

## Solenoid valves VZWF, force pilot operated

**FESTO**



## Solenoid valves VZWF, force pilot operated

Key features and overview

**FESTO**

### Function

Normally closed solenoid valve with diaphragm and forced lifting. When the solenoid is energised, the differential pressure from the secondary side of the diaphragm is reduced via the servo hole. The effective differential pressure lifts

the diaphragm away from the valve seat. If there is no differential pressure, the diaphragm is lifted directly by the solenoid. The valve opens and closes without a differential pressure between the inlet and outlet.

### General

- N- Connecting thread  
G $\frac{1}{4}$  ... G2
-  - Flow rate Kv  
1.8 ... 28 m<sup>3</sup>/h

### Application

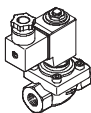
- Suitable for closed applications such as cooling or filling systems
- Vacuum
- Liquid gas
- Bottling systems

### Design

- Diaphragm valves
- Forced lifting of the valve diaphragm
- 2/2-way valve, normally closed

### Advantages

- Choice of sealing materials for different fields of applications
- Medium pressure 0 bar or higher

| Version                                                                            | Type     | Process valve connection | Nominal size (DN) | Process valve nominal pressure (PN) | → Page/Internet |
|------------------------------------------------------------------------------------|----------|--------------------------|-------------------|-------------------------------------|-----------------|
|  | VZWF-... | G $\frac{1}{4}$          | 13.5              | 40                                  | 4               |
|                                                                                    |          | G $\frac{3}{8}$          | 13.5              |                                     |                 |
|                                                                                    |          | G $\frac{1}{2}$          | 13.5              |                                     |                 |
|                                                                                    |          | G $\frac{3}{4}$          | 27.5              |                                     |                 |
|                                                                                    |          | G1                       | 27.5              |                                     |                 |
|                                                                                    | VZWF-... | G114                     | 40                | 40                                  | 8               |
|                                                                                    |          | G112                     | 40                |                                     |                 |
|                                                                                    |          | G2                       | 50                |                                     |                 |

# Solenoid valves VZWF, force pilot operated

Type codes

|                                          |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
|------------------------------------------|--------------------------------------|---|---|---|---|---|------|---|-----|---|-----|---|---|---|------|---|----|---|----|
| VZWF                                     |                                      | - | B | - | L | - | M22C | - | G14 | - | 135 | - | V | - | 2AP4 | - | 10 | - | R1 |
| <b>Type</b>                              |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| VZWF                                     | Solenoid valve, force pilot operated |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Product version</b>                   |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
|                                          | Standard                             |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| B                                        | Optimised function                   |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Type of directional control valve</b> |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| L                                        | In-line valve                        |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Valve function</b>                    |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| M22C                                     | 2/2-way valve, normally closed       |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Process valve connection</b>          |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| G14                                      | Thread G1/4                          |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| G38                                      | Thread G3/8                          |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| G12                                      | Thread G1/2                          |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| G34                                      | Thread G3/4                          |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| G1                                       | Thread G1                            |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| G114                                     | Thread G1 1/4                        |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| G112                                     | Thread G1 1/2                        |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| G2                                       | Thread G2                            |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Nominal size (DN)</b>                 |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| 135                                      | 13.5 mm                              |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| 275                                      | 27.5 mm                              |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| 400                                      | 40 mm                                |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| 500                                      | 50 mm                                |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Sealing material</b>                  |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
|                                          | Standard (NBR)                       |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| E                                        | EPDM                                 |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| V                                        | FPM                                  |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Nominal operating voltage</b>         |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| 1                                        | 24 V DC                              |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| 2A                                       | 110 V AC/50-60 Hz                    |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| 3A                                       | 230 V AC/50-60 Hz                    |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Electrical connection</b>             |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| P4                                       | Plug socket, 3-pin                   |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Operating pressure</b>                |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| 6                                        | Max. 6 bar                           |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| 10                                       | Max. 10 bar                          |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| <b>Corrosion protection</b>              |                                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
|                                          | Standard (brass)                     |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |
| R1                                       | Stainless steel                      |   |   |   |   |   |      |   |     |   |     |   |   |   |      |   |    |   |    |

## Solenoid valves VZWF, force pilot operated

**FESTO**

### Technical data

#### Function



 Flow rate Kv  
1.8 ... 11 m<sup>3</sup>/h

-N- Connecting thread  
G<sup>1</sup>/<sub>4</sub> ... G1



| General technical data              |                                       |                               |                               |                               |      |
|-------------------------------------|---------------------------------------|-------------------------------|-------------------------------|-------------------------------|------|
| Process valve connection            | G <sup>1</sup> / <sub>4</sub>         | G <sup>3</sup> / <sub>8</sub> | G <sup>1</sup> / <sub>2</sub> | G <sup>3</sup> / <sub>4</sub> | G1   |
| Nominal size (DN)                   | 13.5                                  | 13.5                          | 13.5                          | 27.5                          | 27.5 |
| Valve function                      | 2/2-way, single solenoid, closed      |                               |                               |                               |      |
| Design                              | Diaphragm valve, force pilot operated |                               |                               |                               |      |
| Type of mounting                    | In-line installation                  |                               |                               |                               |      |
| Actuation type                      | Electric                              |                               |                               |                               |      |
| Manual override                     | None                                  |                               |                               |                               |      |
| Mounting position                   | Solenoid vertical                     |                               |                               |                               |      |
| Sealing principle                   | Soft                                  |                               |                               |                               |      |
| Direction of flow                   | Non-reversible                        |                               |                               |                               |      |
| Max. viscosity [mm <sup>2</sup> /s] | 22                                    |                               |                               |                               |      |
| Protection class                    | IP 65                                 |                               |                               |                               |      |
| Product weight [g]                  | 1,000                                 |                               |                               | 1,500                         |      |

