

Media separated solenoid valves VYKB

FESTO



Key features

Special characteristics

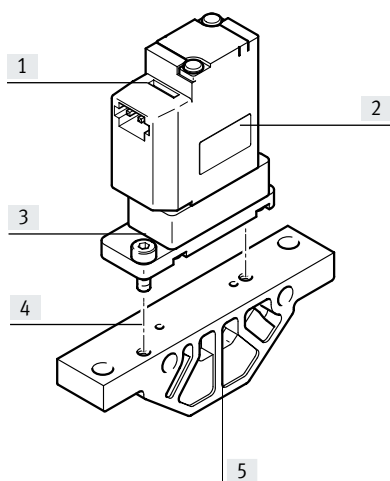
- Very easy to clean thanks to media separation
- Low media consumption thanks to small internal volume
- High-quality materials, therefore also suitable for aggressive media
- High flow rate with small size
- High repetition accuracy, switching frequency and precision, therefore also suitable for extremely small volumes and 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 ... 24 V DC actuation

Function

VYKB is a media separated solenoid valve. It is used to control gaseous and liquid media in laboratories.

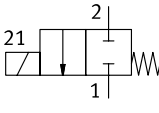
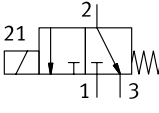
The valve VYKB is a directly actuated directional control valve with solenoid coil. In a de-energised state, the valve automatically returns to its normal position. Normally closed (2/2-way solenoid valve and 3/2-way solenoid valve) and normally open (3/2-way solenoid valve only) variants are available.

Configuration



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

Product range overview

Function	Circuit symbol	Type	Variants	Size	Flow rate Kv [m ³ /h]	Outlet direction of electrical components	→ Page/ Internet
Media separated solenoid valve	Rocker valve with diaphragm seal						
		VYKB-...-M22C	2/2-way solenoid valve: • Single solenoid • Normally closed • Operating voltage 12 ... 24 V DC	10 mm	0.034	• Straight • Angled	7
				12 mm	0.056	• Straight	7
		VYKB-...-M32	3/2-way solenoid valve: • Single solenoid • Normally closed/open • Operating voltage 12 ... 24 V DC	10 mm	0.034	• Straight • Angled	7
12 mm				0.056	• Straight	7	

Type codes

001	Series	
VYKB	Solenoid valve VYKB	

002	Directional control valve type	
F	Flanged valve	

003	Size	
10	Size 10	
12	Size 12	

004	Valve function	
M22C	2/2-way valve, normally closed	
M32	3/2-way valve, normally closed or open	

005	Nominal width	
20	2 mm	
16	1.6 mm	

006	Housing material	
P	PEEK	

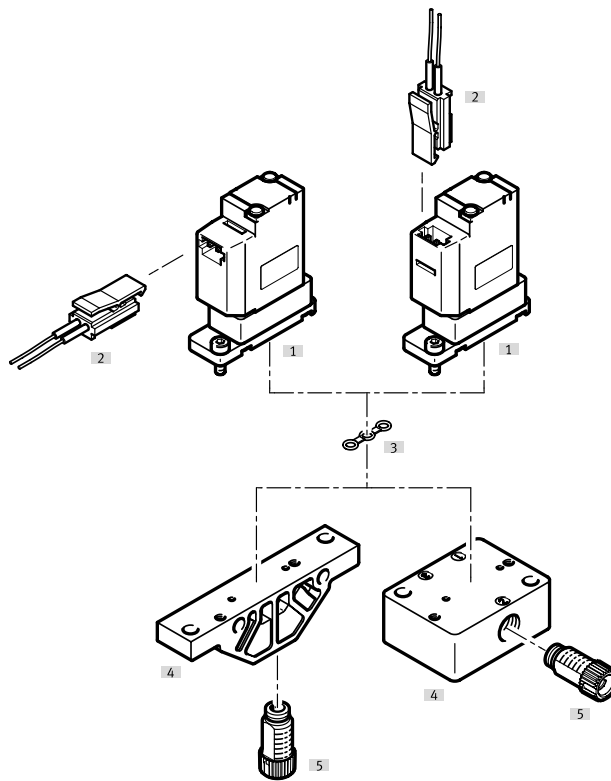
007	Diaphragm and sealing material	
E	EPDM	
F	FFPM	
V	FPM	

