Media separated solenoid valve VYKA

FESTO

Characteristics

At a glance

Link vyka

Special characteristics:

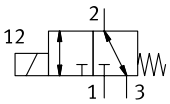
- Very easy to clean thanks to media separation
- Materials in contact with the media made of FDA-listed materials
- Developed according to ISO 13485
- High-quality materials, therefore also suitable for aggressive media
- High flow rate with small size
- High repetition accuracy, switching frequency and precision, therefore also suitable for extremely small volumes and dispensing tasks
- Low power consumption due to holding current reduction
- Very flexible in use thanks to 3/2-way and 2/2-way variants as well as 12 ... 26 V DC actuation

Function:

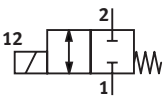
- The valve VYKA is a directly actuated valve with solenoid coil. When de-energised, the valve automatically returns to its normal position.
- The media separated solenoid valve VYKA is intended for mounting in laboratory devices. The valve is used to control gaseous and liquid media in line with its technical data.

Valve function

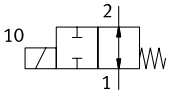
[M32] 3/2-way valve, normally closed or open



[M22C] 2/2-way valve, normally closed

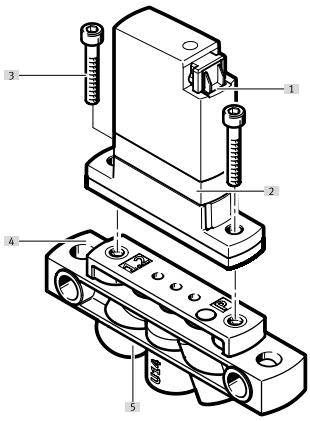


[M22U] 2/2-way valve, normally open



Series

[VYKA] Solenoid valve VYKA



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

Type code

001	Series	
VYKA	Solenoid valve VYKA	

002	Directional control valve type	
F	Flanged valve	

003	Size	
7	Size 7	

004	Valve function	
M22C	2/2-way valve, normally closed	
M22U	2/2-way valve, normally open	
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	
E	EPDM	
F	FFPM	
V	FPM	

009	Nominal operating voltage	
5Y	12 V DC to 26 V DC	

010	Electrical connection	
Q7	Plug socket, connection pattern Q	

Datasheet

General technical data

Valve function	2/2-way, closed, monostable			2/2 open, monostable			3/2-way, monostable, open/closed		
Material membrane	EPDM	FFPM	FPM	EPDM	FFPM	FPM	EPDM	FFPM	FPM
Design	Rocker valve with diaphragm seal								
Type of reset	Mechanical spring								
Nominal size	1.2 mm								
Size	7								
Grid dimension	7.5 mm								
Fluid connection	Flange								
Internal volume	18 µl fluid chamber valve, 24 µl valve with fluid connections						16 µl fluid chamber valve, 26 µl valve with fluid connections		