| Operating and environmental conditions    |                                                                                           |       |       |         |        |
|-------------------------------------------|-------------------------------------------------------------------------------------------|-------|-------|---------|--------|
| Process valve connection                  | G¼                                                                                        | G¾    | G½    | G¾      | G1     |
| Switching time on [ms]                    | 130                                                                                       |       |       | 275     |        |
| Switching time off [ms]                   | 180                                                                                       |       |       | 290     |        |
| Standard nominal flow rate [l/min]        | 1,920                                                                                     | 2,350 | 2,660 | 8,020   | 11,750 |
| Flow rate [m³/h]                          | 1.8                                                                                       | 2.2   | 2.5   | 7.5     | 11     |
| Operating pressure [bar]                  | 0 ... 10                                                                                  |       |       | 0 ... 6 |        |
| Process valve nominal pressure (PN)       | 40                                                                                        |       |       |         |        |
| Differential pressure [bar]               | 0                                                                                         |       |       |         |        |
| Operating medium with NBR seal (standard) | Dried, filtered compressed air, neutral gases, vacuum, cold water                         |       |       |         |        |
| Operating medium with EPDM seal           | Filtered, unlubricated compressed air, neutral gases, unlubricated vacuum air, water      |       |       |         |        |
| Operating medium with FPM seal            | Filtered compressed air 50 µm, neutral gases, vacuum, neutral liquids, water, mineral oil |       |       |         |        |
| Ambient temperature [°C]                  | −10 ... +35 °C                                                                            |       |       |         |        |
| Temperature of medium [°C]                | −10 ... +80 °C                                                                            |       |       |         |        |
| Leak rate to EN 12266-1                   | A                                                                                         |       |       |         |        |
| Corrosion resistance class                |                                                                                           |       |       |         |        |
| CRC <sup>1)</sup> Brass                   | 1                                                                                         |       |       |         |        |
| CRC <sup>2)</sup> Stainless steel         | 3                                                                                         |       |       |         |        |

- 1) 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.
- 2) Corrosion resistance class 3 according to Festo standard 940 070  
Components subject to high corrosion stress. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

# Solenoid valves VZWF, force pilot operated

Technical data

| Materials           |                                                                     |                 |
|---------------------|---------------------------------------------------------------------|-----------------|
| Solenoid valves     |                                                                     | Material number |
| 1 Housing           | Brass casting                                                       | CW617N          |
|                     | Stainless steel casting                                             | 1.4581          |
| 2 Screws            | High-alloy stainless steel                                          | 1.4301          |
| 3 Seals             | NBR, FPM, EPDM                                                      | –               |
| – Note on materials | Contains PWIS (paint-wetting impairment substances), RoHS-compliant |                 |

| Electrical data                                |                        |      |                                             |              |              |  |
|------------------------------------------------|------------------------|------|---------------------------------------------|--------------|--------------|--|
|                                                |                        |      | VZWF- ... 1                                 | VZWF- ... 2A | VZWF- ... 3A |  |
| Electrical connection                          |                        |      | Plug to EN 175301-803 type A, square design |              |              |  |
| CE mark as per EU Pressure Equipment Directive |                        |      | –                                           | Yes          | Yes          |  |
| Coil characteristics                           | Direct current DC      | [V]  | 24                                          | –            | –            |  |
|                                                | Alternating current AC | [V]  | –                                           | 110          | 230          |  |
|                                                |                        | [W]  | 11                                          | –            | –            |  |
|                                                | Switching power        | [VA] | –                                           | 19           | 18           |  |
|                                                | Holding power          | [VA] | –                                           | 16           | 15           |  |
|                                                |                        | [Hz] | –                                           | 50, 60       | 50, 60       |  |
| Coil characteristics                           | Direct current DC      | [V]  | 24                                          | –            | –            |  |
|                                                | Alternating current AC | [V]  | –                                           | 110          | 230          |  |
|                                                |                        | [W]  | 30                                          | –            | –            |  |
|                                                | Switching power        | [VA] | –                                           | 30           | 30           |  |
|                                                | Holding power          | [VA] | –                                           | 30           | 30           |  |
|                                                |                        | [Hz] | –                                           | 50, 60       | 50, 60       |  |
| Permissible voltage fluctuations               |                        | [%]  | ±10                                         |              |              |  |

