

## Solenoid valves VZWM-L

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## Key features and type codes

### General

- Indirectly actuated poppet valve with diaphragm seal
- Pipe connection G14 ... G2
- Flow rate 1400 ... 31000 l/min
- Available in brass or stainless steel casting
- Wide range of coils

001	Series
VZWM	Solenoid valve, process directional control valve

002	Directional control valve type
L	In-line valve

003	Valve function
M22C	2/2-way valve, normally closed

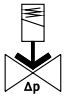
004	Pipe connection
G14	G1/4
G38	G3/8
G12	G1/2
G34	G3/4
G1	G1
G114	G1 1/4
G112	G1 1/2
G2	G2



005	Electrical connection
F4	Electric with armature tube for solenoid coil 8
F5	Electric with armature tube for solenoid valve 13

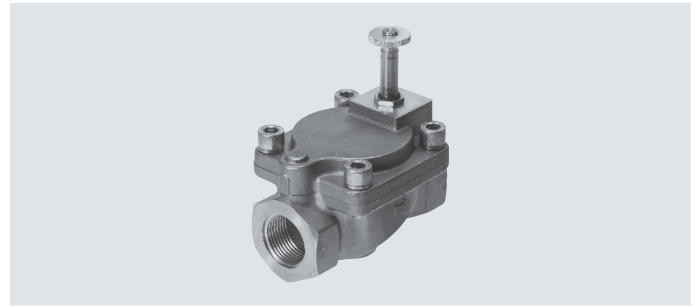
006	Corrosion protection
	Standard
R1	Stainless steel

## Data sheet

## Function



-  - Flow rate  
1400 ... 31000 l/min
-  - Voltage  
24 V DC  
110, 230 V AC



General technical data		G1/4	G3/8	G1/2	G3/4	G1	G1 1/4	G1 1/2	G2	
Pipe connection		G1/4	G3/8	G1/2	G3/4	G1	G1 1/4	G1 1/2	G2	
Nominal width DN, brass housing		13.5	13.5	13.5	27.5	27.5	40	40	50	
Nominal width DN, stainless steel cast housing		13	13	13	25	25	40	40	50	
Valve function		2/2-way, single solenoid								
Design		Poppet valve with diaphragm seal								
Sealing principle		Soft								
Actuation type		Electrical								
Reset method		Pneumatic spring								
Type of control		Piloted								
Flow direction		Non-reversible								
Exhaust air function		Cannot be throttled								
Manual override		None								
Type of mounting		In-line installation								
Mounting position		Preferably upright								
Standard nominal flow rate	[l/min]	1400	2100	2400	10000	11700	24000	26400	31000	
Flow rate Kv	[m <sup>3</sup> /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	0.57	0.6	0.67	0.68	
Pressure difference	[bar]	0.5	0.5	0.5	0.5	0.7	0.7	0.7	0.7	
Max. tightening torque	Connecting thread	[Nm]	35	60	105	200	350	450	540	620
	Cover screw	[Nm]	20	20	20	30	30	30	30	30
	Coil mounting	[Nm]	2	2	2	2	2	2	2	2

## Data sheet

Materials										
Housing	Brass or stainless steel casting									
Diaphragm	NBR									
Armature tube	High-alloy steel									
Note on materials	Contains paint-wetting impairment substances									
Operating and environmental conditions										
Pipe connection			G1/4	G3/8	G1/2	G3/4	G1	G1 1/4	G1 1/2	G2
Medium	Compressed air to ISO 8573-1:2010 [7:4:4]									
	Neutral fluids									
	Inert gases									
	Water									
Ambient temperature <sup>1)</sup>	[°C]	-10 ... +60								
Medium pressure	Gases	[bar]	0.5 ... 10				0.7 ... 10			
	Liquids	[bar]	0.5 ... 6				0.7 ... 6			
Temperature of medium	Gases	[°C]	-10 ... +60							
	Liquids	[°C]	5 ... 50							
Max. viscosity	[mm <sup>2</sup> /s]	22								
CE marking (see declaration of conformity)	To EU Pressure Equipment Directive									
Corrosion resistance class CRC <sup>2)</sup>	Brass	1								
	Stainless steel casting	3								