Operating and environmental conditions

Valve function	2/2-way, closed, monostable			2/2 open, monostable			3/2-way, monostable, open/closed		
Material membrane	EPDM	FFPM	FPM	EPDM	FFPM	FPM	EPDM	FFPM	FPM
Standard nominal flow rate (standardised to DIN 1343)[1]	10 l/min						11 l/min		
Water flow rate at max. operating pressure	0.027 m³/h 0.45 l/min			0.024 m³/h 0.4 l/min			0.03 m³/h 0.5 l/min		
Flow rate Kv	0.018 m³/h						0.021 m³/h		
Medium	Liquid media Gaseous media								
Pressure difference	2								
Ambient temperature	0 ... 50°C	15 ... 50°C	0 ... 50°C		15 ... 50°C	0 ... 50°C		15 ... 50°C	0 ... 50°C
Media temperature for fluids	0 ... 50°C	15 ... 50°C	0 ... 50°C		15 ... 50°C	0 ... 50°C		15 ... 50°C	0 ... 50°C
Medium temperature gaseous media	0 ... 50°C	15 ... 50°C	0 ... 50°C		15 ... 50°C	0 ... 50°C		15 ... 50°C	0 ... 50°C
Corrosion resistance class CRC [2]	0 - No corrosion stress								
Medium pressure	-0.05 ... 0.2 MPa								
Medium pressure	-0.5 ... 2 bar								
Medium pressure	-7.25 ... 29 psi								
Note on the medium pressure	IN: -0.25 – 2 bar / -0.025 – 0.2 MPa / -3.625 – 29 psi OUT: -0.5 - 1 bar / -0.05 - 0.1 MPa / -7.25 - 14.5 psi	IN: -0.25 – 2 bar / -0.025 – 0.2 MPa / -3.625 – 29 psi OUT: -0.5 - 0.5 bar / -0.05 - 0.05 MPa / -7.25 - 7.25 psi	IN: -0.25 – 2 bar / -0.025 – 0.2 MPa / -3.625 – 29 psi OUT: -0.5 - 1 bar / -0.05 - 0.1 MPa / -7.25 - 14.5 psi	IN: -0.25 – 2 bar / -0.025 – 0.2 MPa / -3.625 – 29 psi OUT: -0.5 - 0.5 bar / -0.05 - 0.05 MPa / -7.25 - 7.25 psi	IN: -0.25 – 2 bar / -0.025 – 0.2 MPa / -3.625 – 29 psi OUT: -0.5 - 1 bar / -0.05 - 0.1 MPa / -7.25 - 14.5 psi	COM: -0.25 – 2 bar / -0.025 – 0.2 MPa / -3.625 – 29 psi NC: -0.5 – 1 bar / -0.05 – 0.1 MPa / -7.25 – 14.5 psi NO: -0.5 - 1 bar / -0.05 - 0.1 MPa / -7.25 - 14.5 psi	COM: -0.25 – 2 bar / -0.025 – 0.2 MPa / -3.625 – 29 psi NC: -0.5 - 0.5 bar / -0.05 - 0.05 MPa / -7.25 - 7.25 psi NO: -0.5 - 0.5 bar / -0.05 - 0.05 MPa / -7.25 - 7.25 psi	COM: -0.25 – 2 bar / -0.025 – 0.2 MPa / -3.625 – 29 psi NC: -0.5 – 1 bar / -0.05 – 0.1 MPa / -7.25 – 14.5 psi NO: -0.5 - 1 bar / -0.05 - 0.1 MPa / -7.25 - 14.5 psi
Burst pressure	2.3 MPa								
Burst pressure	23 bar								
Burst pressure	333.5 psi								

1) The values for the standard nominal flow rate (standardised according to DIN 1343) apply only to gaseous media.

2) More information at www.festo.com/x/topic/kbk

Datasheet

Electrical data

Valve function	2/2-way, closed, monostable			2/2 open, monostable			3/2-way, monostable, open/closed		
Diaphragm and sealing material	EPDM	FFPM	FPM	EPDM	FFPM	FPM	EPDM	FFPM	FPM
Operational voltage range DC	12 ... 26 V								
Insulation material class	B								
Duty cycle	100% in conjunction with holding current reduction Observe the notes on operating the solenoid valves.								
Permissible voltage fluctuations	+/- 10%								
Characteristic coil data	12 - 26 V DC: low-current phase 0.06 W, high-current phase 2.2 W								
Switching time on gaseous media	5 ms	9 ms	5 ms	–			5 ms	9 ms	5 ms
Switching time off gaseous media	–			5 ms	9 ms	5 ms		9 ms	5 ms
Switch-on time for fluids	5 ms	9 ms	5 ms	–			5 ms	9 ms	5 ms
Switch-off time for fluids	–			5 ms	9 ms	5 ms		9 ms	5 ms
Note on switching time[1)]	Switching time depends on medium, temperature, medium pressure and individual operating conditions	Switching time depends on medium, temperature, medium pressure and individual operating conditions, The switching behaviour of the FFPM can be slower at temperatures below room temperature	Switching time depends on medium, temperature, medium pressure and individual operating conditions	Switching time depends on medium, temperature, medium pressure and individual operating conditions, The switching behaviour of the FFPM can be slower at temperatures below room temperature		Switching time depends on medium, temperature, medium pressure and individual operating conditions	Switching time depends on medium, temperature, medium pressure and individual operating conditions, The switching behaviour of the FFPM can be slower at temperatures below room temperature		Switching time depends on medium, temperature, medium pressure and individual operating conditions

