

## Media separated solenoid valves VYKB

**FESTO**



## Key features

### Special characteristics

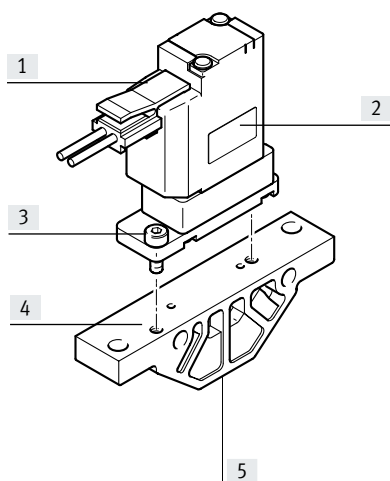
- Very easy to clean thanks to media separation
- Low media consumption thanks to small internal volume
- High-quality materials, therefore also suitable for aggressive media
- High flow rate with small size
- High repetition accuracy, switching frequency and precision, therefore also suitable for extremely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

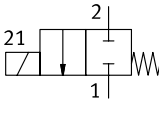
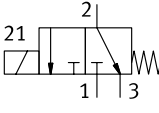
The valve VYKB is a directly actuated directional control valve with solenoid coil. In a de-energised state, the valve automatically returns to its normal position. Normally closed (2/2-way solenoid valve and 3/2-way solenoid valve) and normally open (3/2-way solenoid valve only) variants are available.

### Configuration



- [1] Terminal contact for connecting cable NEBV (included in the scope of delivery of the valves)
- [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 <sup>3</sup> /h]	Outlet direction of electrical components	→ Page/ Internet
Media separated solenoid valve		VYKB-...-M22C	2/2-way solenoid valve: <ul style="list-style-type: none"> <li>• Single solenoid</li> <li>• Normally closed</li> <li>• Operating voltage 12 ... 24 V DC</li> </ul>	10 mm	0.034	<ul style="list-style-type: none"> <li>• Straight</li> <li>• Angled</li> </ul>	7
				12 mm	0.056	<ul style="list-style-type: none"> <li>• Straight</li> </ul>	7
		VYKB-...-M32	3/2-way solenoid valve: <ul style="list-style-type: none"> <li>• Single solenoid</li> <li>• Normally closed/open</li> <li>• Operating voltage 12 ... 24 V DC</li> </ul>	10 mm	0.034	<ul style="list-style-type: none"> <li>• Straight</li> <li>• Angled</li> </ul>	7
				12 mm	0.056	<ul style="list-style-type: none"> <li>• Straight</li> </ul>	7

## Type codes

001	Series	
<b>VYKB</b>	Solenoid valve VYKB	

002	Directional control valve type	
<b>F</b>	Flanged valve	

003	Size	
<b>10</b>	Size 10	
<b>12</b>	Size 12	

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

005	Nominal width	
<b>20</b>	2 mm	
<b>16</b>	1.6 mm	

006	Housing material	
<b>P</b>	PEEK	

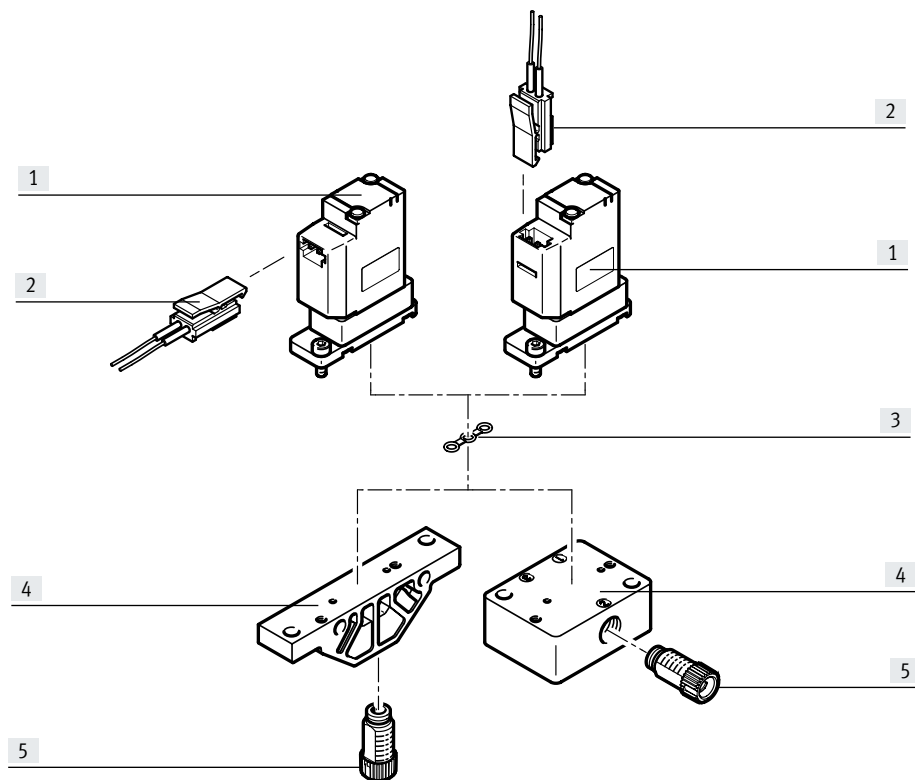
007	Diaphragm and sealing material	
<b>E</b>	EPDM	
<b>F</b>	FFPM	
<b>V</b>	FPM	