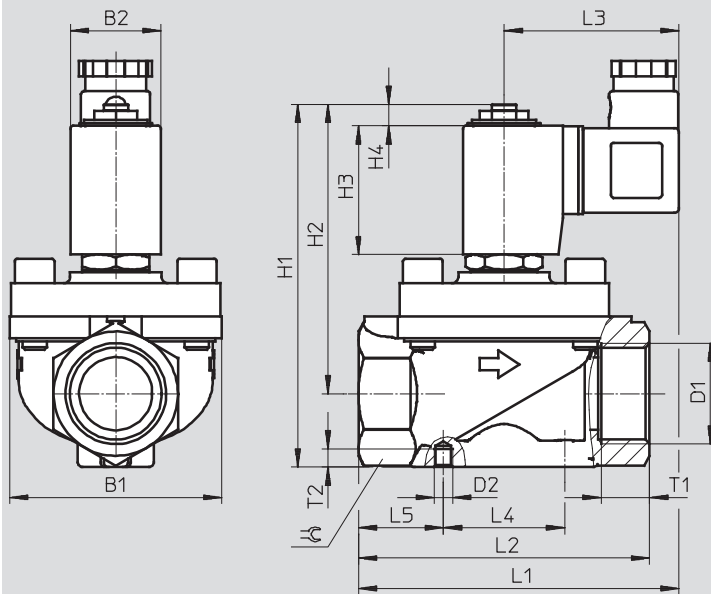
## Solenoid valves VZWF, force pilot operated

Technical data

**FESTO**

### Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



|                              | B1 | B2 | D1              | D2 | H1  | H2   | H3 | H4 | L1  | L2 | L3 | L4 | L5 | T1 | T2 | ≙C |
|------------------------------|----|----|-----------------|----|-----|------|----|----|-----|----|----|----|----|----|----|----|
| VZWF-B-L-M22C-G14-135-...    | 48 | 30 | G $\frac{1}{4}$ | M4 | 101 | 85.6 | 42 | 7  | 92  | 67 | 58 | 25 | 21 | 12 | 4  | 27 |
| VZWF-B-L-M22C-G14-135-...-R1 | 44 | 30 | G $\frac{1}{4}$ | M4 | 101 | 85.6 | 42 | 7  | 94  | 67 | 58 | 25 | 21 | 12 | 4  | 27 |
| VZWF-B-L-M22C-G38-135-...    | 48 | 30 | G $\frac{3}{8}$ | M4 | 101 | 85.6 | 42 | 7  | 92  | 67 | 58 | 25 | 21 | 12 | 4  | 27 |
| VZWF-B-L-M22C-G38-135-...-R1 | 44 | 30 | G $\frac{3}{8}$ | M4 | 101 | 85.6 | 42 | 7  | 94  | 67 | 58 | 25 | 21 | 12 | 4  | 27 |
| VZWF-B-L-M22C-G12-135-...    | 48 | 30 | G $\frac{1}{2}$ | M4 | 101 | 85.6 | 42 | 7  | 92  | 67 | 58 | 25 | 21 | 12 | 4  | 27 |
| VZWF-B-L-M22C-G12-135-...-R1 | 44 | 30 | G $\frac{1}{2}$ | M4 | 101 | 85.6 | 42 | 7  | 94  | 67 | 58 | 25 | 21 | 12 | 4  | 27 |
| VZWF-B-L-M22C-G34-275-...    | 70 | 30 | G $\frac{3}{4}$ | M6 | 120 | 95.4 | 42 | 7  | 106 | 96 | 58 | 40 | 28 | 16 | 6  | 41 |
| VZWF-B-L-M22C-G1-275-...     | 70 | 30 | G1              | M6 | 120 | 95.4 | 42 | 7  | 106 | 96 | 58 | 40 | 28 | 16 | 6  | 41 |