008	Nominal operating voltage	
1	24 V DC	
5	12 V DC	

009	Electrical connection	
HP	Port pattern HP	

010	Outlet direction of electrical components	
A	Angled	
S	Straight	

Peripherals overview

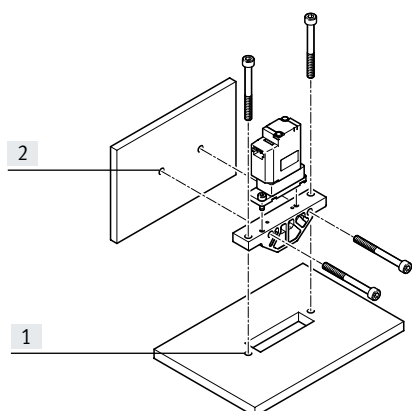


Accessories

Type/order code	Description	→ Page/Internet
[1] VYKB	Solenoid valve	13
[2] NEBV-HPG2	Connecting cable	14
[3] VAVC-K2	Seal	14
[4] VABS-K2	Manifold rail	14
[5] NLFA-D	Fitting	14

Key features – Mounting

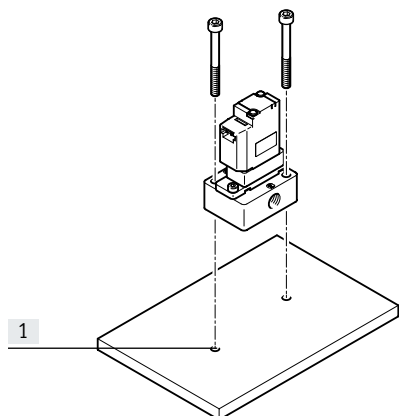
Mounting with ports underneath



- [1] Vertical mounting holes
- [2] Horizontal mounting holes

The individual sub-base for wall mounting is designed for integration into a system or machine. It can be mounted horizontally or vertically.



Mounting with ports at the side



- [1] Vertical mounting holes

The individual sub-base for wall mounting is designed for integration into a system or machine. It can be mounted vertically.

Technical data

-  Size:
10 mm
12 mm
-  Flow rate:
0.034 [m³/h]
0.056 [m³/h]



General technical data				
Size		10 mm	12 mm	
Valve function		2/2-way, closed, single solenoid 3/2-way, open/closed, single solenoid		
Design		Rocker valve with diaphragm seal		
Reset method		Mechanical spring		
Nominal size	[mm]	1.6	2.0	
Fluid connection		Flange		
Flow rate Kv	2/2-way valve	[m ³ /h]	0.034	0.056
	3/2-way valve	[m ³ /h]	0.034	0.056
Internal volume	2/2-way valve	[μl]	35	60
	3/2-way valve	[μl]	35	60
Sealing principle		Soft		
Direction of flow		Not reversible		
Actuation type		Electrical		
Type of control		Direct		
Manual override		None		
Type of mounting		With through-hole for M2 screw	With through-hole for M3 screw	
Mounting position		Any		
Degree of protection		IP40		
Corrosion resistance class ¹⁾		0		
Product weight	[g]	18	40	

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.

Electrical data				
Size		10 mm	12 mm	
Operating voltage range	VYKB- ... -1HPS	[V DC]	24	
	VYKB- ... -5HPS	[V DC]	12	
Permissible voltage fluctuations	VYKB- ... -1HPS	[%]	±10	
	VYKB- ... -5HPS	[%]	-5/ +10	
Electrical port 1	Connection type		Cable with plug	
	Connection technology		Plug pattern HP	
Characteristic coil data	VYKB- ... -1HPS	[V DC]	24 V DC: low-current phase 1 W, high-current phase 3.7	24 V DC: low-current phase 1 W, high-current phase 4.5 W
	VYKB- ... -5HPS	[V DC]	12 V DC: low-current phase 1 W, high-current phase 3.7 W	12 V DC: low-current phase 1 W, high-current phase 5.2 W
Duty cycle		[%]	100	

Technical data

Switching time			2/2-way valve			3/2-way valve		
			Diaphragm material EPDM	Diaphragm material FFPM	Diaphragm material FPM	Diaphragm material EPDM	Diaphragm material FFPM	Diaphragm material FPM
Switching time	On	[ms]	15	20	15	15	20	15
	Off	[ms]	15	20	15	15	20	15
Max. switching frequency		[Hz]	2	2	2	2	2	2