008	Nominal operating voltage	
<b>1</b>	24 V DC	
<b>5</b>	12 V DC	

009	Electrical connection	
<b>HP</b>	Port pattern HP	

010	Outlet direction of electrical components	
<b>A</b>	Angled	
<b>S</b>	Straight	

## Peripherals overview

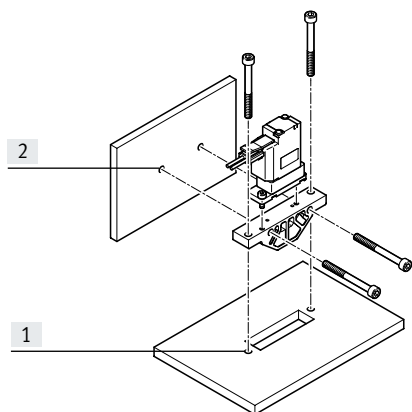


## Accessories

Type/order code	Description	→ Page/Internet
[1] VYKB	Solenoid valve	12
[2] NEBV-HPG2	Connecting cable	13
[3] VAVC-K2	Seal	13
[4] VABS-K2	Manifold rail	13
[5] NLFA-D	Fitting	13

## Key features – Mounting

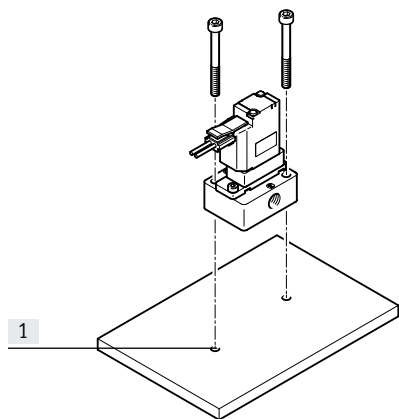
## Mounting with ports underneath



- [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 [m<sup>3</sup>/h]  
0.056 [m<sup>3</sup>/h]



General technical data			10 mm	12 mm
Size				
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		[m <sup>3</sup> /h]		
	2/2-way valve		0.034	0.056
	3/2-way valve		0.034	0.056
Internal volume		[μl]		
	2/2-way valve		35	60
	3/2-way valve		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 <sup>1)</sup>			0	
Product weight		[g]	20	42

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			10 mm	12 mm
Size				
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) <sup>1)</sup>			To EU EMC Directive		To EU RoHS Directive	
			To UK instructions for EMC		To UK RoHS instructions	
UKCA marking (see declaration of conformity) <sup>1)</sup>			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/...](http://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

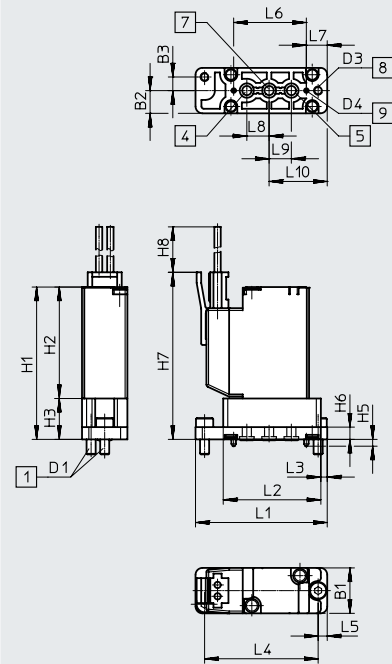


Technical data

Dimensions – Solenoid valve size 10 mm

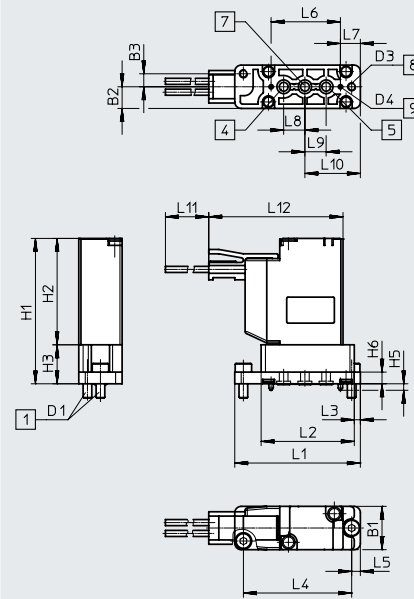
Download CAD data → [www.festo.com](http://www.festo.com)

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 Ø	D4 Ø	H1	H2	H3	H5	H6	H7	H8
VYKB-...S Outlet direction of electrical components: straight	10	5	3	0.4	2.1	1	33.5	24.5	9	1.5	2.7	37	300
VYKB-...A Outlet direction of electrical components: angled	10	5	3	0.4	2.1	1	33.5	24.5	9	1.5	2.7	-	-