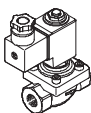


New

FESTO

## Solenoid valves VZWF, force pilot operated

Technical data

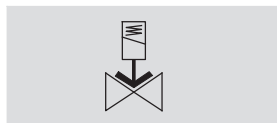
| Ordering data – Solenoid valve VZWF                                               |                          |               |                                 |                                 |                                    |
|-----------------------------------------------------------------------------------|--------------------------|---------------|---------------------------------|---------------------------------|------------------------------------|
|                                                                                   | Process valve connection | Brass housing |                                 | Stainless steel casting housing |                                    |
|                                                                                   |                          | Part No.      | Type                            | Part No.                        | Type                               |
|  | G $\frac{1}{4}$          | 1492110       | VZWF-B-L-M22C-G14-135-1P4-10    | 1492118                         | VZWF-B-L-M22C-G14-135-1P4-10-R1    |
|                                                                                   |                          | 1492126       | VZWF-B-L-M22C-G14-135-E-1P4-10  | 1492134                         | VZWF-B-L-M22C-G14-135-E-1P4-10-R1  |
|                                                                                   |                          | 1492142       | VZWF-B-L-M22C-G14-135-V-1P4-10  | 1492150                         | VZWF-B-L-M22C-G14-135-V-1P4-10-R1  |
|                                                                                   |                          | 1492206       | VZWF-B-L-M22C-G14-135-2AP4-10   | 1492214                         | VZWF-B-L-M22C-G14-135-2AP4-10-R1   |
|                                                                                   |                          | 1492222       | VZWF-B-L-M22C-G14-135-E-2AP4-10 | 1492230                         | VZWF-B-L-M22C-G14-135-E-2AP4-10-R1 |
|                                                                                   |                          | 1492238       | VZWF-B-L-M22C-G14-135-V-2AP4-10 | 1492246                         | VZWF-B-L-M22C-G14-135-V-2AP4-10-R1 |
|                                                                                   |                          | 1492302       | VZWF-B-L-M22C-G14-135-3AP4-10   | 1492310                         | VZWF-B-L-M22C-G14-135-3AP4-10-R1   |
|                                                                                   |                          | 1492318       | VZWF-B-L-M22C-G14-135-E-3AP4-10 | 1492326                         | VZWF-B-L-M22C-G14-135-E-3AP4-10-R1 |
|                                                                                   |                          | 1492334       | VZWF-B-L-M22C-G14-135-V-3AP4-10 | 1492342                         | VZWF-B-L-M22C-G14-135-V-3AP4-10-R1 |
|                                                                                   | G $\frac{3}{8}$          | 1492111       | VZWF-B-L-M22C-G38-135-1P4-10    | 1492119                         | VZWF-B-L-M22C-G38-135-1P4-10-R1    |
|                                                                                   |                          | 1492127       | VZWF-B-L-M22C-G38-135-E-1P4-10  | 1492135                         | VZWF-B-L-M22C-G38-135-E-1P4-10-R1  |
|                                                                                   |                          | 1492143       | VZWF-B-L-M22C-G38-135-V-1P4-10  | 1492151                         | VZWF-B-L-M22C-G38-135-V-1P4-10-R1  |
|                                                                                   |                          | 1492207       | VZWF-B-L-M22C-G38-135-2AP4-10   | 1492215                         | VZWF-B-L-M22C-G38-135-2AP4-10-R1   |
|                                                                                   |                          | 1492223       | VZWF-B-L-M22C-G38-135-E-2AP4-10 | 1492231                         | VZWF-B-L-M22C-G38-135-E-2AP4-10-R1 |
|                                                                                   |                          | 1492239       | VZWF-B-L-M22C-G38-135-V-2AP4-10 | 1492247                         | VZWF-B-L-M22C-G38-135-V-2AP4-10-R1 |
|                                                                                   |                          | 1492303       | VZWF-B-L-M22C-G38-135-3AP4-10   | 1492311                         | VZWF-B-L-M22C-G38-135-3AP4-10-R1   |
|                                                                                   |                          | 1492319       | VZWF-B-L-M22C-G38-135-E-3AP4-10 | 1492327                         | VZWF-B-L-M22C-G38-135-E-3AP4-10-R1 |
|                                                                                   |                          | 1492335       | VZWF-B-L-M22C-G38-135-V-3AP4-10 | 1492343                         | VZWF-B-L-M22C-G38-135-V-3AP4-10-R1 |
|                                                                                   | G $\frac{1}{2}$          | 1492112       | VZWF-B-L-M22C-G12-135-1P4-10    | 1492120                         | VZWF-B-L-M22C-G12-135-1P4-10-R1    |
|                                                                                   |                          | 1492128       | VZWF-B-L-M22C-G12-135-E-1P4-10  | 1492136                         | VZWF-B-L-M22C-G12-135-E-1P4-10-R1  |