Operating and environmental conditions			10 mm		12 mm	
Size						
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 medium	[°C]		0 ... 50			
Temperature of liquid media	[°C]		0 ... 50			
Ambient temperature	[°C]		0 ... 50			
Storage temperature	[°C]		-20 ... 70			
Overload pressure	[MPa]		0.3		0.45	
	[bar]		3		4.5	
	[psi]		43.5		65.25	
Pressure of medium	[MPa]		-0.075 ... 0.1		-0.075 ... 0.3	
	[bar]		-0.75 ... 1		-0.75 ... 3	
	[psi]		-10.875 ... 14.5		-10.875 ... 43.5	
CE marking (see declaration of conformity) ¹⁾			To EU EMC Directive		To EU RoHS Directive	
			To UK instructions for EMC		To UK RoHS instructions	

1) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/... → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

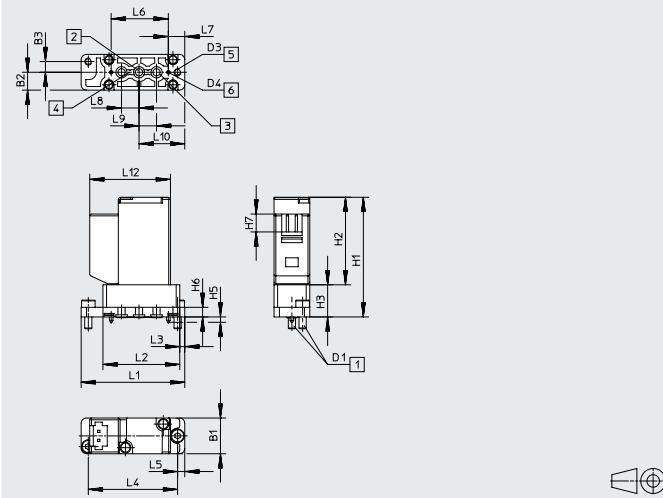
Information on materials		
Materials in contact with the media	All types	PEEK
	VYKB- ... -PE	EPDM
	VYKB- ... -PF	FFPM
	VYKB- ... -PV	FPM
Housing material		PEEK
Diaphragm material	VYKB- ... -PE	EPDM
	VYKB- ... -PF	FFPM
	VYKB- ... -PV	FPM
Sealing material	VYKB- ... -PE	EPDM
	VYKB- ... -PF	FFPM
	VYKB- ... -PV	FPM
Material of sub-base VABS		PEEK
Note on materials		RoHS-compliant
PWIS conformity		VDMA24364 zone III

Technical data

Dimensions – Solenoid valve size 10 mm

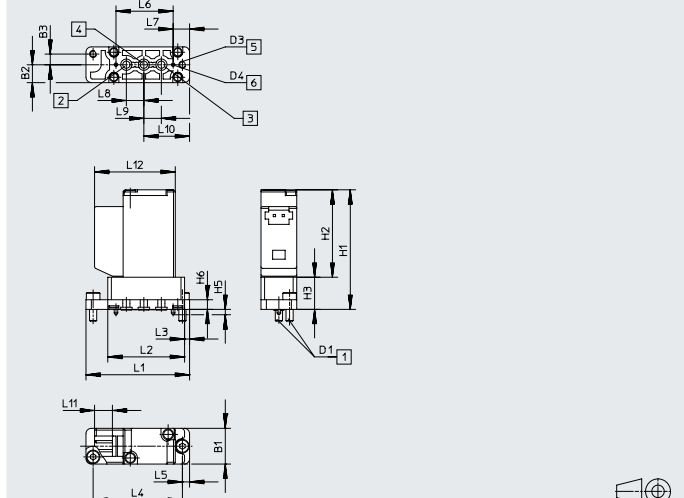
Download CAD data → www.festo.com

Outlet direction of electrical components: straight



- [1] Mounting screws
- [4] Port 3
- [5] Port 1
- [7] Port 2
- [8] Mounting holes
- [9] Coding pin

Outlet direction of electrical components: angled



- [1] Mounting screws
- [4] Port 3
- [5] Port 1
- [7] Port 2
- [8] Mounting holes
- [9] Coding pin