1) Note ambient temperature of solenoid coils

2) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

Valve switching times										
Pipe connection			G1/4	G3/8	G1/2	G3/4	G1	G1 1/4	G1 1/2	G2
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										
Pipe connection			G1/4	G3/8	G1/2	G3/4	G1	G1 1/4	G1 1/2	G2
Electrical connection	F4, with armature tube for solenoid coil MD-2- ... -PA, order separately						F5, with armature tube for solenoid coil MH-2- ... -PA, order separately			
Operating voltage	Direct voltage	[V DC]	24							
	Alternating voltage	[V AC]	110/230 (50 ... 60 Hz)							
Characteristic coil data	Direct voltage	[W]	6.8						7.9	
	Alternating voltage	[VA]	Pull: 14.5 Hold: 10.5						14	
Degree of protection to EN 60529	IP65 (with plug socket)									

## Data sheet

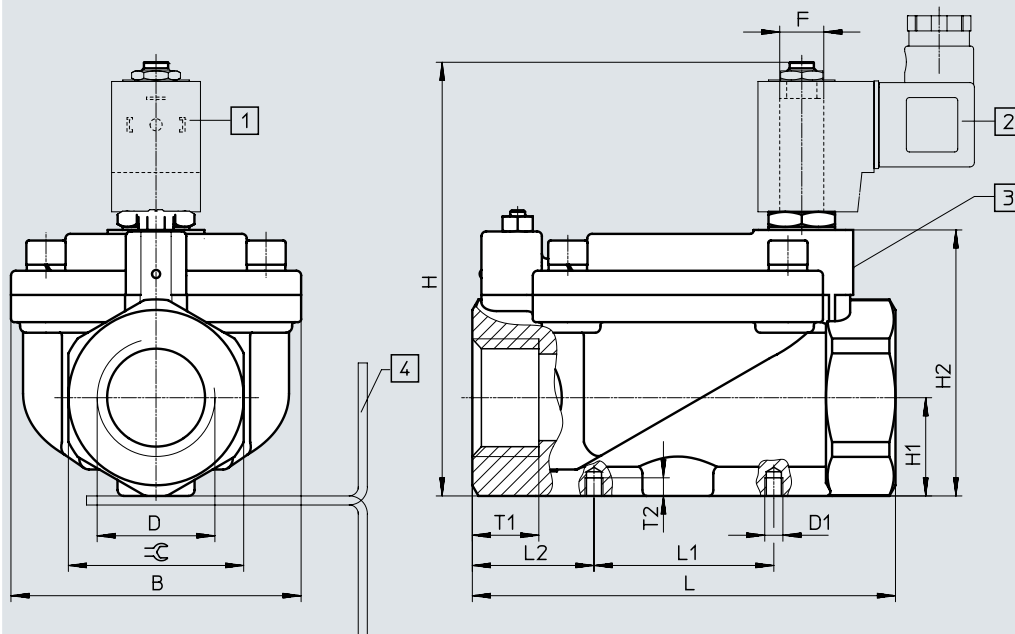
Weight [g]			
Brass housing		Stainless steel cast housing	
VZWM-...-G14-F4	500	VZWM-...-G14-F5-R1	400
VZWM-...-G38-F4	480	VZWM-...-G38-F5-R1	400
VZWM-...-G12-F4	450	VZWM-...-G12-F5-R1	360
VZWM-...-G34-F4	1270	VZWM-...-G34-F5-R1	1200
VZWM-...-G1-F4	1200	VZWM-...-G1-F5-R1	1100
VZWM-...-G114-F5	2850	VZWM-...-G114-F5-R1	2650
VZWM-...-G112-F5	2570	VZWM-...-G112-F5-R1	2400
VZWM-...-G2-F5	3800	VZWM-...-G2-F5-R1	3660

Data sheet

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

2/2-way valve



- [1] Plug socket connection to DIN EN 17301-803, type A
- [2] Plug socket MSSD-N
- [3] Space for inscription labels
- [4] Mounting bracket HRM-...

