

Solenoid valves VZWM-L

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Solenoid valves VZWM-L

Key features and type codes

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Brief description

- Indirectly controlled poppet valve with diaphragm control
- Connection, valve
G $\frac{1}{4}$... G2
- Flow rate
1,400 ... 31,000 l/min
- Available in brass or stainless steel casting
- Varied range of coils

VZWM – L – M22C – G14 – 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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Connection, valve

G14	G $\frac{1}{4}$
G38	G $\frac{3}{8}$
G12	G $\frac{1}{2}$
G34	G $\frac{3}{4}$
G1	G1
G114	G1 $\frac{1}{4}$
G112	G1 $\frac{1}{2}$
G2	G2

Electrical connection

F4	With armature tube for solenoid coil MD-2- ... -PA (system 8)
F5	With armature tube for solenoid coil MH-2- ... -PA (system 13)

Housing material

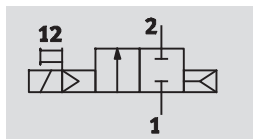
R1	Stainless steel casting
	Brass

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Technical data

Function



Flow rate

1,400 ... 31,000 l/min

Voltage

24 V DC
110/230 V AC



General technical data									
Connection, valve		G1/4	G3/8	G1/2	G3/4	G1	G1 1/4	G1 1/2	G2
Nominal size DN (housing: brass)		[mm]	13.5	13.5	13.5	27.5	27.5	40	50
Nominal size DN (housing: stainless steel casting)		[mm]	13	13	13	25	25	40	50
Valve function		2/2, single solenoid							
Constructional design		Poppet valve with diaphragm control							
Sealing principle		Soft							
Actuation type		Electrical							
Reset method		Pneumatic spring							
Control type		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	31,000
Flow rate Kv		[m³/h]	1.6	2	2.4	8.5	10.7	21.3	39
C value		[l/sbar]	6	8.8	9.8	39	41	75	82
b value			0.3	0.35	0.37	0.5	0.57	0.6	0.67
Differential pressure		[bar]	0.5	0.5	0.5	0.5	0.7	0.7	0.7
Product weight	Brass housing	[g]	500	480	450	1,270	1,200	2,850	3,800
	Stainless steel casting housing	[g]	400	400	330	1,200	1,100	2,650	3,660
Materials	Housing	Brass or stainless steel casting							
	Diaphragm	NBR							
	Plunger tube	High-alloy steel							
Note on materials		Contains paint wetting impairment substances							
Max. tightening torque	Connecting thread	[Nm]	35	60	105	200	350	450	620
	Cover screw	[Nm]	20	20	20	30	30	30	30
	Coil mounting	[Nm]	2	2	2	2	2	2	2

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Technical data

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Operating and environmental conditions										
Connection, valve			G1/4	G3/8	G1/2	G3/4	G1	G11/4	G11/2	G2
Operating medium			Filtered compressed air, lubricated, grade of filtration 50 µm, neutral gases, water, neutral fluids							
Operating pressure, valve	Gases	[bar]	0.5 ... 10					0.7 ... 10		
	Fluids	[bar]	0.5 ... 6					0.7 ... 6		
Ambient temperature ¹⁾		[°C]	−10 ... +60							
Temperature of medium	Gases	[°C]	−10 ... +60							
	Fluids	[°C]	5 ... 50							
Max. viscosity		[mm²/s]	22							
CE mark (see declaration of conformity)			To EU Pressure Equipment Directive							
Corrosion resistance class	Brass		1							
	Stainless steel casting		3							

1) Note ambient temperature of solenoid coils

2) Corrosion resistance class 1 to Festo standard 940 070

Components requiring low corrosion resistance. 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 to Festo standard 940 070

Components with heavy corrosion exposure. Externally visible components in direct contact with normal industrial atmosphere or media such as solvents and cleaning agents, where the surface requirement is predominantly functional.

Valve response times										
Connection, valve			G1/4	G3/8	G1/2	G3/4	G1	G1¼	G1½	G2
Gases										
Response time	off	[ms]	10	10	10	12	12	20	20	21
	on	[ms]	8	8	8	15	15	26	26	62
Fluids										
Response 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
Response time, 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										
			G1/4	G3/8	G1/2	G3/4	G1	G1 1/4	G1 1/2	G2
Electrical connection			With armature tube for solenoid coil MD-2- ... -PA (system 8), order separately					With armature tube for solenoid coil MH-2- ... -PA (system 13), order 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)							

Weights [g]									
Brass housing					Stainless steel casting 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	1,270				VZWM-...-G34-F5-R1	1,200			
VZWM-...-G1-F4	1,200				VZWM-...-G1-F5-R1	1,100			
VZWM-...-G114-F5	2,850				VZWM-...-G114-F5-R1	2,650			
VZWM-...-G112-F5	2,570				VZWM-...-G112-F5-R1	2,400			
VZWM-...-G2-F5	3,800				VZWM-...-G2-F5-R1	3,660			

