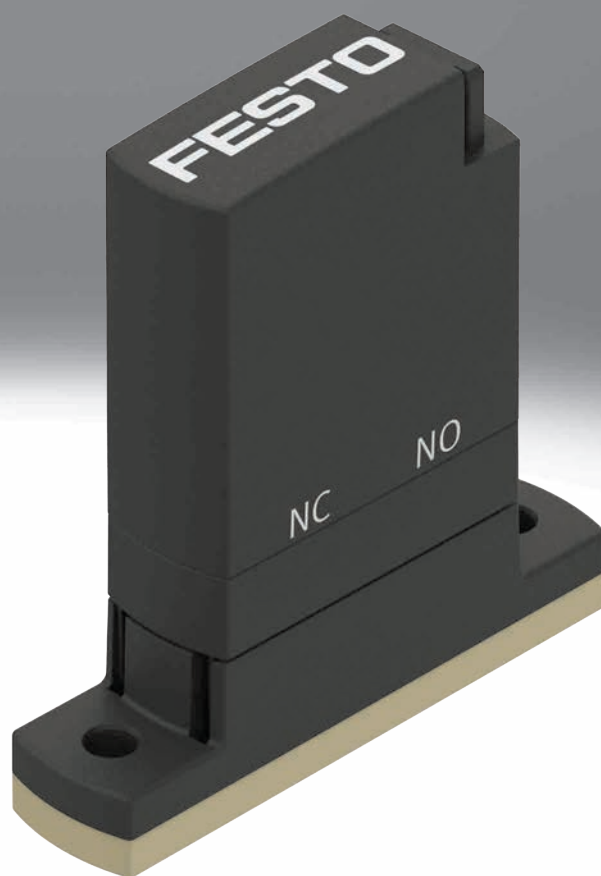


Media separated solenoid valves VYKA

FESTO



Key features

Special characteristics

- Very easy to clean thanks to media separation
- Low media consumption thanks to small internal volume
- Materials in contact with the media conform to FDA-listed materials
- Developed according to ISO 13485
- High-quality materials, therefore also suitable for aggressive media
- High flow rate with minimal size (width 7 mm and nominal width 1.2 mm)
- High repetition accuracy, switching frequency and precision, therefore also suitable for extremely small volumes and dosing tasks
- Low power consumption as a result of holding current reduction
- Extremely flexible in use thanks to 3/2-way and 2/2-way variants as well as 12 ... 26 V DC actuation

Function

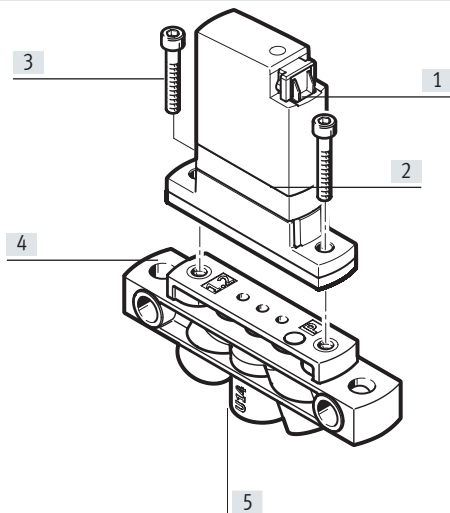
The media separated solenoid valve VYKA is designed for installation in laboratory devices. The valve is used to control gaseous and liquid media within the limits of the technical data. The chemical resistance of the valve materials coming into contact with the media must be checked for each application.

The valve VYKA is a directly actuated directional control valve with solenoid coil. In a de-energised state, the valve automatically returns to its normal position. The normal position is available as a closed or open variant.

Note

The valve uses FDA-listed materials but is not a food contact material in the sense of EC1935/2004. Country-specific regulations in respect of food contact must be taken into account.