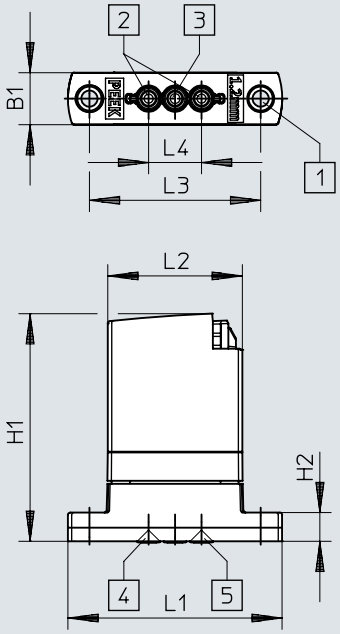
1) The switching time measurements are carried out at room temperature (23 °C ± 5 °C) and maximum operating pressure for the specified direction. The switching time specifies the value at which 10 % of the maximum operating pressure is reached at the valve outlet. The switching time and behaviour of the valve depend on the pressure and temperature conditions. FFKM variants in particular exhibit significantly slower switching behaviour at temperatures below room temperature. FFKM variants can also exhibit slow closing behaviour. This means that the flow rate does not stop suddenly after switching, but small quantities of medium can leave the valve outlet before it closes tightly.

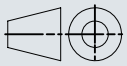
Materials

Material housing	PA-reinforced PEEK PPA reinforced
Note on materials	RoHS-compliant

Dimensions

Dimensions – Solenoid valve VYKA-... Download CAD data www.festo.com



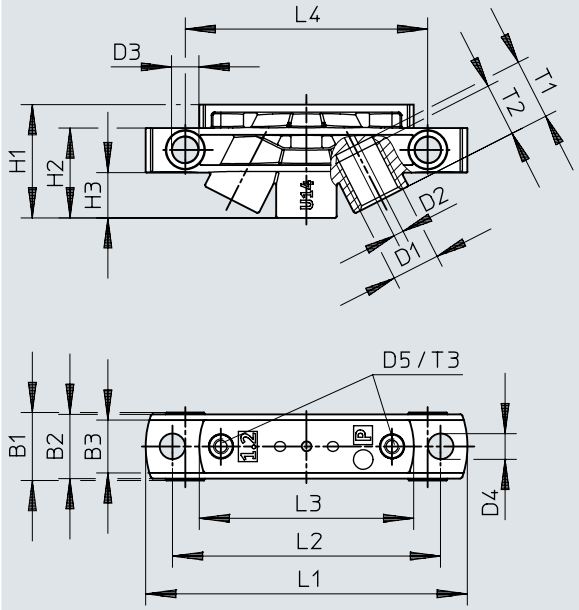


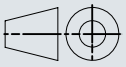
[1] Mounting holes, screws enclosed for M2 threaded hole
[2] Fluid connection
[3] COM port (only 3/2-way variants)
[4] Valve input only for VYKA-F7-M22U
[5] Valve input only for VYKA-F7-M22C

