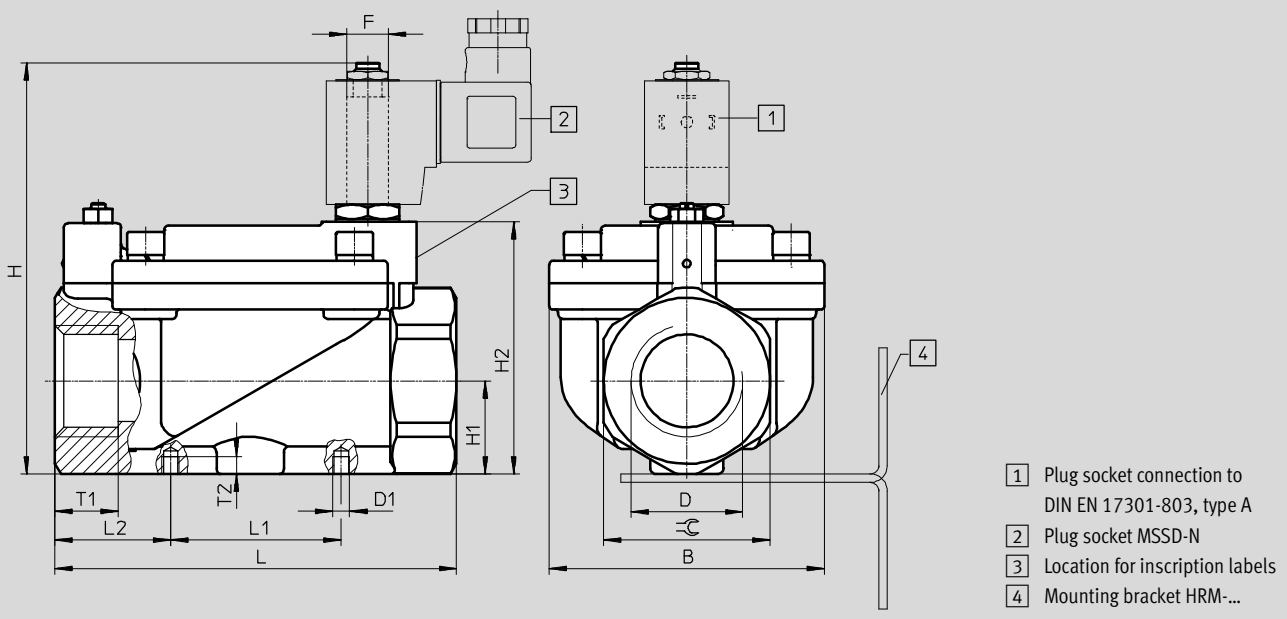
Technical data

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Dimensions

2/2-way valve

Download CAD data → www.festo.com



Type	B ±1.5	D	D1	H ±2	H1 ±1.5	H2 ±1	L ±2	L1 ±1.5	L2	F	T1	T2 ±0.5	≅
VZWM-L-M22C-N14-F4	48	1/4 NPT	M4	85.5	15	49	67	25	21	F5	12	4	27
VZWM-L-M22C-N38-F4	48	3/8 NPT	M4	85.5	15	49	67	25	21	F5	12	4	27
VZWM-L-M22C-N12-F4	48	1/2 NPT	M4	85	15	49	67	25	21	F5	12	4	27
VZWM-L-M22C-N34-F4	70	3/4 NPT	M6	107	24.2	70.5	96	40	28	F5	16	6	41
VZWM-L-M22C-N1-F4	70	1 NPT	M6	107	24.2	70.5	96	40	28	F5	16	6	41
VZWM-L-M22C-N114-F5	96	1 1/4 NPT	M6	143.5	32.5	87	140	59.5	40.25	F5	22	6	58
VZWM-L-M22C-N112-F5	96	1 1/2 NPT	M6	143.5	32.5	87	140	59.5	40.25	F5	22	6	58
VZWM-L-M22C-N2-F5	112	2 NPT	M6	159	38.5	103.5	168	59.5	54.25	F5	25	6	70
VZWM-L-M22C-N14-F5-R1	44	1/4 NPT	M4	106	15.6	51	67	25	21	F4	–	4	27
VZWM-L-M22C-N38-F5-R1	44	3/8 NPT	M4	106	15.6	51	67	25	21	F4	–	4	27
VZWM-L-M22C-N12-F5-R1	44	1/2 NPT	M4	106	15.6	51	67	25	21	F4	–	4	27
VZWM-L-M22C-N34-F5-R1	70	3/4 NPT	M6	126	24.2	70	96	40	28	F4	–	6	41
VZWM-L-M22C-N1-F5-R1	70	1 NPT	M6	126	24.2	70	96	40	28	F4	–	6	41
VZWM-L-M22C-N114-F5-R1	96	1 1/4 NPT	M6	145	34	89.5	140	59.5	40.25	F5	–	6	58
VZWM-L-M22C-N112-F5-R1	96	1 1/2 NPT	M6	145	34	89.5	140	59.5	40.25	F5	–	6	58
VZWM-L-M22C-N2-F5-R1	112	2 NPT	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
