

Solenoid valves VZWM-L

FESTO



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Simply good: Expected high Festo quality
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for the
star!

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 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 | 0.57 | 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 ¹⁾ | [°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 ² /s] | 22 | | | | | | | | |
| CE marking (see declaration of conformity) | To EU Pressure Equipment Directive | | | | | | | | | |
| Corrosion resistance class CRC ²⁾ | 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

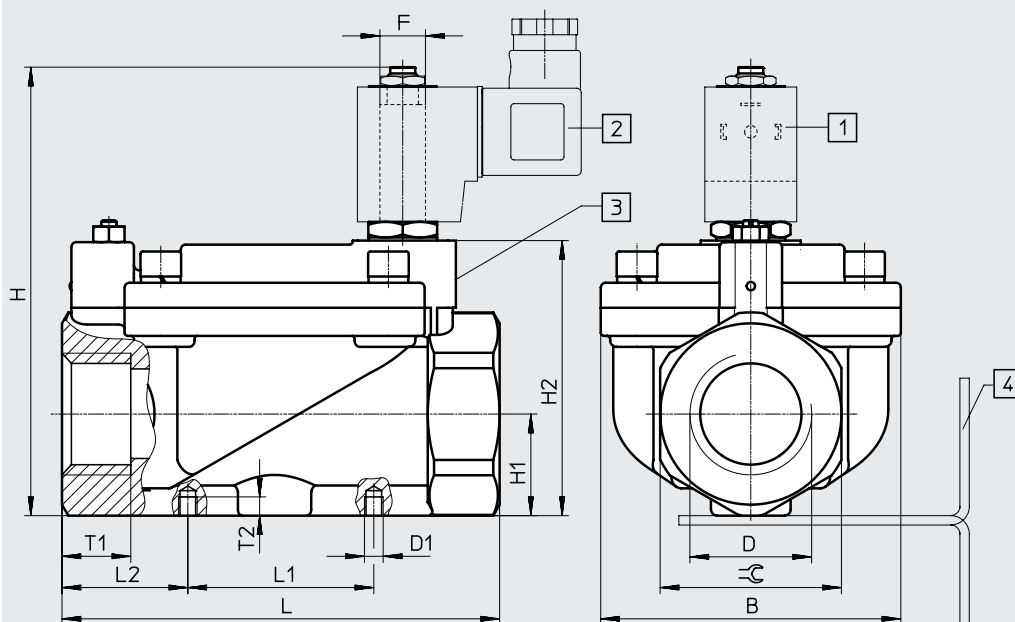
| Weight [g] | | | |
|------------------|------|------------------------------|------|
| Brass housing | | Stainless steel cast housing | |
| VZWM-...-G14-F4 | 500 | VZWM-...-G14-F5-R1 | 400 |
| VZWM-...-G38-F4 | 480 | VZWM-...-G38-F5-R1 | 400 |
| VZWM-...-G12-F4 | 450 | VZWM-...-G12-F5-R1 | 360 |
| 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

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

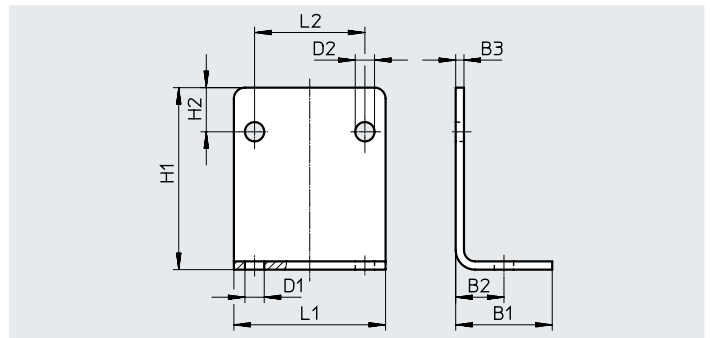
| Ordering data | | |
|----------------------|----------|--------------------|
| Pipe connection | Part no. | Type |
| Brass housing | | |
| G1/4 | ★ 546146 | VZWM-L-M22C-G14-F4 |
| G3/8 | ★ 546147 | VZWM-L-M22C-G38-F4 |
| G1/2 | ★ 546148 | VZWM-L-M22C-G12-F4 |
| G3/4 | ★ 546149 | VZWM-L-M22C-G34-F4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

| Ordering data | | |
|-------------------------------------|----------|------------------------|
| Pipe connection | Part no. | Type |
| Brass housing | | |
| 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 |
| Stainless steel cast housing | | |
| 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

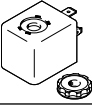
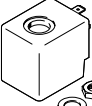


Dimensions and ordering data

| 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 |
|--|------------------------|----------|----------------|
| 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

Data sheets → Internet: mssd-n

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