|                                                                                   |                          | 1492144       | VZWF-B-L-M22C-G12-135-V-1P4-10  | 1492152                         | VZWF-B-L-M22C-G12-135-V-1P4-10-R1  |
|                                                                                   |                          | 1492208       | VZWF-B-L-M22C-G12-135-2AP4-10   | 1492216                         | VZWF-B-L-M22C-G12-135-2AP4-10-R1   |
|                                                                                   |                          | 1492224       | VZWF-B-L-M22C-G12-135-E-2AP4-10 | 1492232                         | VZWF-B-L-M22C-G12-135-E-2AP4-10-R1 |
|                                                                                   |                          | 1492240       | VZWF-B-L-M22C-G12-135-V-2AP4-10 | 1492248                         | VZWF-B-L-M22C-G12-135-V-2AP4-10-R1 |
|                                                                                   |                          | 1492304       | VZWF-B-L-M22C-G12-135-3AP4-10   | 1492312                         | VZWF-B-L-M22C-G12-135-3AP4-10-R1   |
|                                                                                   |                          | 1492320       | VZWF-B-L-M22C-G12-135-E-3AP4-10 | 1492328                         | VZWF-B-L-M22C-G12-135-E-3AP4-10-R1 |
|                                                                                   |                          | 1492336       | VZWF-B-L-M22C-G12-135-V-3AP4-10 | 1492344                         | VZWF-B-L-M22C-G12-135-V-3AP4-10-R1 |
|                                                                                   | G $\frac{3}{4}$          | 1492113       | VZWF-B-L-M22C-G34-275-1P4-6     | 1492121                         | VZWF-B-L-M22C-G34-275-1P4-6-R1     |
|                                                                                   |                          | 1492129       | VZWF-B-L-M22C-G34-275-E-1P4-6   | 1492137                         | VZWF-B-L-M22C-G34-275-E-1P4-6-R1   |
|                                                                                   |                          | 1492145       | VZWF-B-L-M22C-G34-275-V-1P4-6   | 1492153                         | VZWF-B-L-M22C-G34-275-V-1P4-6-R1   |
|                                                                                   |                          | 1492209       | VZWF-B-L-M22C-G34-275-2AP4-6    | 1492217                         | VZWF-B-L-M22C-G34-275-2AP4-6-R1    |
|                                                                                   |                          | 1492225       | VZWF-B-L-M22C-G34-275-E-2AP4-6  | 1492233                         | VZWF-B-L-M22C-G34-275-E-2AP4-6-R1  |
|                                                                                   |                          | 1492241       | VZWF-B-L-M22C-G34-275-V-2AP4-6  | 1492249                         | VZWF-B-L-M22C-G34-275-V-2AP4-6-R1  |
|                                                                                   |                          | 1492305       | VZWF-B-L-M22C-G34-275-3AP4-6    | 1492313                         | VZWF-B-L-M22C-G34-275-3AP4-6-R1    |
|                                                                                   |                          | 1492321       | VZWF-B-L-M22C-G34-275-E-3AP4-6  | 1492329                         | VZWF-B-L-M22C-G34-275-E-3AP4-6-R1  |
|                                                                                   |                          | 1492337       | VZWF-B-L-M22C-G34-275-V-3AP4-6  | 1492345                         | VZWF-B-L-M22C-G34-275-V-3AP4-6-R1  |
|                                                                                   | G1                       | 1492114       | VZWF-B-L-M22C-G1-275-1P4-6      | 1492122                         | VZWF-B-L-M22C-G1-275-1P4-6-R1      |
|                                                                                   |                          | 1492130       | VZWF-B-L-M22C-G1-275-E-1P4-6    | 1492138                         | VZWF-B-L-M22C-G1-275-E-1P4-6-R1    |
|                                                                                   |                          | 1492146       | VZWF-B-L-M22C-G1-275-V-1P4-6    | 1492154                         | VZWF-B-L-M22C-G1-275-V-1P4-6-R1    |
|                                                                                   |                          | 1492210       | VZWF-B-L-M22C-G1-275-2AP4-6     | 1492218                         | VZWF-B-L-M22C-G1-275-2AP4-6-R1     |
|                                                                                   |                          | 1492226       | VZWF-B-L-M22C-G1-275-E-2AP4-6   | 1492234                         | VZWF-B-L-M22C-G1-275-E-2AP4-6-R1   |
|                                                                                   |                          | 1492242       | VZWF-B-L-M22C-G1-275-V-2AP4-6   | 1492250                         | VZWF-B-L-M22C-G1-275-V-2AP4-6-R1   |
|                                                                                   |                          | 1492306       | VZWF-B-L-M22C-G1-275-3AP4-6     | 1492314                         | VZWF-B-L-M22C-G1-275-3AP4-6-R1     |
|                                                                                   |                          | 1492322       | VZWF-B-L-M22C-G1-275-E-3AP4-6   | 1492330                         | VZWF-B-L-M22C-G1-275-E-3AP4-6-R1   |
|                                                                                   |                          | 1492338       | VZWF-B-L-M22C-G1-275-V-3AP4-6   | 1492346                         | VZWF-B-L-M22C-G1-275-V-3AP4-6-R1   |