Configuration



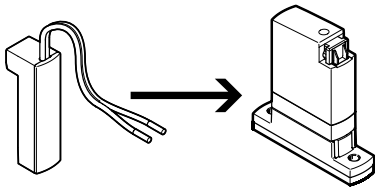
- [1] Terminal contact for E-box VAVE or connecting cable NEBV
- [2] Solenoid valve
- [3] Screws for mounting on the sub-base (included in the scope of delivery of the valves)
- [4] Sub-base VABS
- [5] Media connections

Key features

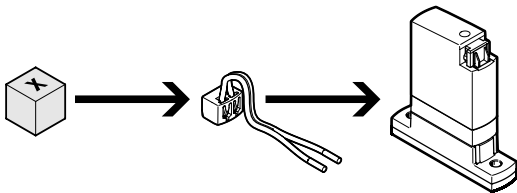
Control

-  - Note

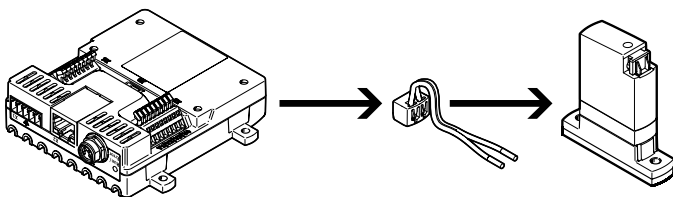
The solenoid valve VYKA is controlled by a constant-current source. A holding current reduction is essential as otherwise the valve will significantly heat up. A holding current reduction can be achieved as follows:



When using E-box VAVE, holding current reduction is integrated (recommended).

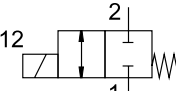
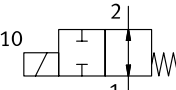
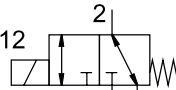


When using connecting cable NEBV, a separate way for the holding current reduction must be provided by the customer.



The valve control module VAEM together with the connecting cable NEBV (recommended) offers the option of control with holding current reduction.

Product range overview

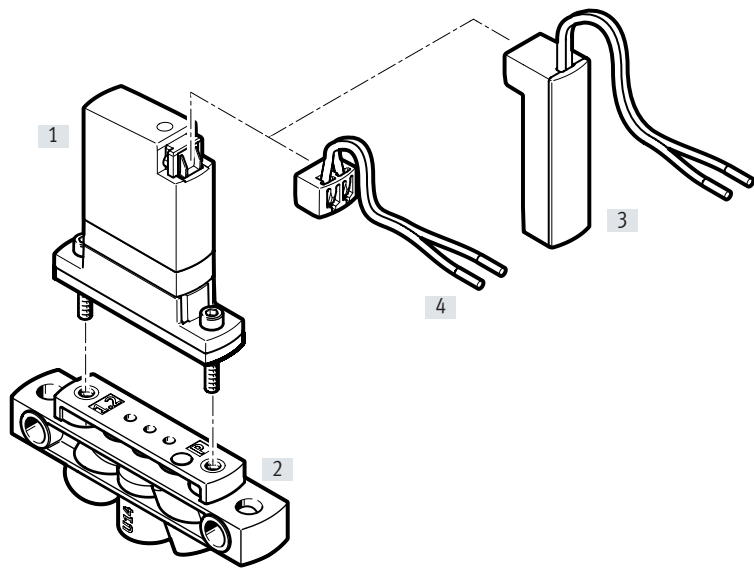
| Function | Circuit symbol | Type | Valve function | Flow rate Kv | | Operating voltage In combination with VAVE-K1 | → Page/ Internet |
|--------------------------------|---|--------------|--|--------------|---------|--|---------------------|
| | | | | [m³/h] | [l/min] | | |
| Media separated solenoid valve | Rocker valve with diaphragm seal | | | | | | |
| |  | VYKA-F7-M22C | 2/2-way solenoid valve: <ul style="list-style-type: none">• Single solenoid• Normally closed | 0.013 | 0.22 | 12 ... 26 V DC | 7 |
| |  | VYKA-F7-M22U | 2/2-way solenoid valve: <ul style="list-style-type: none">• Single solenoid• Normally open | 0.013 | 0.22 | 12 ... 26 V DC | 7 |
| |  | VYKA-F7-M32 | 3/2-way solenoid valve: <ul style="list-style-type: none">• Single solenoid• Normally closed/open | 0.021 | 0.35 | 12 ... 26 V DC | 7 |

