

Media separated solenoid valve VYKA

FESTO



Characteristics

At a glance

[Link](#) [vyka](#)

General information:

- Media-separated diaphragm valve for switching different gases and liquids
- Directly controlled solenoid valve with spring return for voltages of 12 ...26 V
- Large pressure/vacuum range and high reversible flow rate with small dimensions
- Extremely versatile thanks to 2/2-way and 3/2-way variants, ideal for controlling and mixing media
- Low power consumption thanks to actuation using holding current reduction
- Extensive range of accessories for electrical and fluidic connection options for customised integration of components
- Performance data can be customised on request, for example extending the pressure/vacuum range or individual interfaces

Special characteristics:

- High-quality FDA-listed materials are also suitable for aggressive biological and chemical media
- Reproducible switching behaviour for high repetition accuracy and therefore precision when dispensing liquids
- Low media consumption and easy to clean thanks to small internal volume
- Conforms to oxygen compatibility according to ISO15001 and the limit values for particle emissions and outgassing according to ISO18562
- Development and production according to ISO13485
- Production in cleanroom class 7 according to ISO14664

Function:

- The valve VYKA is a directly actuated valve with solenoid coil. When de-energised, the valve automatically returns to its normal position.

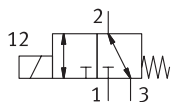
Additional documents



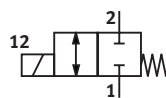
A description of the design of the interface by the customer and notes on integration can be found in the Download area for the media-separated valve VYKA.

Valve function

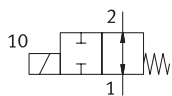
[M32] 3/2-way valve, normally closed or open



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



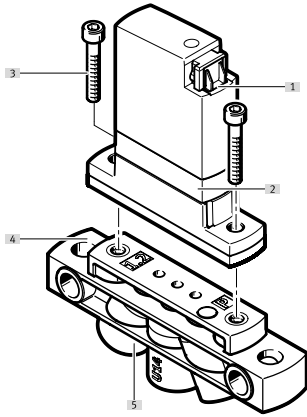
[M22U] 2/2-way valve, normally open



Characteristics

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]	
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, single solenoid, closed	2/2-way, single solenoid, open	3/2-way, monostable, open/closed
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
Sealing principle	Soft		
Flow direction	Reversible with restrictions		
Type of actuation	Electrical		
Type of piloting	Direct		
Manual override	None		
Type of mounting	Via through-hole for M2 screw		
Mounting position	Any		
Degree of protection	IP40		
Product weight	10.9 g		

Datasheet

Operating and environmental conditions									
Valve function	2/2-way, single solenoid, closed			2/2-way, single solenoid, open			3/2-way, monostable, open/closed		
Material membrane	EPDM	FFPM	Fluoro rubber	EPDM	FFPM	Fluoro rubber	EPDM	FFPM	Fluoro rubber
Medium	Liquid media Gaseous media								
Note on the medium	Observe resistance of materials that come into contact with the media Maximum particle size 5 µm								
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		
Flow rate Kv	0.3 l/min						0.35 l/min		
Note on flow rate Kv	For water as medium, Pressure difference 1 bar								
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
Storage temperature	-20 ... 70°C								
Corrosion resistance class CRC ²⁾	0 - No corrosion stress								
Medium pressure ³⁾	-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
Pressure difference	2 bar								
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 www.festo.com/x/topic/crc

3) Extended pressure and vacuum ranges are available on request.

Electrical data	
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
Electrical connection 1, connection type	Socket
Electrical connection 1, connector system	Plug pattern Q7
Electrical connection 1, number of connections/cores	2

Datasheet

Switching time

Valve function	2/2-way, single solenoid, closed			2/2-way, single solenoid, open			3/2-way, monostable, open/closed		
Material membrane	EPDM	FFPM	Fluoro rubber	EPDM	FFPM	Fluoro rubber	EPDM	FFPM	Fluoro rubber
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	–		
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	–		
Note on switching time	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	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

Switching frequency

Max. switching frequency ¹⁾	6 Hz
Note on switching frequency	Dependent on the ambient temperature and installation state, At 100% duty cycle depending on ambient temperature and installation condition. Higher switching frequencies possible with duty cycle < 100%.