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-...-G14-F4	48	G1/4	M4	85.5	15	49	67	25	21	F4	12	4	27
VZWM-...-G38-F4	48	G3/8	M4	85.5	15	49	67	25	21	F4	12	4	27
VZWM-...-G12-F4	48	G1/2	M4	85	15	49	67	25	21	F4	12	4	27
VZWM-...-G34-F4	70	G3/4	M6	107	24.2	70.5	96	40	28	F4	16	6	41
VZWM-...-G1-F4	70	G1	M6	107	24.2	70.5	96	40	28	F4	16	6	41
VZWM-...-G114-F5	96	G1 1/4	M6	143.5	32.5	88	140	59.5	40.25	F5	22	6	58
VZWM-...-G112-F5	96	G1 1/2	M6	143.5	32.5	88	140	59.5	40.25	F5	22	6	58
VZWM-...-G2-F5	112	G2	M6	159	38.5	103.5	168	59.5	54.25	F5	25	6	70
VZWM-...-G14-F5-R1	44	G1/4	M4	106	15.6	51	67	25	21	F5	-	4	27
VZWM-...-G38-F5-R1	44	G3/8	M4	106	15.6	51	67	25	21	F5	-	4	27
VZWM-...-G12-F5-R1	44	G1/2	M4	106	15.6	51	67	25	21	F5	-	4	27
VZWM-...-G34-F5-R1	70	G3/4	M6	126	24.2	70	96	40	28	F5	-	6	41
VZWM-...-G1-F5-R1	70	G1	M6	126	24.2	70	96	40	28	F5	-	6	41
VZWM-...-G114-F5-R1	96	G1 1/4	M6	145	34	89.5	140	59.5	40.25	F5	-	6	58
VZWM-...-G112-F5-R1	96	G1 1/2	M6	145	34	89.5	140	59.5	40.25	F5	-	6	58
VZWM-...-G2-F5-R1	112	G2	M6	159	38.5	104	168	59.5	54.25	F5	-	6	70

## Data sheet

## ★ Core product range

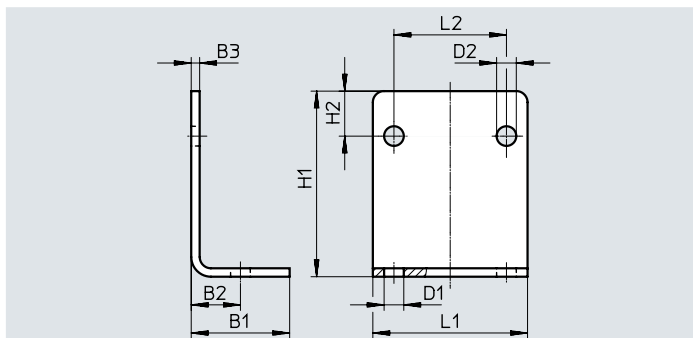
Ordering data		
Pipe connection	Part no.	Type
<b>Brass housing</b>		
G1/4	★ 546146	VZWM-L-M22C-G14-F4
G3/8	★ 546147	VZWM-L-M22C-G38-F4
G1/2	★ 546148	VZWM-L-M22C-G12-F4
G3/4	★ 546149	VZWM-L-M22C-G34-F4
G1	★ 546150	VZWM-L-M22C-G1-F4

Ordering data		
Pipe connection	Part no.	Type
<b>Brass housing</b>		
G1 1/4	546151	VZWM-L-M22C-G114-F5
G1 1/2	546152	VZWM-L-M22C-G112-F5
G2	546153	VZWM-L-M22C-G2-F5
<b>Stainless steel cast housing</b>		
G1/4	546162	VZWM-L-M22C-G14-F5-R1
G3/8	546163	VZWM-L-M22C-G38-F5-R1
G1/2	546164	VZWM-L-M22C-G12-F5-R1
G3/4	546165	VZWM-L-M22C-G34-F5-R1
G1	546166	VZWM-L-M22C-G1-F5-R1
G1 1/4	546167	VZWM-L-M22C-G114-F5-R1
G1 1/2	546168	VZWM-L-M22C-G112-F5-R1
G2	546169	VZWM-L-M22C-G2-F5-R1

## Accessories

### Mounting bracket HRM

Material:  
Galvanised steel

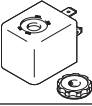
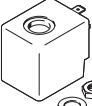


#### Dimensions and ordering data

B1	B2	B3	D1 ∅	D2 ∅	H1	H2	L1	L2 ±0.1	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

Data sheets → Internet: solenoid coil

Voltage		Part no.	Type
<b>Solenoid coil for VZWM- ... -F4- ... <sup>1)</sup></b>			
	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
<b>Solenoid coil for VZWM- ... -F5- ... <sup>1)</sup></b>			
	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

Data sheets → Internet: mssd-n

		Part no.	Type
	3-pin, square design, plug pattern to EN 175301-803, type A	★ 550067	MSSD-N



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