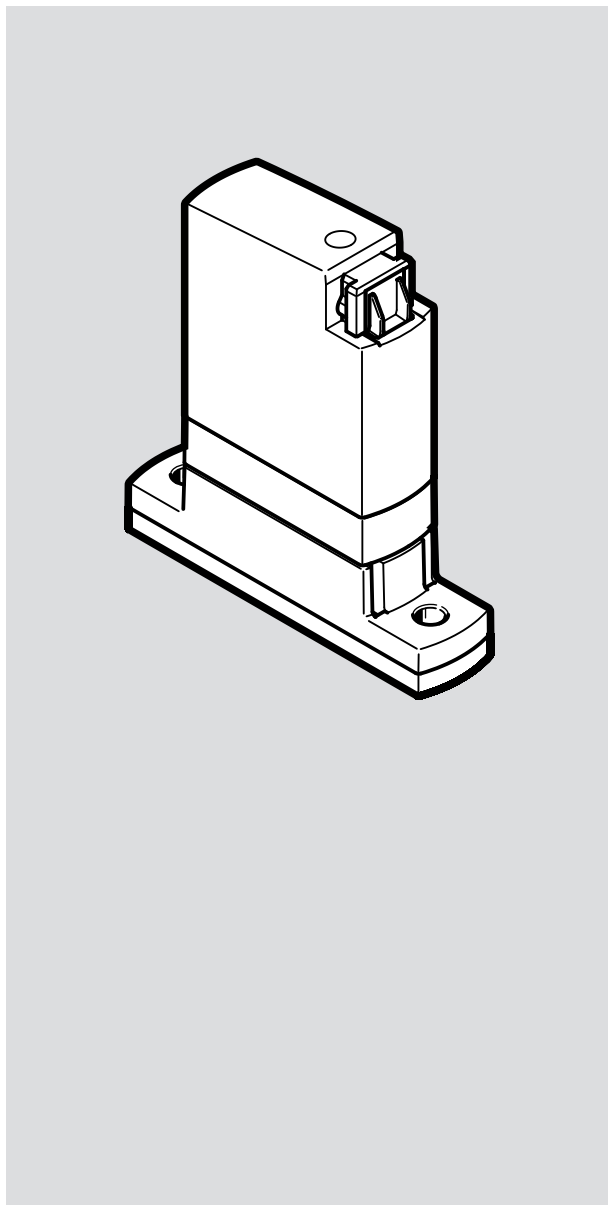


**VYKA**  
Media separated solenoid valve



**FESTO**

Operating instructions



8168416

8168416  
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[8168418]

Translation of the original instructions

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# 1 Applicable documents

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All available documents for the product → [www.festo.com/sp](http://www.festo.com/sp).

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## 2 Safety

### 2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications.
- Only use the product if it is in perfect technical condition.
- Do not subject the product to mechanical stress.
- Before carrying out any work on the product: switch off the supply of medium and secure it against being switched back on.
- Always hold the electrical sub-base and the connecting cable by the housing. Do not pull on the cable.
- Comply with the handling specifications for electrostatically sensitive devices.
- The product can become hot during continuous operation. Take suitable protective measures when using and handling the product.
- Do not operate the product in the vicinity of highly flammable liquids and materials.
- The product may generate high frequency interference, which may require interference suppression measures in residential areas.
- Do not leave the approved pressure of medium. Potential pressure peaks in the system must also be taken into account.
- Store the product in a cool, dry environment protected from UV and corrosion. Keep storage times short.

#### Media

- Only use media in accordance with the specifications → 11 Technical data.
- Media may escape in the event of leakage. Take suitable protective measures for use and handling of the product.
- When using crystallising media, plan appropriate rinsing routines for the product.
- Use only media that will not cause dangerous reactions if mixed.
- Use only media to which the materials used for the product are resistant. Materials in contact with the medium → 11 Technical data.
- For evaluation of the media resistance → 1 Applicable documents.

#### Return to Festo

Hazardous substances can endanger the health and safety of personnel and cause damage to the environment. To prevent hazards, the product should only be returned upon explicit request by Festo.

- Consult your regional Festo contact.
- Complete the declaration of contamination and attach it to the outside of the packaging.
- Comply with all legal requirements for the handling of hazardous substances and the transport of dangerous goods.

## 2.2 Intended use

The solenoid valve controls gaseous and liquid media and is intended for installation in laboratory devices. The chemical resistance of the materials in contact with the media in the solenoid valve must be checked for each application.

## 2.3 Foreseeable misuse

- The solenoid valve is not a food materials and articles item as defined by EC 1935/2004.
- Do not operate the solenoid valve without holding current reduction.

## 3 Additional information

- Contact the regional Festo contact if you have technical problems → [www.festo.com](http://www.festo.com).
- Accessories → [www.festo.com/catalogue](http://www.festo.com/catalogue).