Type codes

| | | |
|-------------|--|--|
| 001 | Series | |
| VYKA | Solenoid valve | |
| 002 | Directional control valve type | |
| F | Flanged valve | |
| 003 | Size | |
| 7 | Size 7 | |
| 004 | Valve function | |
| M22U | 2/2-way valve, normally open | |
| M22C | 2/2-way valve, normally closed | |
| M32 | 3/2-way valve, normally closed or open | |
| 005 | Nominal width | |
| 12 | 1.2 mm | |



| | | |
|-----------|-----------------------------------|--|
| 006 | Pressure range [bar] | |
| D2 | 0 ... 2 | |
| 007 | Housing material | |
| P | PEEK | |
| 008 | Diaphragm and sealing material | |
| V | FPM | |
| F | FFPM | |
| 009 | Nominal operating voltage | |
| 5Y | 12 V DC to 26 V DC | |
| 010 | Electrical connection | |
| Q7 | Plug socket, connection pattern Q | |

Peripherals overview



| Accessories | | | |
|-------------|-----------------|------------------|-----------------|
| | Type/order code | Description | → Page/Internet |
| [1] | VYKA | Solenoid valve | 12 |
| [2] | VABS | Sub-base | 12 |
| [3] | VAVE | E-box | 12 |
| [4] | NEBV | Connecting cable | 12 |

Data sheet

-  - 7 mm
-  - Flow rate
0.013 ... 0.021 m³/h



General technical data

| | | | |
|--|---------------|-------------------------------------|---------------------------------------|
| Valve function | | | 2/2-way, single solenoid, closed |
| | | | 2/2-way, single solenoid, open |
| | | | 3/2-way, single solenoid, open/closed |
| Design | | | Rocker valve with diaphragm seal |
| Reset method | | | Mechanical spring |
| Size | | | 7 |
| Nominal width | | [mm] | 1.2 |
| Grid dimension | | [mm] | 7.5 |
| Fluid connection | | | Flange |
| Standard nominal flow rate | VYKA-F7-M22C | [l/min] | 7.2 |
| | VYKA-F7-M22U | | 7 |
| | VYKA-F7-M32 | | 11 |
| Note on standard nominal flow rate | | | With a pressure drop 1 → 0 bar (gas) |
| Flow rate Kv | 2/2-way valve | [m³/h] | 0.013 |
| | | [l/min] | 0.22 |
| | 3/2-way valve | [m³/h] | 0.021 |
| | | [l/min] | 0.35 |
| Note on flow rate Kv | | | For water as medium |
| | | | Pressure difference 1 bar |
| Water flow rate at max. operating pressure | 2/2-way valve | [m³/h] | 0.018 |
| | | [l/min] | 0.3 |
| | 3/2-way valve | [m³/h] | 0.03 |
| | | [l/min] | 0.5 |
| Internal volume | 2/2-way valve | 20 µl including 2 fluid connections | |
| | 3/2-way valve | 22 µl including 2 fluid connections | |
| Sealing principle | | | Soft |
| Direction of flow | | | Reversible with restrictions |
| Actuation type | | | Electrical |
| Type of control | | | Direct |
| Manual override | | | None |
| Type of mounting | | | With through-hole for M2 screw |
| Mounting position | | | Any |
| Degree of protection | | | IP40 |
| Note on degree of protection | | | In assembled state |
| Application information | | | For indoor use only |
| Corrosion resistance class ¹⁾ | | | 0 |
| Product weight | | [g] | 10.9 |

1) Corrosion resistance class CRC 0 to Festo standard FN 940070

No corrosion stress. Applies to small, visually unimportant standards-based parts such as threaded pins, circlips and clamping sleeves which are usually only available on the market in a phosphated or burnished version (and possibly oiled) as well as to ball bearings (for components < CRC 3) and plain bearings.