Type	B1	B2	B3	D1	D3 ∅	D4 ∅	H1	H2	H3	H5	H6	H7
VYKB-...S Outlet direction of electrical components: straight	10	5	3	M2x0.4	2.1	1	33.5	24.5	9	1.5	2.7	5
VYKB-...A Outlet direction of electrical components: angled	10	5	3	M2x0.4	2.1	1	33.5	24.5	9	1.5	2.7	–

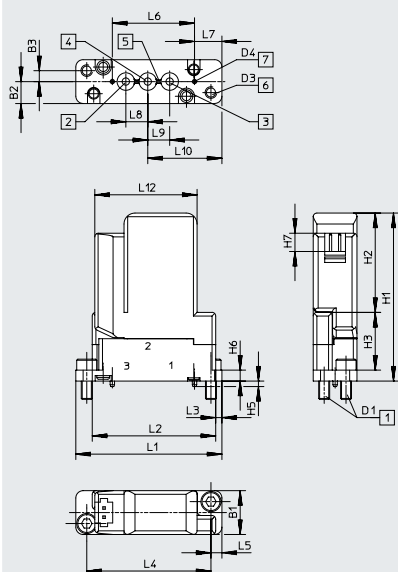
Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
VYKB-...S Outlet direction of electrical components: straight	29	21.5	1.4	25	2	16	4.6	4.9	4.9	12.8	–	22.6
VYKB-...A Outlet direction of electrical components: angled	29	21.5	1.4	25	2	16	4.6	4.9	4.9	12.8	5	22.6

Technical data

Dimensions – Solenoid valve size 12 mm

Download CAD data → www.festo.com

Outlet direction of electrical components: straight



- [1] Mounting screws
- [4] Port 3
- [5] Port 1
- [7] Port 2
- [8] Mounting holes
- [9] Coding pin

Type	B1	B2	B3	D1	D3 Ø	D4 Ø	H1	H2	H3	H5	H6	H7
VYKB-...S Outlet direction of electrical components: straight	12	6	3	M3x0.5	3.2	1.2	46	27.2	15.8	1.5	3	5

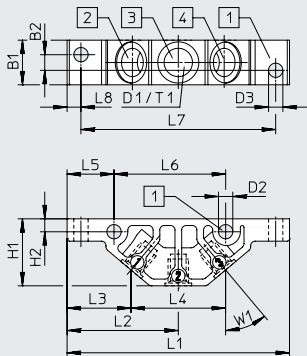
Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L12
VYKB-...S Outlet direction of electrical components: straight	40	33.8	1.7	34	3	22.5	7.5	6	6	20.3	28

Technical data

Dimensions

Download CAD data → www.festo.com

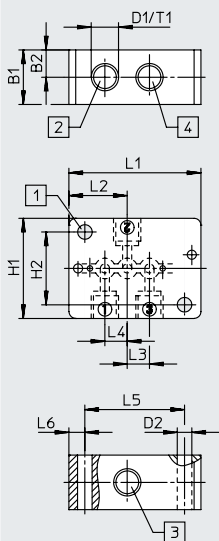
Manifold rail VABS-K2-10B



- [1] Mounting holes
- [2] Port 1
- [3] Port 2
- [4] Port 3

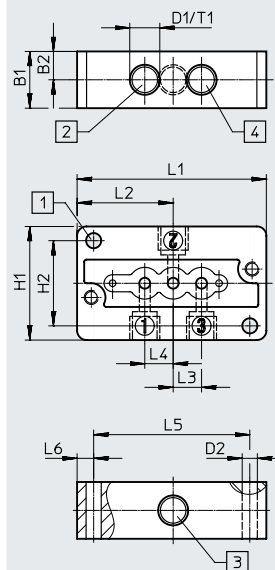
Type	B1	B2	D1	D2 Ø	D3 Ø	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	T1	W1
VABS-K2-10B-16-M6-P	10	3.5	M6	3.2	3.2	15	2.9	49.8	24.9	14.3	21.2	10.5	25	43.6	3.1	6	40°
VABS-K2-10B-16-U14-P			1/4-28 UNF														