	B1	H1	H2	L1	L2	L3 ± 0,1	L4 ± 0,1
VYKA-...	7	30	3,8	28,4	17,8	22,7	7

Dimensions

Dimensions – Manifold rail VABS-K1-7B-12-... Download CAD data www.festo.com





	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				

	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										

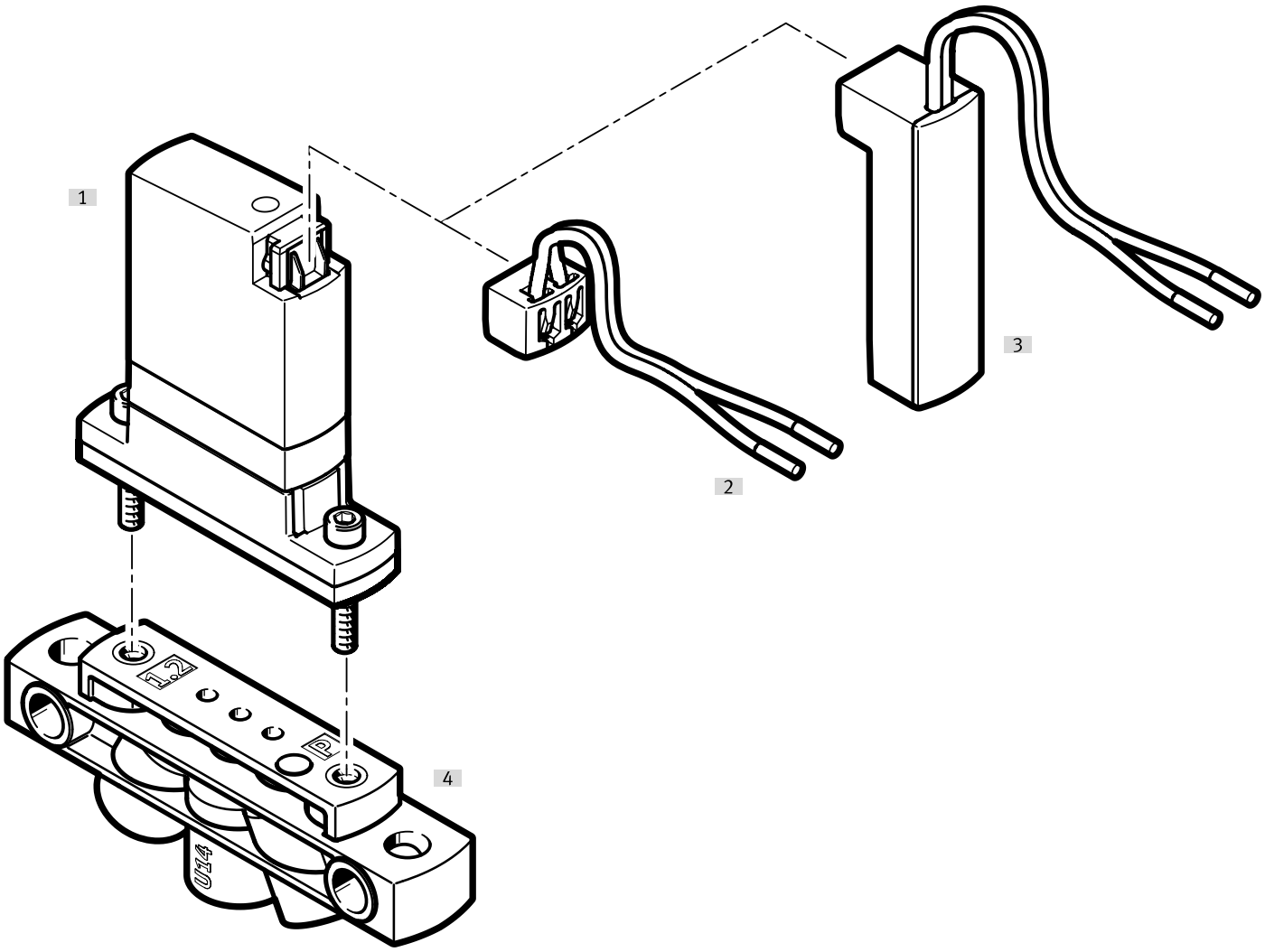
Ordering data

Ordering data

	Size	Valve function	Design	Water flow rate at max. operating pressure	Part no.	Type
	7	2/2-way, closed, monostable	Rocker valve with diaphragm seal	0.027 m³/h, 0.45 l/min	**8170086**	**VYKA-F7-M22C-12-PF-5YQ7**
					8170087	**VYKA-F7-M22C-12-PV-5YQ7**
					8170088	**VYKA-F7-M22C-12-PE-5YQ7**
		2/2 open, monostable		0.024 m³/h, 0.40 l/min	**8170089**	**VYKA-F7-M22U-12-PF-5YQ7**
					8170090	**VYKA-F7-M22U-12-PV-5YQ7**
					8170091	**VYKA-F7-M22U-12-PE-5YQ7**
		3/2-way, monostable, open/closed		0.03 m³/h, 0.5 l/min	**8170084**	**VYKA-F7-M32-12-PV-5YQ7**
					8170085	**VYKA-F7-M32-12-PE-5YQ7**
					8170083	**VYKA-F7-M32-12-PF-5YQ7**

Peripherals

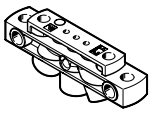
Peripherals overview



Accessories			→ Link
	Type/order code	Description	
[1]	Solenoid valve	VYKA	–
[2]	Connecting cable	NEBV	10
[3]	E-box	VAVE	10
[4]	Sub-base	VABS	10

Accessories

Sub-base

	Nominal size	Part no.	Type
	1.2 mm	**8047063**	**VABS-K1-7B-12-U14-P**
		8047064	**VABS-K1-7B-12-M5-P**

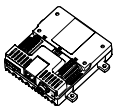
E-box

	Electrical connection	Part no.	Type
	2-pin, Twin wire, Open end	**8115100**	**VAVE-K1-7-5YL1-LR**

Connecting cable

	Cable length	Part no.	Type