1/4 NPT	546154	VZWM-L-M22C-N14-F4	546170	VZWM-L-M22C-N14-F5-R1
3/8 NPT	546155	VZWM-L-M22C-N38-F4	546171	VZWM-L-M22C-N38-F5-R1
1/2 NPT	546156	VZWM-L-M22C-N12-F4	546172	VZWM-L-M22C-N12-F5-R1
3/4 NPT	546157	VZWM-L-M22C-N34-F4	546173	VZWM-L-M22C-N34-F5-R1
1 NPT	546158	VZWM-L-M22C-N1-F4	546174	VZWM-L-M22C-N1-F5-R1
1 1/4 NPT	546159	VZWM-L-M22C-N114-F5	546175	VZWM-L-M22C-N114-F5-R1
1 1/2 NPT	546160	VZWM-L-M22C-N112-F5	546176	VZWM-L-M22C-N112-F5-R1
2 NPT	546161	VZWM-L-M22C-N2-F5	546177	VZWM-L-M22C-N2-F5-R1

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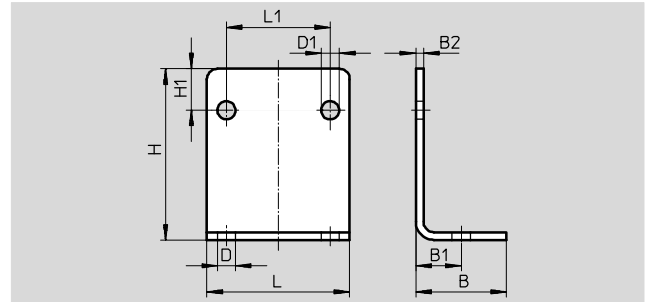
Accessories

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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	9769	HRM-1
35	17.5	3	7	7	66	16	55	40	130	9770	HRM-2
47	23.5	3	9	7	87	23	75	59.5	246	9771	HRM-3

Ordering data – Solenoid coils			Technical data ➔ Internet: solenoid coil	
	Voltage	Part No.	Type	
Solenoid coil for VZWM- ... -F4- ... ¹⁾				
	24 V DC	549903	MD-2-24VDC-PA	
	110 V AC, 50 ... 60 Hz	549904	MD-2-110VAC-PA	
	230 V AC, 50 ... 60 Hz	549905	MD-2-230VAC-PA	
Solenoid coil for VZWM- ... -F5- ... ¹⁾				
	24 V DC	549906	MH-2-24VDC-PA	
	110 V AC, 50 ... 60 Hz	549907	MH-2-110VAC-PA	
	230 V AC, 50 ... 60 Hz	549908	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, connection pattern to EN 175301-803, type A	550067	MSSD-N		