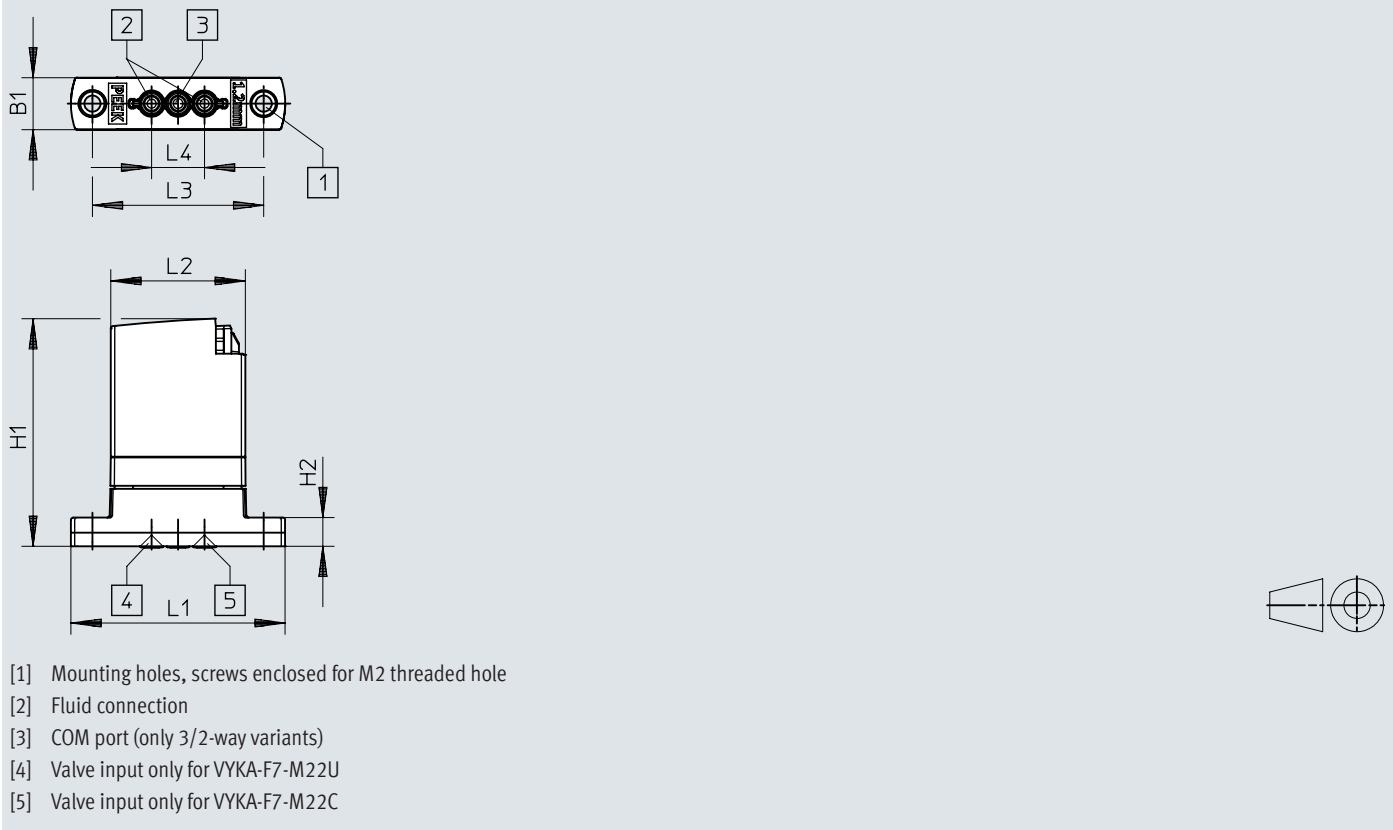
1) With 100% duty cycle

Materials

Material housing	Reinforced PA PEEK Reinforced PPA
Material membrane	EPDM, FFPM, Fluoro rubber
Material seals	EPDM, FFPM, Fluoro rubber
Note on materials	RoHS compliant