Manifold rail VABS-K2-10S



- [1] Mounting holes
- [2] Port 1
- [3] Port 2
- [4] Port 3

Manifold rail VABS-K2-12S

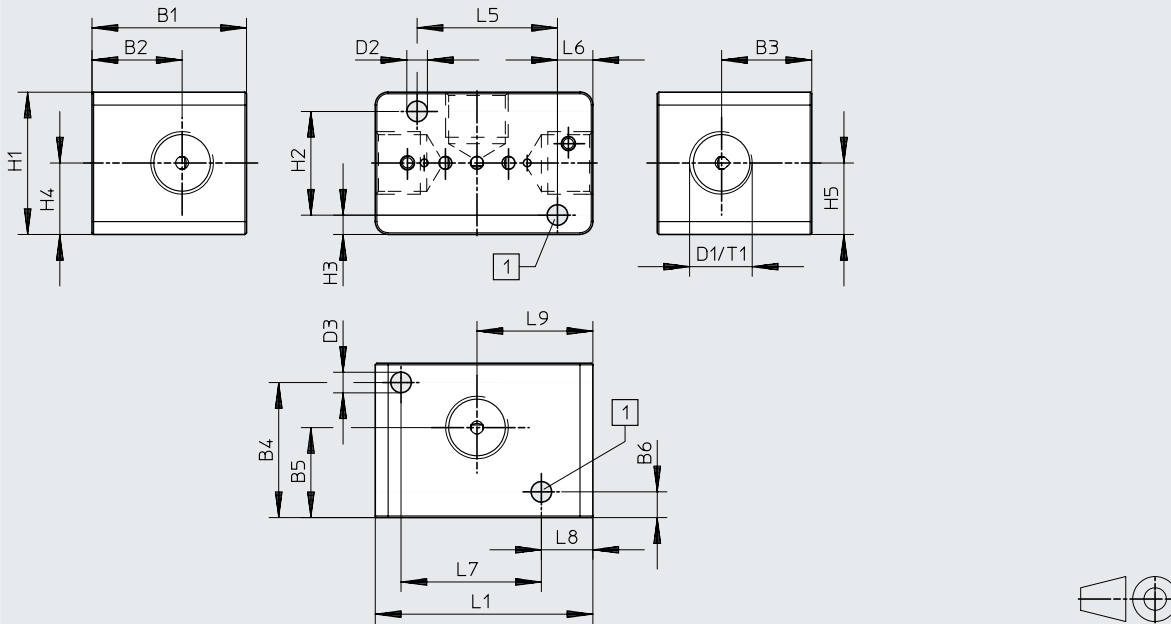


- [1] Mounting holes
- [2] Port 1
- [3] Port 2
- [4] Port 3

Type	B1	B2	D1	D2 Ø	H1	H2	L1	L2	L3	L4	L5	L6	T1
VABS-K2-10S-16-M6-P	12	6	M6	3.2	22	16	29	12.8	4.9	4.9	21.9	3.5	6
VABS-K2-10S-16-U14-P			1/4-28 UNF										
VABS-K2-12S-20-M6-P	12	6	M6	3.2	24	18	40	20.3	6	6	33	3.5	6
VABS-K2-12S-20-U14-P			1/4-28 UNF										