Data sheet

| Electrical data | | | | | | |
|--|---------------------------------|--|---|----------------------------|---------------------------|-------------|
| In combination with VAVE | | | | | | |
| Operating voltage range | [V DC] | 12 ... 26 | | | | |
| Note on operating voltage range | | With E-box VAVE-K1-... | | | | |
| Permissible voltage fluctuations | [%] | ±10 | | | | |
| Electrical connection 1 | Connection type | Socket | | | | |
| | Connection technology | Plug pattern Q7 | | | | |
| | Number of pins/wires | 2 | | | | |
| Insulation class | | B | | | | |
| Electrical power consumption | [W] | 3.5 | | | | |
| Note on power consumption | | Low-current phase 0.3 W, high-current phase 3.5 W for 60 ms, in combination with VAVE-K1-... | | | | |
| Characteristic coil data | | 12 ... 26 V DC: low-current phase 0.06 W, high-current phase 2.2 W | | | | |
| Duty cycle | [%] | 100, in combination with holding current reduction | | | | |
| | | Observe notes on operating the solenoid valves | | | | |
| Plug NEBV with use of individual constant-current source | | | | | | |
| Inrush current | [mA] | 300 for 60 ms | | | | |
| Holding current | [mA] | 50 | | | | |
| Permissible energy fluctuations | [%] | ± 2 | | | | |
| Switching time | | | | | | |
| | | 2/2-way valve | | 3/2-way valve | | |
| | | Diaphragm material FFPM | Diaphragm material FPM | Diaphragm material FFPM | Diaphragm material FPM | |
| Switching time for gaseous media | On | [ms] | 6 | 4 | 5 | 4 |
| | Off | [ms] | 6 | 4 | 5 | 5 |
| Switching time for liquid media | On | [ms] | 5 | 5 | 5 | 4 |
| | Off | [ms] | 7 | 6 | 6 | 6 |
| Max. switching frequency | | [Hz] | 6 | | | |
| Note on switching frequency | | | Dependent on the ambient temperature and installation state | | | |
| Switching frequency | | | | | | |
| | | | Ambient temperature | | | |
| | | | < 20°C | 20 ... 30°C | 30 ... 40°C | 40 ... 50°C |
| Maximum switching frequency | Individual valve | [Hz] | 6 | 5 | 4 | 3 |
| | Manifold assembly ¹⁾ | [Hz] | 2 | 1.5 | 1 | 0.5 |

1) Space between two valves: < 7.5 mm

Data sheet

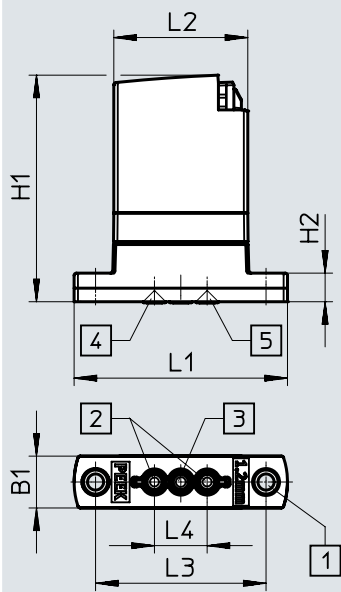
| Operating and environmental conditions | | Diaphragm material FFPM | Diaphragm material FPM |
|--|-------|--|------------------------|
| Medium | | Liquid media | |
| | | Gaseous media | |
| Note on the medium | | Note resistance of materials in contact with the media | |
| | | Maximum particle size 5 µm | |
| Temperature of gaseous media | [°C] | 15 ... 50 | 0 ... 50 |
| Temperature of liquid media | [°C] | 15 ... 50 | 0 ... 50 |
| Ambient temperature | [°C] | 15 ... 50 | 0 ... 50 |
| Storage temperature | [°C] | -20 ... 70 | -20 ... 70 |
| Pressure of medium | [MPa] | 0 ... 0.2 | |
| | [bar] | 0 ... 2 | |
| | [psi] | 0 ... 29 | |
| Pressure of medium, reversible | [MPa] | 0 ... 0.1 | |
| | [bar] | 0 ... 1 | |
| | [psi] | 0 ... 14.5 | |
| Burst pressure | [MPa] | 2.3 | |
| | [bar] | 23 | |
| | [psi] | 333.5 | |

| Information on materials | | |
|-------------------------------------|---------------|--|
| Materials in contact with the media | All types | PEEK |
| | VYKA- ... -PF | FFPM |
| | VYKA- ... -PV | FPM |
| Food-safe | | See supplementary material information |
| Housing material | | Reinforced PA |
| | | PEEK |
| | | Reinforced PPA |
| Diaphragm material | VYKA- ... -PF | FFPM |
| | VYKA- ... -PV | FPM |
| Sealing material | VYKA- ... -PF | FFPM |
| | VYKA- ... -PV | FPM |
| Material of sub-base VABS | | PEEK |
| Note on materials | | RoHS-compliant |
| PWIS conformity | | VDMA24364 zone III |

