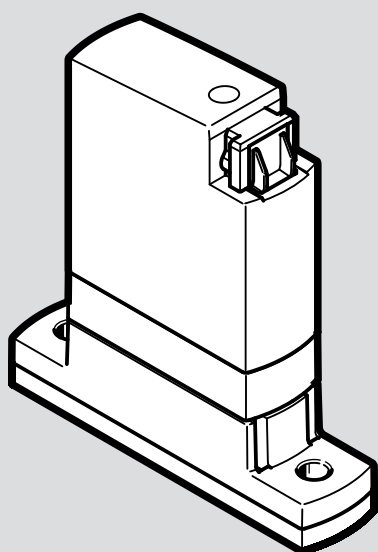


VYKA
Media separated solenoid valve

FESTO

Operating instructions



8250217

8250217
2025-12c
[8250219]

Original instructions

FPM is a registered trademark of its respective trademark holder in certain countries.

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1 Applicable documents



All available documents for the product → www.festo.com/sp.

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 loads.
- 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 persons and cause damage to the environment. To prevent hazards, the product should only be returned if explicitly requested 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. The product is intended for mounting in laboratory devices.

- The chemical resistance of the materials in contact with the media in the solenoid valve must be checked for every application.
- Do not operate the solenoid valve without holding current reduction.
- Do not operate the solenoid valve without a sub-base. Observe the product labelling on the sub-base.

2.3 Foreseeable misuse

- The solenoid valve is not a food materials and articles item as defined by EC 1935/2004.
- Do not use the solenoid valve in medical devices that are intended to maintain or monitor human life.

3 Additional information

- Contact the regional Festo contact if you have technical problems
→ www.festo.com.
- Accessories → www.festo.com/catalogue.

4 Product overview

4.1 Design

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

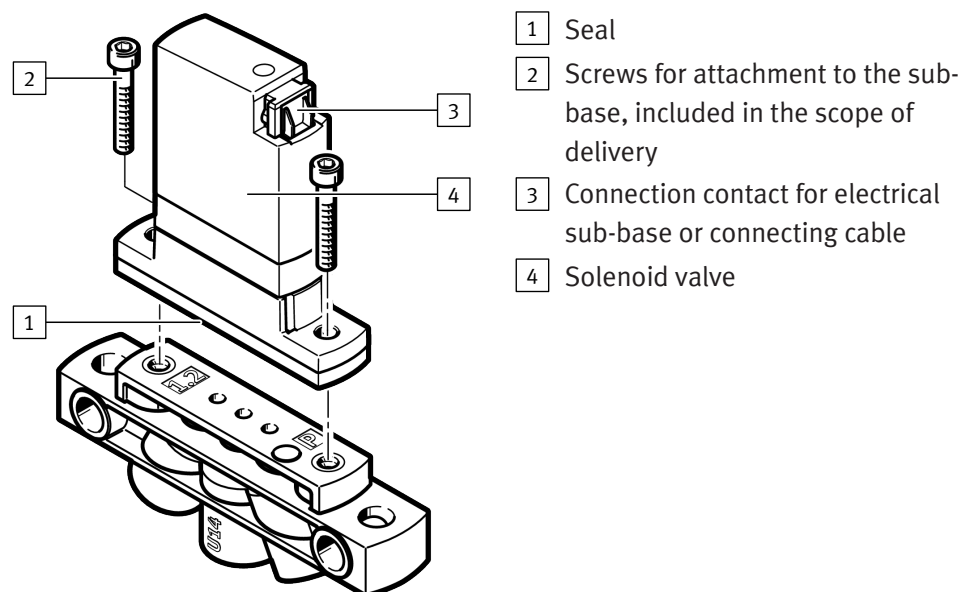
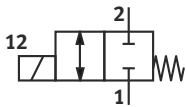
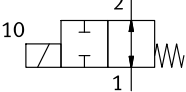
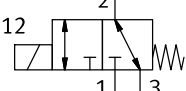


Fig. 1: Product design VYKA

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 Mounting

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

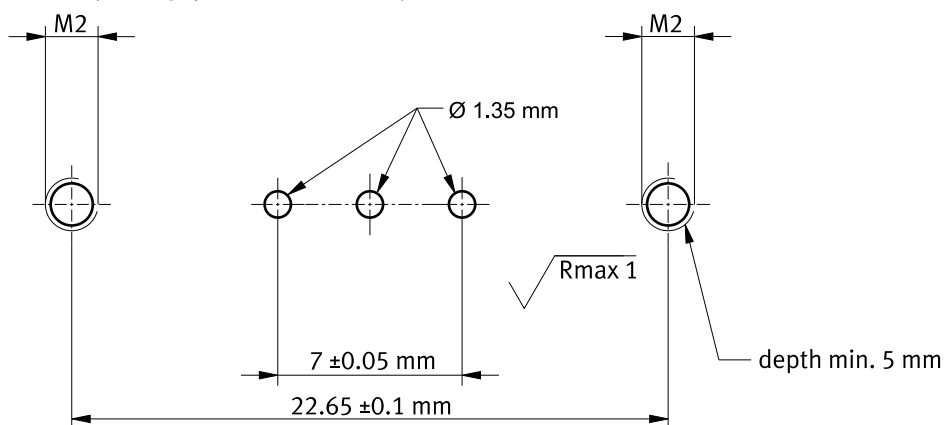


Fig. 2: Hole pattern

The middle drilled hole is only required for VYKA-...-M32.