Dimensions

Dimensions – Solenoid valve VYKA-... [Download CAD data](#) www.festo.com

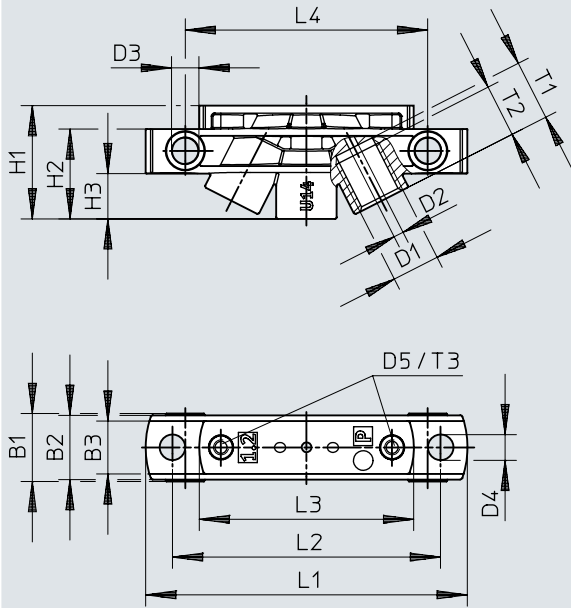


	B1	H1	H2	L1	L2	L3 ± 0,1	L4 ± 0,1
VYKA-...	7	30	3,8	28,4	17,8	22,7	7

Dimensions

Dimensions – Manifold rail VABS-K1-7B-12-...