## 4 Product overview

### 4.1 Structure

The solenoid valve has a modular structure. Some modules are available as accessories.

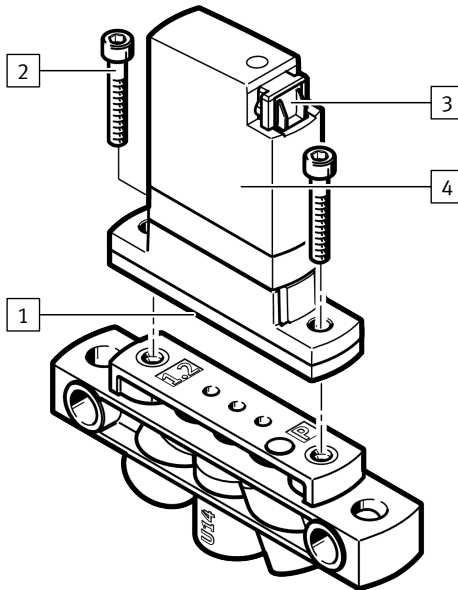


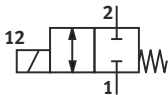
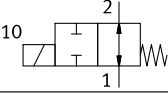
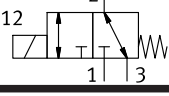
Fig. 1: Structure VYKA

- |   |   |
|---|---|
| <b>1</b> Seal   | <b>3</b> Connection contact for electrical sub-base or connecting cable |
| <b>2</b> Screws for attachment to the sub-base, included in the scope of delivery | <b>4</b> Solenoid valve   |

## 4.2 Function

The solenoid valve VYKA is a directly actuated directional control valve with solenoid coil. Depending on the version, the solenoid valve is open or closed in a de-energised state.

When the solenoid coil is energised, the LED on the electrical sub-base will be on.

Solenoid valve	Circuit symbol	Product variant
VYKA-...-M22C-...		2/2-way valve, normally closed
VYKA-...-M22U-...		2/2-way valve, normally open
VYKA-...-M32-...		3/2-way valve, normally closed or open

Tab. 1: Circuit symbols

## 5 Assembly

The valve can be mounted individually or as a block assembly. When mounted individually, the gap between two adjacent valves > is 7.5 mm.

### Requirements

- The piping system is unpressurised and medium is not flowing through it.
- The lines are clean.
- The pipe ends are mounted.
- The dirt filters are installed in the medium line upstream from the solenoid valve. Maximum mesh size: 5 µm.
- The power supply is switched off.

### Mechanical system

- Avoid mechanical loads.
- Use only the included M2 screws to mount the solenoid valve. Tightening torque: 0.12 Nm ± 15%.

## 6 Installation

### 6.1 Fluid installation

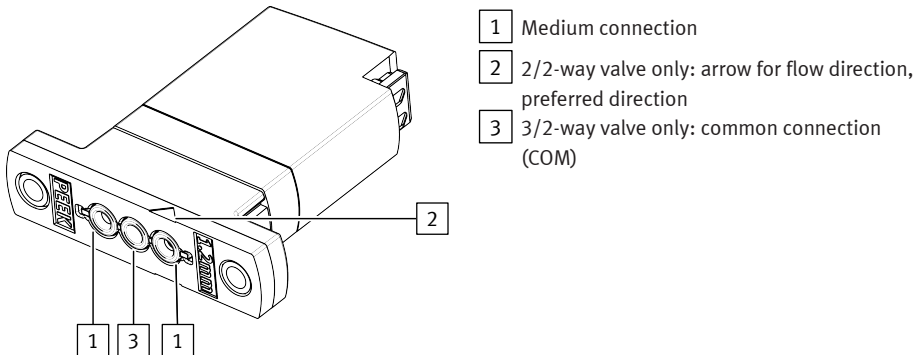


Fig. 2: VYKA connections

### 6.2 Installation, electrical

#### **⚠ WARNING**

##### **Risk of Injury due to Electric Shock.**

- For the electric power supply, use only PELV circuits that ensure a reliable electric disconnection from the mains network.
- Observe IEC 60204-1/EN 60204-1.
- The unit must be powered by a power source that fulfils the requirements of an energy-limited circuit in accordance with IEC 61010-1/EN 61010-1.

– Note polarity (red cable = +).

##### **Electrical sub-base VAVE**

The holding current reduction is integrated in product variants with an electrical sub-base.

1. Slide the electrical sub-base onto the solenoid valve.
2. Observe the maximum cable length for extensions: 10 m.

##### **Connecting cable NEBV**

The customer must provide a separate constant current source with holding current reduction for product variants with a single connecting cable.

- Slide the connecting cable onto the solenoid valve.