	0.1 m	**8115892**	**NEBV-Q7G2-PD-0.1-N-LE2**
	0.5 m	**8115099**	**NEBV-Q7G2-PD-0.5-N-LE2**

Valve control module

	Max. number of outputs	Part no.	Type
	8	**8088772**	**VAEM-V-S8EPRS2**

Push-in fitting

	Pneumatic connection, port 1	Pneumatic connection, port 2	Part no.	Type
	Male thread M5	For tubing outside diameter of 4 mm	**8085657**	**NPQR-DK-M5-Q4**
		For tubing outside diameter of 6 mm	**8085659**	**NPQR-DK-M5-Q6**

Fitting

	Fluid connection	Fluid connection 2	Size of pack	Part no.	Type
	UNF1/4-28	For tubing O.D. 3 mm	10	**8104286**	**NLFA-D-U14-K3-PP-P10**
		For tubing I.D. 1.2 mm		**8104288**	**NLFA-D-U14-B1.2-PP-P10**
		For tubing I.D. 2.1 mm		**8104289**	**NLFA-D-U14-B2.1-PP-P10**
		For tubing O.D. 1.6 mm (1/16“)		**8104285**	**NLFA-D-U14-K1.6-PP-P10**
		For tubing O.D. 3.2 mm (1/8“)		**8104287**	**NLFA-D-U14-K3.2-PP-P10**

Dosing nozzles

	Length of dosing needle	Nominal width of dosing needle	Size of pack	Part no.	Type
	30 mm	0.3 mm	10	**8104295**	**VAVN-N-A1.6-03-30-F-V-V1-P10**
				8104294	**VAVN-N-A1.6-03-30-V-V1-P10**
		0.6 mm		**8104290**	**VAVN-N-A1.6-06-30-V1-P10**
				8104296	**VAVN-N-A1.6-06-30-V-V1-P10**
		1.2 mm		**8104291**	**VAVN-N-A1.6-12-30-V1-P10**
	60 mm	0.3 mm		**8104298**	**VAVN-N-A1.6-03-60-F-V-V1-P10**
				8104297	**VAVN-N-A1.6-03-60-V-V1-P10**
		0.6 mm		**8104292**	**VAVN-N-A1.6-06-60-V1-P10**
				8104299	**VAVN-N-A1.6-06-60-V-V1-P10**

Accessories

Dosing nozzles

	Length of dosing needle	Nominal width of dosing needle	Size of pack	Part no.	Type
	60 mm	1.2 mm	10	**8104293**	**VAVN-N-A1.6-12-60-V1-P10**