Download CAD data www.festo.com

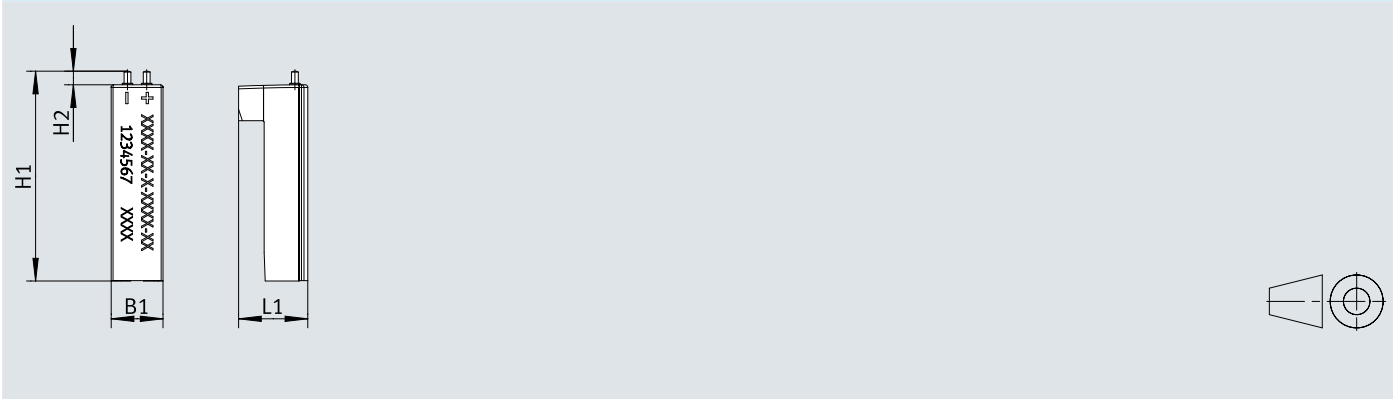


	B1	B2	B3	D1	D2	D3	D4	D5
VABS-K1-7B-12-U14-P	9	8,5	7	UNF 1/4-28	1,3	3,6	3,4	M2
VABS-K1-7B-12-M5-P				M5				

	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										

Dimensions

Dimensions – E-box VAVE-K1-7-5YW2... [Download CAD data](#) www.festo.com

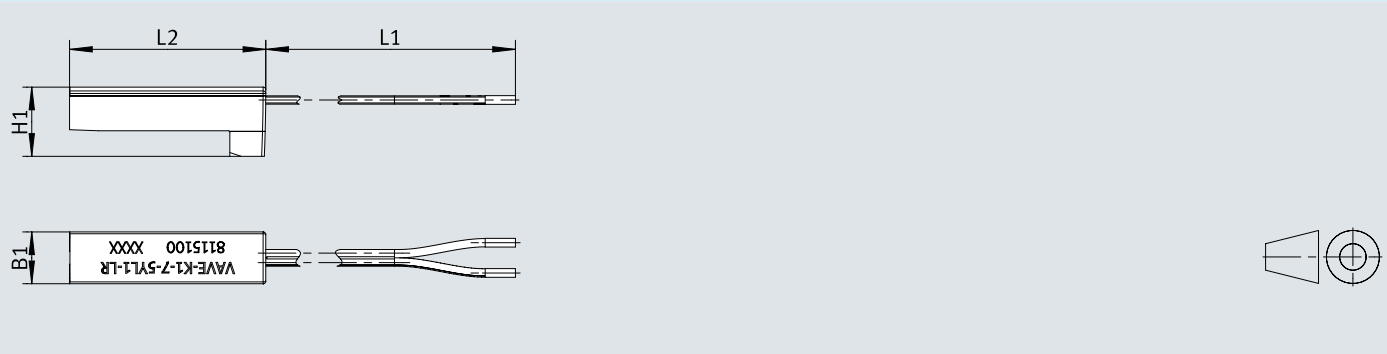


	B1	H1	H2 Ø	L1 Ø
VAVE-K1-7-5YW2	~6,8	~27,8	1,8	~9,2
VAVE-K1-7-5YW2-LR				

Dimensions

Dimensions – E-box VAVE-K1-7-5YL1-LR

Download CAD data www.festo.com



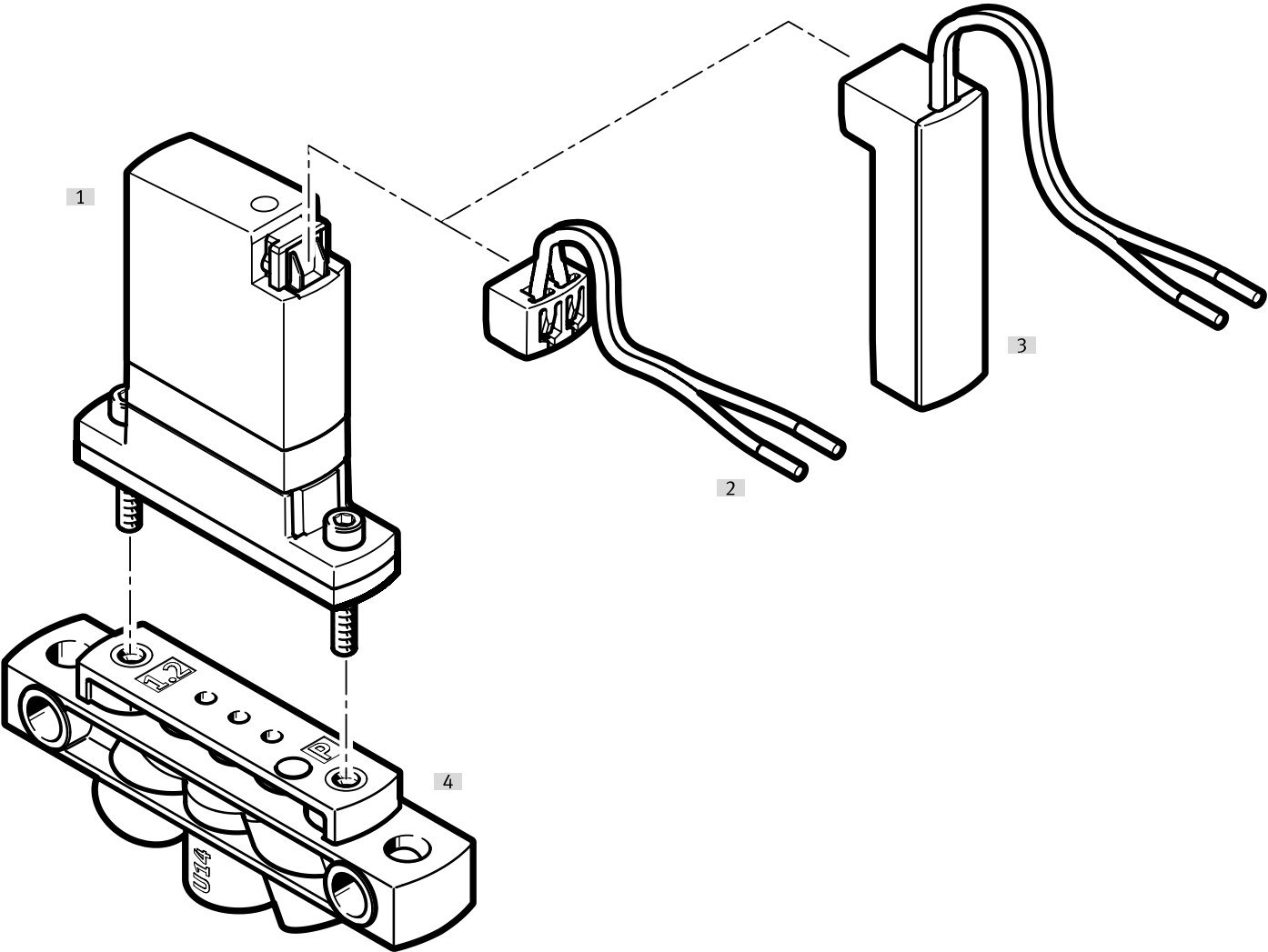
	B1	H1	L1 +40/0	L2
VAVE-K1-7-5YL1-LR	~6,9	~9,2	500	~30