Technical data

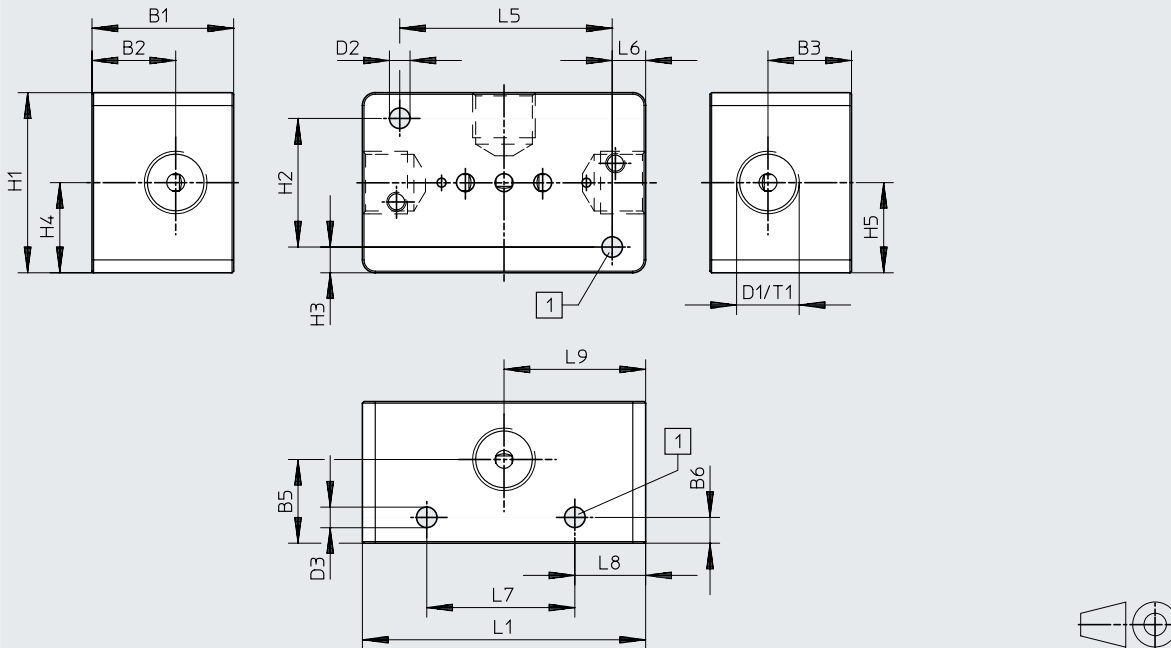
Manifold rail VABS-K2-10-16-...-P



[1] Mounting holes

Type	B1	B2	B3	B4	B5	B6	D1	D2 Ø	D3 Ø	H1	H2	H3	H4	H5	L1	L5	L6	L7	L8	L9	T1
VABS-K2-10-16-G18-P	24	14	14	21	14	4	G1/8	3.2	3.2	22.1	16.1	3	11.1	11.1	33.8	21.8	5.5	21.8	8	18	8
VABS-K2-10-16-M5-P	24	14	14	21	14	4	M5	3.2	3.2	22.1	16.1	3	11.1	11.1	33.8	21.8	5.5	21.8	8	18	6

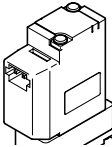
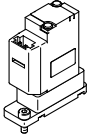
Manifold rail VABS-K2-12S-20-...18-P



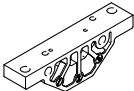
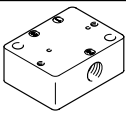
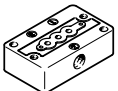
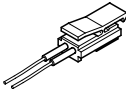



[1] Mounting holes

Type	B1	B2	B3	B5	B6	D1	D2 Ø	D3 Ø	H1	H2	H3	H4	H5	L1	L5	L6	L7	L8	L9	T1
VABS-K2-12S-20-N18-P	22	13	13	13	4	G1/8	3.2	3.2	28	20	4	14	14	44	33	5.2	23	11	22	8
VABS-K2-12S-20-G18-P	22	13	13	13	4	NPT1/8-27	3.2	3.2	28	20	4	14	14	44	33	5.2	23	11	22	10