Requirements

- The piping system is unpressurised and does not contain medium.
- The pipes 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 $\pm$ 15%.

6 Installation

6.1 Fluid installation

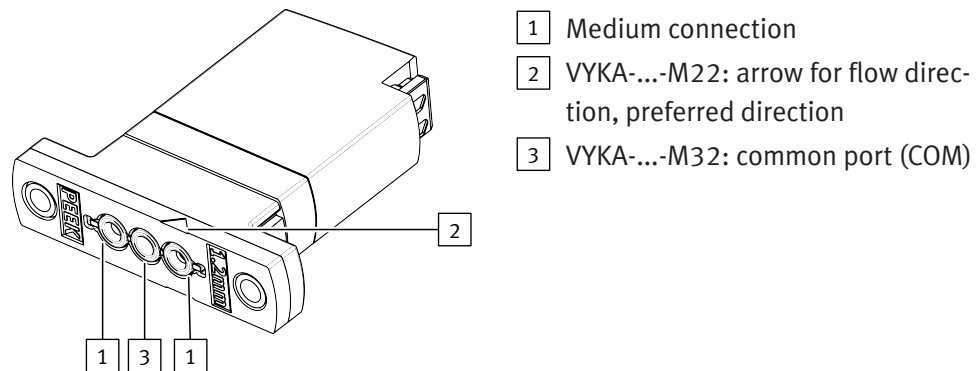


Fig. 3: VYKA connections

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

Product variants with a single connecting cable require a separate constant current source with holding current reduction.

1. Slide the connecting cable onto the solenoid valve.
2. Observe the maximum bending radius: ≥ 11 mm for fixed installation, ≥ 16.5 mm for dynamic installation.

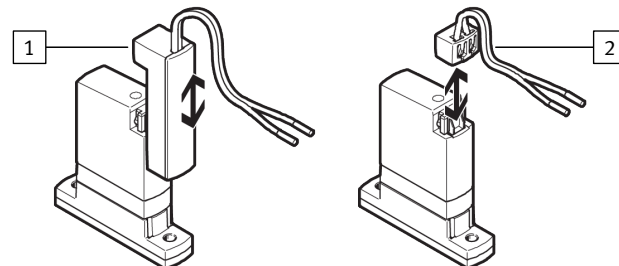


Fig. 4: Electrical installation

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. Feed in 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.	Pressure of medium too high.	– Reduce pressure of medium.
	Nominal voltage is interrupted or not sufficient.	– Check power supply.
Medium is leaking.	Connection between valve and sub-base is not tight.	– Check integrated seal. – Check the surface of the sub-base.
	Diaphragm not tight.	– Replace the valve.

Tab. 2: Fault clearance

10 Disassembly

1. Switch off the power supply.
2. Depressurise the medium line and the solenoid valve and allow them to cool.
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 site		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 the 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		
VYKA-F7-...-PF	[°C]	15 ... 50
Environment:		< 80 %rel. humidity, non-condensing
Degree of protection in accordance with EN 60529		IP40
Min. grid dimension	[mm]	7.5

Tab. 3: Technical data, general

Type code	Pressure range	
Port	COM	NC, NO
VYKA-F7-M32-...-PV VYKA-F7-M32-...-PE	−0.025 ... 0.2 [MPa]	−0.05 ... 0.1 [MPa]
VYKA-F7-M32-...-PF	−0.025 ... 0.2 [MPa]	−0.05 ... 0.05 [MPa]
VYKA-F7-M32-...-D2-...	0 ... 0.2 [MPa]	0 ... 0.1 [MPa]
Port	In	Out
VYKA-F7-M22C-...-PE VYKA-F7-M22C-...-PV VYKA-F7-M22U-...-PE VYKA-F7-M22U-...-PV	−0.025 ... 0.2 [MPa]	−0.05 ... 0.1 [MPa]
VYKA-F7-M22C-...-PF VYKA-F7-M22U-...-PF	−0.025 ... 0.2 [MPa]	−0.05 ... 0.05 [MPa]
VYKA-F7-M22C-...-D2-... VYKA-F7-M22U-...-D2-...	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	
Pollution degree	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

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

Tab. 6: Technical data, maximum switching frequency

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