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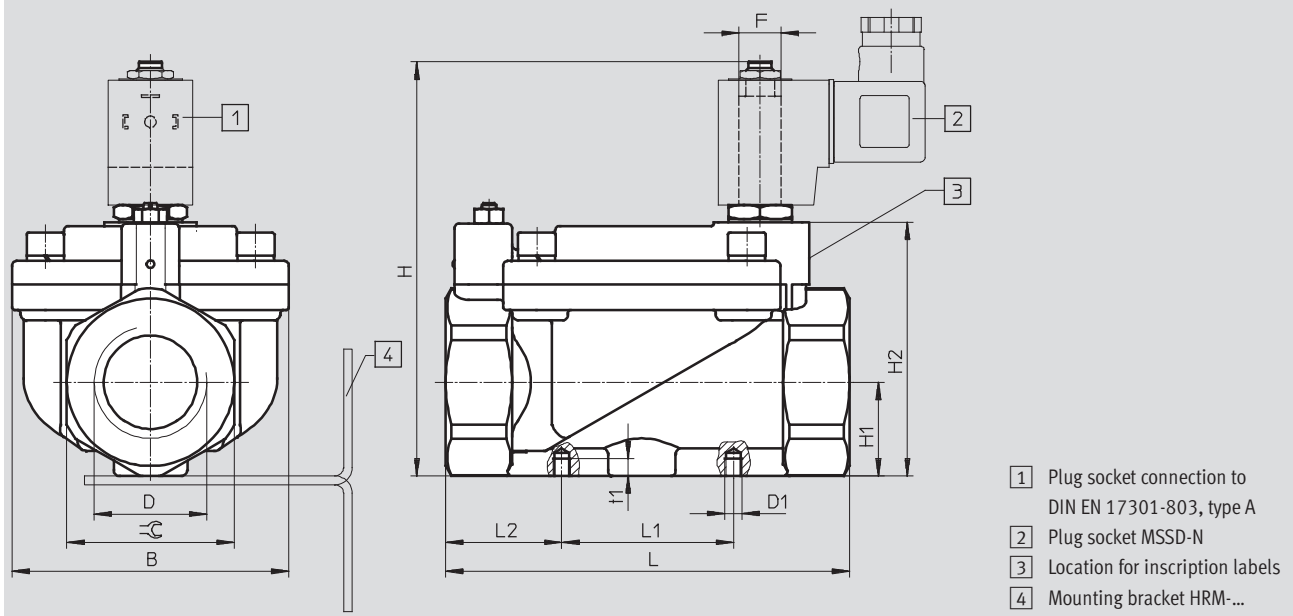
Technical data

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Dimensions

Download CAD Data → www.festo.com/us/cad

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

Ordering data

Connection, valve	Brass housing		Stainless steel casting housing	
	Part No.	Type	Part No.	Type
G1/4	546 146	VZWM-L-M22C-G14-F4	546162	VZWM-L-M22C-G14-F5-R1
G3/8	546 147	VZWM-L-M22C-G38-F4	546163	VZWM-L-M22C-G38-F5-R1
G1/2	546 148	VZWM-L-M22C-G12-F4	546164	VZWM-L-M22C-G12-F5-R1
G3/4	546 149	VZWM-L-M22C-G34-F4	546165	VZWM-L-M22C-G34-F5-R1
G1	546 150	VZWM-L-M22C-G1-F4	546166	VZWM-L-M22C-G1-F5-R1
G1 1/4	546 151	VZWM-L-M22C-G114-F5	546167	VZWM-L-M22C-G114-F5-R1
G1 1/2	546 152	VZWM-L-M22C-G112-F5	546168	VZWM-L-M22C-G112-F5-R1
G2	546 153	VZWM-L-M22C-G2-F5	546169	VZWM-L-M22C-G2-F5-R1

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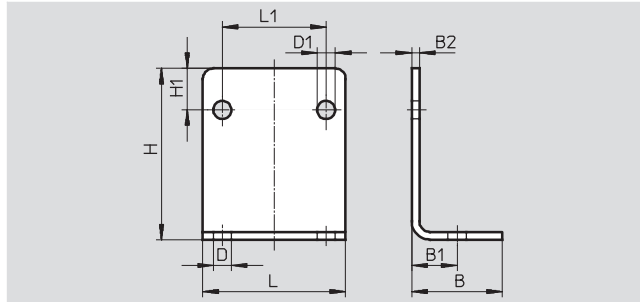
Accessories

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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: md, mh	
	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	
		Part No.	Type		
	3-pin, square design MSF	550 067	MSSD-N		

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Festo North America

Festo Regional Contact Center

5300 Explorer Drive
Mississauga, Ontario L4W 5G4
Canada

USA Customers:

For ordering assistance,

Call: 1.800.99.FESTO (1.800.993.3786)

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Canadian Customers:

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Email: festo.canada@ca.festo.com

USA Headquarters

Festo Corporation
395 Moreland Road
P.O. Box 18023
Hauppauge, NY 11788, USA
www.festo.com/us

USA Sales Offices

Appleton

North 922 Tower View Drive, Suite N
Greenville, WI 54942, USA

Boston

120 Presidential Way, Suite 330
Woburn, MA 01801, USA

Chicago

1441 East Business Center Drive
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Detroit – Automotive Engineering Center

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Auburn Hills, MI 48326, USA

New York

395 Moreland Road
Hauppauge, NY 11788, USA

Silicon Valley

4935 Southfront Road, Suite F
Livermore, CA 94550, USA

United States



USA Headquarters, East: Festo Corp., 395 Moreland Road, Hauppauge, NY 11788

Phone: 1.631.435.0800; Fax: 1.631.435.8026;

Email: info@festo-usa.com

www.festo.com/us

Canada



Headquarters: Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4

Phone: 1.905.624.9000; Fax: 1.905.624.9001;

Email: festo.canada@ca.festo.com

www.festo.ca

Mexico



Headquarters: Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquahuac,
54020 Tlalneapantla, Edo. de México

Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;

Email: festo.mexico@mx.festo.com

www.festo.com/mx

Central USA

Festo Corporation
1441 East Business
Center Drive
Mt. Prospect, IL 60056, USA
Phone: 1.847.759.2600
Fax: 1.847.768.9480



Western USA

Festo Corporation
4935 Southfront Road,
Suite F
Livermore, CA 94550, USA
Phone: 1.925.371.1099
Fax: 1.925.245.1286



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