## Solenoid valves VZWF, force pilot operated

**FESTO**

Technical data

Function



 Flow rate Kv  
20 ... 28 m<sup>3</sup>/h

-N- Connecting thread  
G1¼ ... G2



| General technical data              |                                       |     |       |
|-------------------------------------|---------------------------------------|-----|-------|
| Process valve connection            | G1¼                                   | G1½ | G2    |
| Nominal size (DN)                   | 40                                    | 40  | 50    |
| Valve function                      | 2/2-way, single solenoid, closed      |     |       |
| Design                              | Diaphragm valve, force pilot operated |     |       |
| Type of mounting                    | In-line installation                  |     |       |
| Actuation type                      | Electric                              |     |       |
| Manual override                     | None                                  |     |       |
| Mounting position                   | Solenoid vertical                     |     |       |
| Sealing principle                   | Soft                                  |     |       |
| Direction of flow                   | Non-reversible                        |     |       |
| Max. viscosity [mm <sup>2</sup> /s] | 22                                    |     |       |
| Protection class                    | IP 65                                 |     |       |
| Product weight [g]                  | 4,500                                 |     | 6,500 |

| Operating and environmental conditions    |                                                                                           |        |         |
|-------------------------------------------|-------------------------------------------------------------------------------------------|--------|---------|
| Process valve connection                  | G1¼                                                                                       | G1½    | G2      |
| Switching time on [ms]                    | 620                                                                                       |        | 1,220   |
| Switching time off [ms]                   | 1,140                                                                                     |        | 2,140   |
| Standard nominal flow rate [l/min]        | 21,370                                                                                    | 23,500 | 29,900  |
| Flow rate [m <sup>3</sup> /h]             | 20                                                                                        | 22.5   | 28      |
| Operating pressure [bar]                  | 0 ... 10                                                                                  |        | 0 ... 6 |
| Process valve nominal pressure (PN)       | 40                                                                                        |        |         |
| Differential pressure [bar]               | 0                                                                                         |        |         |
| Operating medium with NBR seal (standard) | Dried, filtered compressed air, neutral gases, vacuum, cold water                         |        |         |
| Operating medium with EPDM seal           | Filtered, unlubricated compressed air, neutral gases, unlubricated vacuum air, water      |        |         |
| Operating medium with FPM seal            | Filtered compressed air 50 µm, neutral gases, vacuum, neutral liquids, water, mineral oil |        |         |
| Ambient temperature [°C]                  | -10 ... +35 °C                                                                            |        |         |
| Temperature of medium [°C]                | -10 ... +80 °C                                                                            |        |         |
| Leak rate to EN 12266-1                   | A                                                                                         |        |         |
| Corrosion resistance class                |                                                                                           |        |         |
| CRC <sup>1)</sup> Brass                   | 1                                                                                         |        |         |
| CRC <sup>2)</sup> Stainless steel         | 3                                                                                         |        |         |

- 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. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

# Solenoid valves VZWF, force pilot operated

Technical data

| Materials           |                            |                                                                     |
|---------------------|----------------------------|---------------------------------------------------------------------|
| Solenoid valves     |                            | Material number                                                     |
| 1 Housing           | Brass casting              | CW617N                                                              |
|                     | Stainless steel casting    | 1.4581                                                              |
| 2 Screws            | High-alloy stainless steel | 1.4301                                                              |
| 3 Seals             | NBR, FPM, EPDM             | –                                                                   |
| – Note on materials |                            | Contains PWIS (paint-wetting impairment substances), RoHS-compliant |

| Electrical data                                |                        |      |                                             |              |              |  |
|------------------------------------------------|------------------------|------|---------------------------------------------|--------------|--------------|--|
|                                                |                        |      | VZWF- ... 1                                 | VZWF- ... 2A | VZWF- ... 3A |  |
| Electrical connection                          |                        |      | Plug to EN 175301-803 type A, square design |              |              |  |
| CE mark as per EU Pressure Equipment Directive |                        |      | –                                           | Yes          | Yes          |  |
| Coil characteristics                           | Direct current DC      | [V]  | 24                                          | –            | –            |  |
|                                                | Alternating current AC | [V]  | –                                           | 110          | 230          |  |
|                                                |                        | [W]  | 11                                          | –            | –            |  |
|                                                | Switching power        | [VA] | –                                           | 19           | 18           |  |
|                                                | Holding power          | [VA] | –                                           | 16           | 15           |  |
|                                                |                        | [Hz] | –                                           | 50, 60       | 50, 60       |  |
| Coil characteristics                           | Direct current DC      | [V]  | 24                                          | –            | –            |  |
|                                                | Alternating current AC | [V]  | –                                           | 110          | 230          |  |
|                                                |                        | [W]  | 30                                          | –            | –            |  |
|                                                | Switching power        | [VA] | –                                           | 30           | 30           |  |
|                                                | Holding power          | [VA] | –                                           | 30           | 30           |  |
|                                                |                        | [Hz] | –                                           | 50, 60       | 50, 60       |  |
| Permissible voltage fluctuations               |                        | [%]  | ±10                                         |              |              |  |

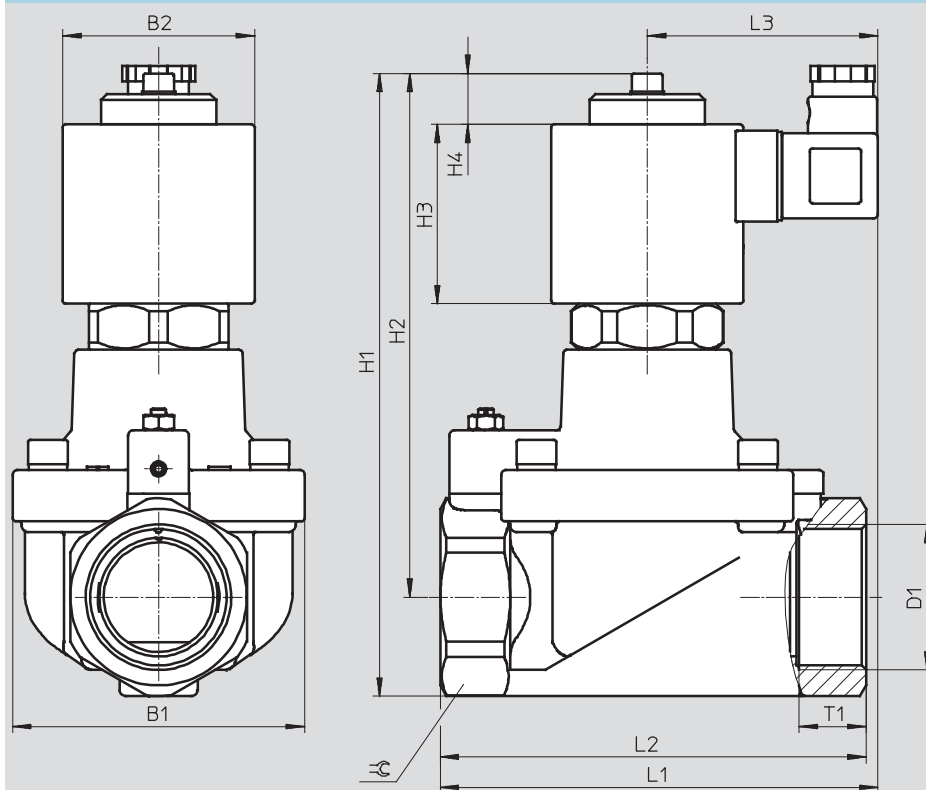
## Solenoid valves VZWF, force pilot operated