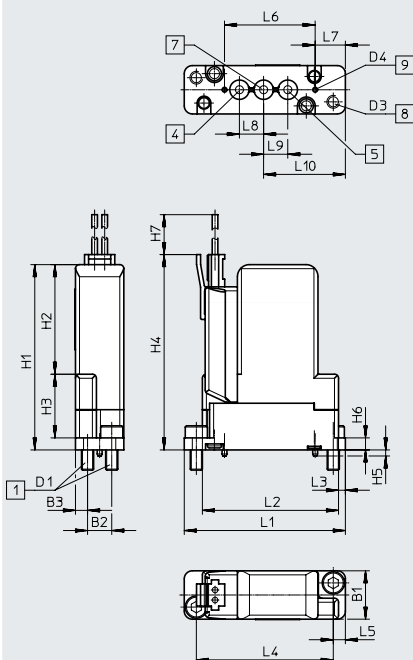
Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
VYKB-...S Outlet direction of electrical components: straight	29	21.5	1.4	25	2	16	4.6	4.9	4.9	12.8	-	-
VYKB-...A Outlet direction of electrical components: angled	29	21.5	1.4	25	2	16	4.6	4.9	4.9	12.8	300	31

## Technical data

## Dimensions – Solenoid valve size 12 mm

Download CAD data → [www.festo.com](http://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 ∅	D4 ∅	H1	H2	H3	H4	H5	H6	H7
VYKB-...S Outlet direction of electrical components: straight	12	6	3	0.5	3.2	1.2	46	27.2	15.8	48.5	1.5	3	300

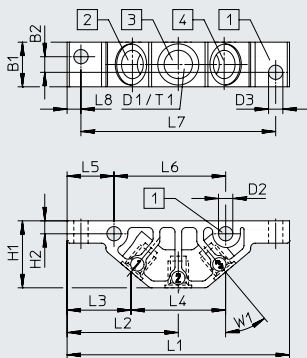
Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
VYKB-...S Outlet direction of electrical components: straight	40	33.8	1.7	34	3	22.5	7.5	6	6	20.3

Technical data

**Dimensions**

Download CAD data → [www.festo.com](http://www.festo.com)

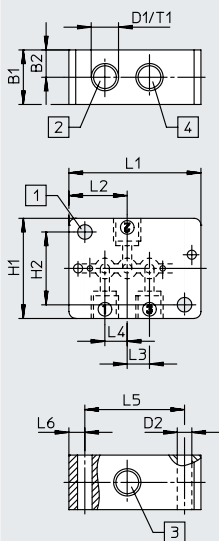
Manifold rail VABS-K2-10B



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

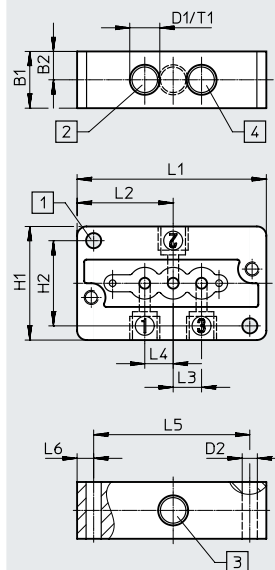
Type	B1	B2	D1	D2 Ø	D3 Ø	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	T1	W1
VABS-K2-10B-16-M6-P	10	3.5	M6	3.2	3.2	15	2.9	49.8	24.9	14.3	21.2	10.5	25	43.6	3.1	6	40°
VABS-K2-10B-16-U14-P			1/4-28 UNF														

Manifold rail VABS-K2-10S



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

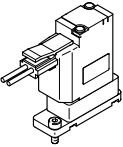
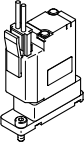
Manifold rail VABS-K2-12S



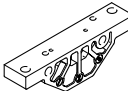
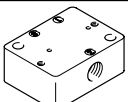
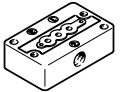
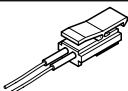



- [1] Mounting holes
- [2] Port 1
- [3] Port 2
- [4] Port 3

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										

## Accessories

Ordering data		Description	Part No.	Type		
<b>Solenoid valve size 10 mm</b>						
	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
<b>Solenoid valve size 12 mm</b>						
	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	
<b>Manifold rail</b>					
	Port underneath	Female thread M6	Size 10 mm	8122825	VABS-K2-10B-16-M6-P
		Female thread 1/4-28 UNF	Size 10 mm	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	Size 10 mm	8122828	VABS-K2-10S-16-U14-P
	Port at the side	Female thread M6	Size 12 mm	8140319	VABS-K2-12S-20-M6-P
		Female thread 1/4-28 UNF	Size 12 mm	8140320	VABS-K2-12S-20-U14-P
<b>Connecting cable</b>					
	Included in the scope of delivery of the valves	Straight socket, plug pattern Q7	Cable length 0.3 m	8122832	NEBV-HPG2-PN-0.3-N-LE2
<b>Seal</b>					
	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
<b>Fitting</b>					
	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
		For tubing O.D. 3.2 mm		8104287	NLFA-D-U14-K3.2-PP-P10
	Male thread M6	For tubing O.D. 6.0 mm		132600	QSM-M6-6