## Removal

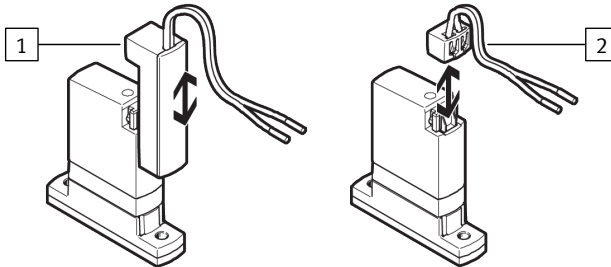


Fig. 3: Installation, electrical

1 Electrical sub-base VAVE

2 Connecting cable NEBV

## 7 Commissioning

### Requirements

- The solenoid valve is fully mounted and connected.

### Commissioning the solenoid valve

1. Supply the medium.
2. Switch on the power supply.

## 8 Maintenance

- Inspect the solenoid valve regularly from the outside for leakage and function.

## 9 Malfunctions

Malfunction	Cause	Remedy
NC valve does not close or NO valve does not open fully.	Flow direction is incorrect.	– Correct the fluid connections.
	Nominal voltage is already present.	– Check electrical connection (polarity: red cable = +).
NC valve does not fully open or NO valve does not close.	Medium pressure too high.	– Lower medium pressure.
	Nominal voltage is interrupted or not sufficient.	– Check power supply.
Medium leaks out.	Connection between valve and sub-base is not tight.	– Check integrated seal. – Check the surface of the connection plate.
	Diaphragm not tight.	– Replace valve.

Tab. 2: Fault clearance

## 10 Removal

1. Switch off the power supply.
2. Depressurise the medium line and the solenoid valve and allow them to cool.



## Technical data

3. Drain the medium line and the solenoid valve completely. Collect the discharged media in a suitable container.
4. Demount the solenoid valve. Do not pull on the cable.

# 11 Technical data

## 11.1 Technical data, general

VYKA		
Design	Rocker valve with diaphragm seal	
Installation location	For indoor use only	
Mounting position	Any	
Flow direction	Reversible with restrictions → Tab. 4 Pressure range at the media connection	
Medium	Liquid media, gaseous media	
Temperature of medium		
VYKA-F7-...-PV	[°C]	0 ... 50
VYKA-F7-...-PE	[°C]	0 ... 50
VYKA-F7-...-PF	[°C]	15 ... 50
Materials in contact with media		
VYKA-F7-...-PV	PEEK, FPM	
VYKA-F7-...-PE	PEEK, EPDM	
VYKA-F7-...-PF	PEEK, FFPM	
Ambient temperature		
VYKA-F7-...-PV	[°C]	0 ... 50
VYKA-F7-...-PE	[°C]	0 ... 50
VYKA-F7-...-PF	[°C]	15 ... 50
Max. rel. humidity	≤ 30 °C: 80% > 30 °C: 50%	
Degree of protection in accordance with EN 60529	IP40	
Min. pitch	[mm]	7.5

Tab. 3: Technical data, general

Type code	Part number	Pressure range	
Port		COM	NC, NO
VYKA-F7-M32-...	8170084 8170085	-0.025 ... 0.2 [MPa]	-0.05 ... 0.1 [MPa]
VYKA-F7-M32-...-D2-...	8114564 8114565	0 ... 0.2 [MPa]	0 ... 0.1 [MPa]
Port		In	Out
VYKA-F7-M22C-... VYKA-F7-M22U-...	8170087 8170088 8170090 8170091	-0.025 ... 0.2 [MPa]	-0.05 ... 0.1 [MPa]
VYKA-F7-M22C-...-D2-... VYKA-F7-M22U-...-D2-...	8114566 8114567 8114568 8114569	0 ... 0.2 [MPa]	0 ... 0.1 [MPa]

Tab. 4: Pressure range at the media connection

## 11.2 Technical data, electrical

VYKA		Starting phase	Holding phase
Nominal power	[W]	2.2	0.06
Max. energy consumption of solenoid valve without electrical sub-base	[W]	2.8	0.08
Max. energy consumption of solenoid valve with electrical sub-base	[W]	3.5	0.3
Duty cycle	[%]	100	
With electrical sub-base VAVE			
Power supply	[V DC]	12... 26 ± 10 %	
Nominal voltage	[V DC]	24	
Contamination level		2	
With connecting cable NEBV when using an individual constant current source			
Inrush current	[mA]	300 for 60 ms	
Holding current	[mA]	50	
Permissible current fluctuations	[%]	± 2	

Tab. 5: Technical data, electrical

### 11.3 Technical data, maximum switching frequency

Ambient temperature	Maximum switching frequency at 100% duty cycle [Hz]	
	Individual mounting	Block mounting
< 20 °C	6	2
20 ... 30 °C	5	1.5
30 ... 40 °C	4	1
40 ... 50 °C	3	0.5

Tab. 6: Technical data, maximum switching frequency

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