Ordering data

Solenoid valve VYKA							
	Valve function	Nominal size	Standard nominal flow rate (standardised to DIN 1343)	Flow rate Kv	Water flow rate at max. operating pressure	Part no.	Type
	2/2-way, single solenoid, closed	1.2 mm	10 l/min	0.3 l/min	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-way, single solenoid, open				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	11 l/min	0.35 l/min	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	

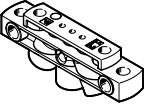
Peripherals

Peripherals overview



Accessories		→ Link
Type/order code	Description	
[1] Solenoid valve	VYKA	☞ vyka
[2] Connecting cable	NEBV	14
[3] E-box	VAVE-K1-7-5YW2... VAVE-K1-7-5YL1-LR	14
[4] Sub-base	VABS	14

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	

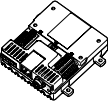
E-box				
	Electrical connection ¹⁾	Additional functions	Part no.	Type
	2-pin		8242326	VAVE-K1-7-5YW2
		Holding current reduction	8242327	VAVE-K1-7-5YW2-LR

¹⁾ This variant VAVE-K1-7-5YW2-... does not offer holding current reduction with an integrated protection circuit and only establishes an electrical connection to the VYKA valve.

E-box					
	Electrical connection ¹⁾	Cable length	Additional functions	Part no.	Type
	2-pin, Twin wire, Open end	0.5 m	Holding current reduction	8115100	VAVE-K1-7-5YL1-LR

¹⁾ This variant VAVE-K1-7-5YL1-LR offers holding current reduction with an integrated protection circuit.

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	Design	Part no.	Type
	Male thread M5	For tubing outside diameter of 4 mm	L-shape	8203302	NPQO-L-M5-Q4-P10
			Straight design	8203292	NPQO-D-M5-Q4-P10
				8085657	NPQR-DK-M5-Q4
		For tubing outside diameter of 6 mm	L-shape	8203303	NPQO-L-M5-Q6-P10
			Straight design	8203293	NPQO-D-M5-Q6-P10
				8085659	NPQR-DK-M5-Q6

Accessories

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
		0.6 mm		8104294	VAVN-N-A1.6-03-30-V-V1-P10
				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
				1.2 mm	8104293