Technical data

**FESTO**

### Dimensions

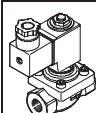
Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)



|                          | B1  | B2 | D1  | H1  | H2    | H3 | H4 | L1  | L2  | L3 | T1 | ⌀  |
|--------------------------|-----|----|-----|-----|-------|----|----|-----|-----|----|----|----|
| VZWF-L-M22C-G114-400-... | 96  | 63 | G1¼ | 205 | 172.2 | 59 | 17 | 148 | 140 | 76 | 22 | 58 |
| VZWF-L-M22C-G112-400-... | 96  | 63 | G1½ | 205 | 172.2 | 59 | 17 | 148 | 140 | 76 | 22 | 58 |
| VZWF-L-M22C-G2-500-...   | 112 | 63 | G2  | 218 | 178.6 | 59 | 17 | 159 | 168 | 76 | 25 | 70 |

# Solenoid valves VZWF, force pilot operated

Technical data

| Ordering data – Solenoid valve VZWF                                               |                          |               |                                |                                 |                                   |
|-----------------------------------------------------------------------------------|--------------------------|---------------|--------------------------------|---------------------------------|-----------------------------------|
|                                                                                   | Process valve connection | Brass housing |                                | Stainless steel casting housing |                                   |
|                                                                                   |                          | Part No.      | Type                           | Part No.                        | Type                              |
|  | G1 1/4                   | 1492115       | VZWF-L-M22C-G114-400-1P4-10    | 1492123                         | VZWF-L-M22C-G114-400-1P4-10-R1    |
|                                                                                   |                          | 1492131       | VZWF-L-M22C-G114-400-E-1P4-10  | 1492139                         | VZWF-L-M22C-G114-400-E-1P4-10-R1  |
|                                                                                   |                          | 1492147       | VZWF-L-M22C-G114-400-V-1P4-10  | 1492155                         | VZWF-L-M22C-G114-400-V-1P4-10-R1  |
|                                                                                   |                          | 1492211       | VZWF-L-M22C-G114-400-2AP4-10   | 1492219                         | VZWF-L-M22C-G114-400-2AP4-10-R1   |
|                                                                                   |                          | 1492227       | VZWF-L-M22C-G114-400-E-2AP4-10 | 1492235                         | VZWF-L-M22C-G114-400-E-2AP4-10-R1 |
|                                                                                   |                          | 1492243       | VZWF-L-M22C-G114-400-V-2AP4-10 | 1492251                         | VZWF-L-M22C-G114-400-V-2AP4-10-R1 |
|                                                                                   |                          | 1492307       | VZWF-L-M22C-G114-400-3AP4-10   | 1492315                         | VZWF-L-M22C-G114-400-3AP4-10-R1   |
|                                                                                   |                          | 1492323       | VZWF-L-M22C-G114-400-E-3AP4-10 | 1492331                         | VZWF-L-M22C-G114-400-E-3AP4-10-R1 |
|                                                                                   |                          | 1492339       | VZWF-L-M22C-G114-400-V-3AP4-10 | 1492347                         | VZWF-L-M22C-G114-400-V-3AP4-10-R1 |
|                                                                                   | G1 1/2                   | 1492116       | VZWF-L-M22C-G112-400-1P4-10    | 1492124                         | VZWF-L-M22C-G112-400-1P4-10-R1    |
|                                                                                   |                          | 1492132       | VZWF-L-M22C-G112-400-E-1P4-10  | 1492140                         | VZWF-L-M22C-G112-400-E-1P4-10-R1  |
|                                                                                   |                          | 1492148       | VZWF-L-M22C-G112-400-V-1P4-10  | 1492156                         | VZWF-L-M22C-G112-400-V-1P4-10-R1  |
|                                                                                   |                          | 1492212       | VZWF-L-M22C-G112-400-2AP4-10   | 1492220                         | VZWF-L-M22C-G112-400-2AP4-10-R1   |
|                                                                                   |                          | 1492228       | VZWF-L-M22C-G112-400-E-2AP4-10 | 1492236                         | VZWF-L-M22C-G112-400-E-2AP4-10-R1 |
|                                                                                   |                          | 1492244       | VZWF-L-M22C-G112-400-V-2AP4-10 | 1492252                         | VZWF-L-M22C-G112-400-V-2AP4-10-R1 |
|                                                                                   |                          | 1492308       | VZWF-L-M22C-G112-400-3AP4-10   | 1492316                         | VZWF-L-M22C-G112-400-3AP4-10-R1   |
|                                                                                   |                          | 1492324       | VZWF-L-M22C-G112-400-E-3AP4-10 | 1492333                         | VZWF-L-M22C-G112-400-E-3AP4-10-R1 |
|                                                                                   |                          | 1492340       | VZWF-L-M22C-G112-400-V-3AP4-10 | 1492348                         | VZWF-L-M22C-G112-400-V-3AP4-10-R1 |
|                                                                                   | G2                       | 1492117       | VZWF-L-M22C-G2-500-1P4-6       | 1492125                         | VZWF-L-M22C-G2-500-1P4-6-R1       |
|                                                                                   |                          | 1492133       | VZWF-L-M22C-G2-500-E-1P4-6     | 1492141                         | VZWF-L-M22C-G2-500-E-1P4-6-R1     |
|                                                                                   |                          | 1492149       | VZWF-L-M22C-G2-500-V-1P4-6     | 1492157                         | VZWF-L-M22C-G2-500-V-1P4-6-R1     |
|                                                                                   |                          | 1492213       | VZWF-L-M22C-G2-500-2AP4-6      | 1492221                         | VZWF-L-M22C-G2-500-2AP4-6-R1      |
|                                                                                   |                          | 1492229       | VZWF-L-M22C-G2-500-E-2AP4-6    | 1492237                         | VZWF-L-M22C-G2-500-E-2AP4-6-R1    |
|                                                                                   |                          | 1492245       | VZWF-L-M22C-G2-500-V-2AP4-6    | 1492253                         | VZWF-L-M22C-G2-500-V-2AP4-6-R1    |
|                                                                                   |                          | 1492309       | VZWF-L-M22C-G2-500-3AP4-6      | 1492317                         | VZWF-L-M22C-G2-500-3AP4-6-R1      |
|                                                                                   |                          | 1492325       | VZWF-L-M22C-G2-500-E-3AP4-6    | 1492333                         | VZWF-L-M22C-G2-500-E-3AP4-6-R1    |
|                                                                                   |                          | 1492341       | VZWF-L-M22C-G2-500-V-3AP4-6    | 1492349                         | VZWF-L-M22C-G2-500-V-3AP4-6-R1    |