Data sheet

Dimensions Download CAD data → www.festo.com

Solenoid valve



- [1] Mounting holes, screws supplied for threaded hole M2
- [2] Fluid connection
- [3] COM port (only 3/2-way variants)
- [4] Valve inlet only for VYKA-F7-M22U
- [5] Valve inlet only for VYKA-F7-M22C

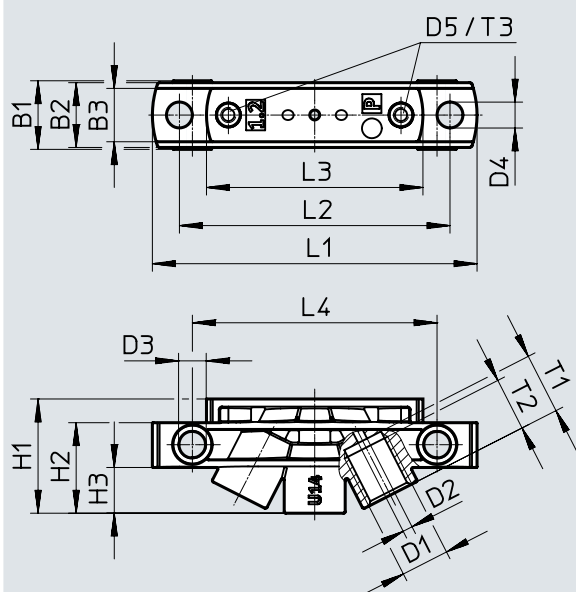
| Type | B1 | H1 | H2 | L1 | L2 | L3 ± 0.1 | L4 ± 0.1 |
|------|----|----|-----|------|------|-------------|-------------|
| VYKA | 7 | 30 | 3.8 | 28.4 | 17.8 | 22.7 | 7 |

Data sheet

Dimensions

Download CAD data → www.festo.com

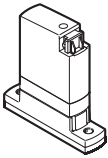
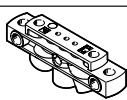
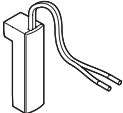
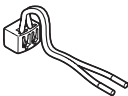
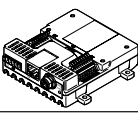

Manifold rail





| Type | B1 | B2 | B3 | D1 | D2 | D3 | D4 | D5 |
|---------------------|----|-----|----|------------|-----|-----|-----|----|
| VABS-K1-7B-12-U14-P | 9 | 8.5 | 7 | UNF 1/4-28 | 1.3 | 3.6 | 3.4 | M2 |
| VABS-K1-7B-12-M5-P | | | | M5 | | | | |

| Type | H1 | H2 | H3 | L1 | L2 | L3 | L4 | T1 | T2 | T3 |
|---------------------|----|------|----|------|------|------|------|----|----|----|
| VABS-K1-7B-12-U14-P | 15 | 11.9 | 6 | 42.6 | 35.5 | 28.4 | 32.1 | 8 | 7 | 5 |
| VABS-K1-7B-12-M5-P | | | | | | | | | | |