Accessories

Ordering data		Description	Part No.	Type		
Solenoid valve size 10 mm						
	2/2-way valve, normally closed	Diaphragm and sealing material EPDM	Nominal operating voltage 12 V DC	Outlet direction of electrical components: angled	8122801	VYKB-F10-M22C-16-PE-5HPA
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: angled	8122804	VYKB-F10-M22C-16-PE-1HPA
			Nominal operating voltage 12 V DC	Outlet direction of electrical components: straight	8122813	VYKB-F10-M22C-16-PE-5HPS
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: straight	8122816	VYKB-F10-M22C-16-PE-1HPS
		Diaphragm and sealing material FFPM	Nominal operating voltage 12 V DC	Outlet direction of electrical components: angled	8122803	VYKB-F10-M22C-16-PF-5HPA
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: angled	8122806	VYKB-F10-M22C-16-PF-1HPA
			Nominal operating voltage 12 V DC	Outlet direction of electrical components: straight	8122815	VYKB-F10-M22C-16-PF-5HPS
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: straight	8122818	VYKB-F10-M22C-16-PF-1HPS
		Diaphragm and sealing material FPM	Nominal operating voltage 12 V DC	Outlet direction of electrical components: angled	8122802	VYKB-F10-M22C-16-PV-5HPA
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: angled	8122805	VYKB-F10-M22C-16-PV-1HPA
			Nominal operating voltage 12 V DC	Outlet direction of electrical components: straight	8122814	VYKB-F10-M22C-16-PV-5HPS
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: straight	8122817	VYKB-F10-M22C-16-PV-1HPS
	3/2-way valve, normally closed or open	Diaphragm and sealing material EPDM	Nominal operating voltage 12 V DC	Outlet direction of electrical components: angled	8122807	VYKB-F10-M32-16-PE-5HPA
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: angled	8122810	VYKB-F10-M32-16-PE-1HPA
			Nominal operating voltage 12 V DC	Outlet direction of electrical components: straight	8122819	VYKB-F10-M32-16-PE-5HPS
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: straight	8122822	VYKB-F10-M32-16PE-1HPS
		Diaphragm and sealing material FFPM	Nominal operating voltage 12 V DC	Outlet direction of electrical components: angled	8122809	VYKB-F10-M32-16-PF-5HPA
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: angled	8122812	VYKB-F10-M32-16-PF-1HPA
			Nominal operating voltage 12 V DC	Outlet direction of electrical components: straight	8122821	VYKB-F10-M32-16-PF-5HPS
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: straight	8122824	VYKB-F10-M32-16-PF-1HPS
Diaphragm and sealing material FPM		Nominal operating voltage 12 V DC	Outlet direction of electrical components: angled	8122808	VYKB-F10-M32-16-PV-5HPA	
		Nominal operating voltage 24 V DC	Outlet direction of electrical components: angled	8122811	VYKB-F10-M32-16-PV-1HPA	
		Nominal operating voltage 12 V DC	Outlet direction of electrical components: straight	8122820	VYKB-F10-M32-16-PV-5HPS	
		Nominal operating voltage 24 V DC	Outlet direction of electrical components: straight	8122823	VYKB-F10-M32-16-PV-1HPS	
Solenoid valve size 12 mm						
	2/2-way valve, normally closed	Diaphragm and sealing material EPDM	Nominal operating voltage 12 V DC	Outlet direction of electrical components: straight	8140315	VYKB-F12-M22C-20-PE-5HPS
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: straight	8140316	VYKB-F12-M22C-20-PE-1HPS
	3/2-way valve, normally closed or open	Diaphragm and sealing material EPDM	Nominal operating voltage 12 V DC	Outlet direction of electrical components: straight	8140317	VYKB-F12-M32-20-PE-5HPS
			Nominal operating voltage 24 V DC	Outlet direction of electrical components: straight	8140318	VYKB-F12-M32-20-PE-1HPS

Accessories

Ordering data		Description	Part No.	Type	
Manifold rail					
	Port underneath	Female thread M6	Size 10 mm	8122825	VABS-K2-10B-16-M6-P
		Female thread 1/4-28 UNF		8122826	VABS-K2-10B-16-U14-P
	Port at the side	Female thread M6	Size 10 mm	8122827	VABS-K2-10S-16-M6-P
		Female thread 1/4-28 UNF		8122828	VABS-K2-10S-16-U14-P
		Female thread G1/8		8186874	VABS-K2-10S-16-G18-P
		Female thread M5		8186875	VABS-K2-10S-16-M5-P
	Port at the side	Female thread M6	Size 12 mm	8140319	VABS-K2-12S-20-M6-P
		Female thread 1/4-28 UNF		8140320	VABS-K2-12S-20-U14-P
		Female thread 1/8 NPT		8186870	VABS-K2-12S-20-N18-P
		Female thread G1/8		8186871	VABS-K2-12S-20-G18-P
Connecting cable					
	Straight socket, plug pattern Q7	Cable length 0.3 m	8122832	NEBV-HPG2-PN-0.3-N-LE2	
Seal					
	Included in the scope of delivery of the valves	For valves of size 10 mm, for mounting on manifold rails	Sealing material EPDM	8122829	VAVC-K2-S-3-E
			Sealing material FFPM	8122831	VAVC-K2-S-3-F
			Sealing material FPM	8122830	VAVC-K2-S-3-V
Fitting					
	Male thread 1/4-28 UNF	For tubing I.D. 1.2 mm	8104288	NLFA-D-U14-B1.2-PP-P10	
		For tubing O.D. 1.6 mm	8104285	NLFA-D-U14-K1.6-PP-P10	
		For tubing I.D. 2.1 mm	8104289	NLFA-D-U14-B2.1-PP-P10	
		For tubing O.D. 3.0 mm	8104286	NLFA-D-U14-K3-PP-P10	
	Male thread M6	For tubing O.D. 3.2 mm	8104287	NLFA-D-U14-K3.2-PP-P10	
		For tubing O.D. 6.0 mm	132600	QSM-M6-6	