## Product Range and Company Overview

### A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



**Custom Automation Components**  
Complete custom engineered solutions



**Custom Control Cabinets**  
Comprehensive engineering support and on-site services



**Complete Systems**  
Shipment, stocking and storage services

### The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



**Electromechanical**  
Electromechanical actuators, motors, controllers & drives



**Pneumatics**  
Pneumatic linear and rotary actuators, valves, and air supply



**PLCs and I/O Devices**  
PLC's, operator interfaces, sensors and I/O devices

### Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

### Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.



© Copyright 2008, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. For Liability and Warranty conditions, refer to our "Terms and Conditions of Sale", available from your local Festo office. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Festo. All technical data subject to change according to technical update.



Printed on recycled paper at New Horizon Graphic, Inc., FSC certified as an environmentally friendly printing plant.

# 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)

**Fax:** 1.800.96.FESTO (1.800.963.3786)

**Email:** [customer.service@us.festo.com](mailto:customer.service@us.festo.com)

For technical support,

**Call:** 1.866.GO.FESTO (1.866.463.3786)

**Fax:** 1.800.96.FESTO (1.800.963.3786)

**Email:** [product.support@us.festo.com](mailto:product.support@us.festo.com)

### Canadian Customers:

**Call:** 1.877.GO.FESTO (1.877.463.3786)

**Fax:** 1.877.FX.FESTO (1.877.393.3786)

**Email:** [festo.canada@ca.festo.com](mailto:festo.canada@ca.festo.com)

## USA Headquarters

Festo Corporation  
395 Moreland Road  
P.O. Box 18023  
Hauppauge, NY 11788, USA  
[www.festo.com/us](http://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  
Mt. Prospect, IL 60056, USA

### Dallas

1825 Lakeway Drive, Suite 600  
Lewisville, TX 75057, USA

### Detroit – Automotive Engineering Center

2601 Cambridge Court, Suite 320  
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](mailto:info@festo-usa.com)

[www.festo.com/us](http://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](mailto:festo.canada@ca.festo.com)

[www.festo.ca](http://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](mailto:festo.mexico@mx.festo.com)

[www.festo.com/mx](http://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



## Festo Worldwide

Argentina Australia Austria Belarus Belgium Brazil Bulgaria Canada Chile China Colombia Croatia Czech Republic Denmark  
Estonia Finland France Germany Great Britain Greece Hong Kong Hungary India Indonesia Iran Ireland Israel Italy Japan Latvia  
Lithuania Malaysia Mexico Netherlands New Zealand Norway Peru Philippines Poland Romania Russia Serbia Singapore  
Slovakia Slovenia South Africa South Korea Spain Sweden Switzerland Taiwan Thailand Turkey Ukraine United States Venezuela

[www.festo.com](http://www.festo.com)