Accessories

| Ordering data | | Description | | Part no. | Type |
|--|--|-------------------------------------|---------|----------------------------|------|
| Solenoid valve | | | | | |
|  | 2/2-way valve, normally closed | Diaphragm and sealing material FFPM | 8114566 | VYKA-F7-M22C-12-D2-PF-5YQ7 | |
| | | Diaphragm and sealing material FPM | 8114567 | VYKA-F7-M22C-12-D2-PV-5YQ7 | |
| | 2/2-way valve, normally open | Diaphragm and sealing material FFPM | 8114568 | VYKA-F7-M22U-12-D2-PF-5YQ7 | |
| | | Diaphragm and sealing material FPM | 8114569 | VYKA-F7-M22U-12-D2-PV-5YQ7 | |
| | 3/2-way valve, normally closed or open | Diaphragm and sealing material FFPM | 8114564 | VYKA-F7-M32-12-D2-PF-5YQ7 | |
| | | Diaphragm and sealing material FPM | 8114565 | VYKA-F7-M32-12-D2-PV-5YQ7 | |
| Sub-base | | | | | |
|  | Female thread M5 | Nominal width 1.2 mm | 8047064 | VABS-K1-7B-12-M5-P | |
| | Female thread 1/4-28 UNF | Nominal width 1.2 mm | 8047063 | VABS-K1-7B-12-U14-P | |
| E-box | | | | | |
|  | Straight socket, plug pattern Q7, with holding current reduction | | 8115100 | VAVE-K1-7-5YL1-LR | |
| Connecting cable | | | | | |
|  | Straight socket, plug pattern Q7 | Cable length 0.1 m | 8115892 | NEBV-Q7G2-PD-0.1-N-LE2 | |
| | | Cable length 0.5 m | 8115099 | NEBV-Q7G2-PD-0.5-N-LE2 | |
| Valve control module | | | | | |
|  | For up to 8 solenoid valves | | 8088772 | VAEM-V-S8EPRS2 | |
| Push-in fitting | | | | | |
|  | Male thread M5 | For tubing O.D. 4 mm | 8085657 | NPQR-DK-M5-Q4 | |
| | | For tubing O.D. 6 mm | 8085659 | NPQR-DK-M5-Q6 | |

| Ordering data | | Description | | Part no. | Type | PU ¹⁾ |
|--|------------------------|------------------------|----------------------|------------------------|------------------------------|------------------|
| Fitting | | | | | | |
|  | Male thread 1/4-28 UNF | For tubing I.D. 1.2 mm | 8104288 | NLFA-D-U14-B1.2-PP-P10 | 10 | |
| | | For tubing O.D. 1.6 mm | 8104285 | NLFA-D-U14-K1.6-PP-P10 | 10 | |
| | | For tubing I.D. 2.1 mm | 8104289 | NLFA-D-U14-B2.1-PP-P10 | 10 | |
| | | For tubing O.D. 3.0 mm | 8104286 | NLFA-D-U14-K3-PP-P10 | 10 | |
| | | For tubing O.D. 3.2 mm | 8104287 | NLFA-D-U14-K3.2-PP-P10 | 10 | |
| Dosing nozzles | | | | | | |
|  | Dosing needle set | Dosing needle 30 mm | Nominal width 0.3 mm | 8104295 | VAVN-N-A1.6-03-30-F-V-V1-P10 | 10 |
| | | | | 8104294 | VAVN-N-A1.6-03-30-V-V1-P10 | 10 |
| | | Dosing needle 60 mm | | 8104298 | VAVN-N-A1.6-03-60-F-V-V1-P10 | 10 |
| | | | | 8104297 | VAVN-N-A1.6-03-60-V-V1-P10 | 10 |
| | | Dosing needle 30 mm | Nominal width 0.6 mm | 8104290 | VAVN-N-A1.6-06-30-V1-P10 | 10 |
| | | | | 8104296 | VAVN-N-A1.6-06-30-V-V1-P10 | 10 |
| | | Dosing needle 60 mm | | 8104292 | VAVN-N-A1.6-06-60-V1-P10 | 10 |
| | | | | 8104299 | VAVN-N-A1.6-06-60-V-V1-P10 | 10 |
| | | Dosing needle 30 mm | Nominal width 1.2 mm | 8104291 | VAVN-N-A1.6-12-30-V1-P10 | 10 |
| | | | | 8104293 | VAVN-N-A1.6-12-60-V1-P10 | 10 |

1) Packaging unit

Festo - Your Partner in Automation



1 Festo Inc.
5300 Explorer Drive
Mississauga, ON L4W 5G4
Canada

Festo Customer Interaction Center
Tel: 1 877 463 3786
Fax: 1 877 393 3786
Email: customer.service.ca@festo.com



2 Festo Pneumatic
Av. Ceylán 3,
Col. Tequesquináhuac
54020 Tlalnepantla,
Estado de México

Multinational Contact Center
01 800 337 8669
ventas.mexico@festo.com



3 Festo Corporation
1377 Motor Parkway
Suite 310
Islandia, NY 11749

Festo Customer Interaction Center
1 800 993 3786
1 800 963 3786
customer.service.us@festo.com



4 Regional Service Center
7777 Columbia Road
Mason, OH 45040

Connect with us

www.festo.com/socialmedia



www.festo.com

Subject to change