Solenoid valves VUVB/valve terminals VTUB

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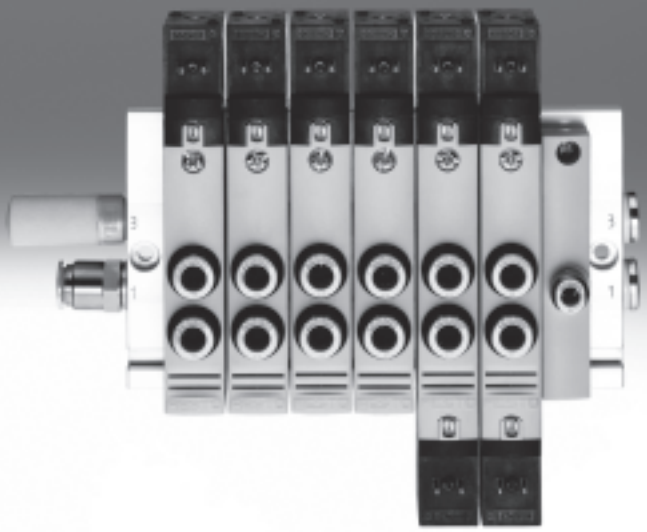
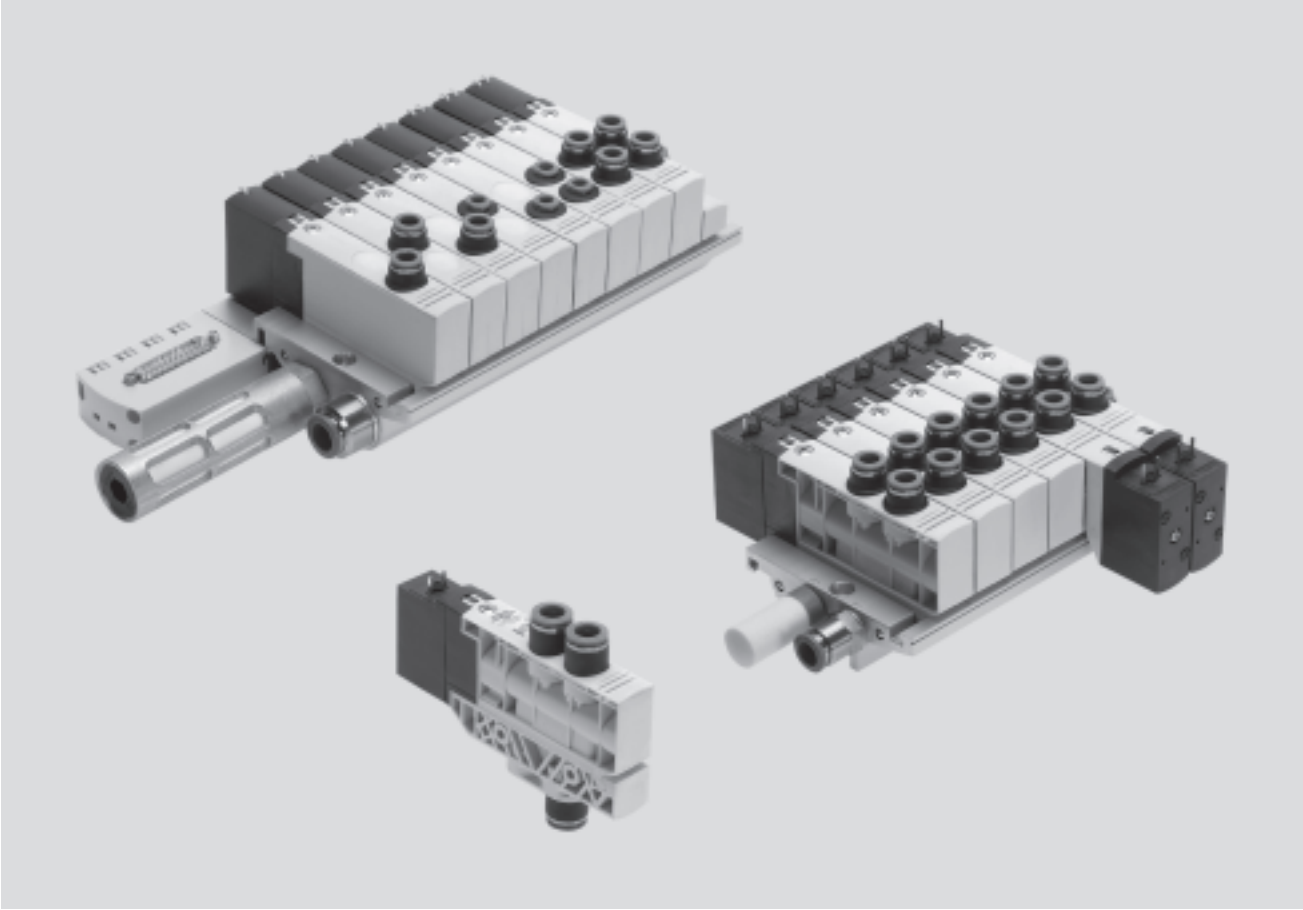


Solenoid valves VUVB/valve terminals VTUB

Key features



Innovative

- Valve terminal for a wide range of pneumatic applications
- Standardised from the individual valve to the multi-pin plug
- Great flexibility during planning, assembly and operation
- Selectable valve functions; 3/2 and 4/2-way function also suitable for vacuum applications
- Wide selection of optimally tailored accessories for flow rates from 200 to 1,000 l/min

Versatile

- Room for expansion with 2 ... 16 valve positions on one valve terminal
- Use of individual valves in combination with an individual sub-base
- Flexibility of the pneumatic working lines provides a practical solution to different requirements
- Two pressure zones (additional zones on request)
- Large pressure range –0.9 ... 8 bar
- Extensive operating voltage range from 12 V DC to 230 V AC

Reliable

- Manual override
- Durable thanks to tried-and-tested piston spool valves
- Sturdy thanks to the polymer housing and metal manifold rail
- Fast troubleshooting thanks to an LED signal status display in the plug socket with cable or on the valve in the case of the design with multi-pin plug

Easy to mount

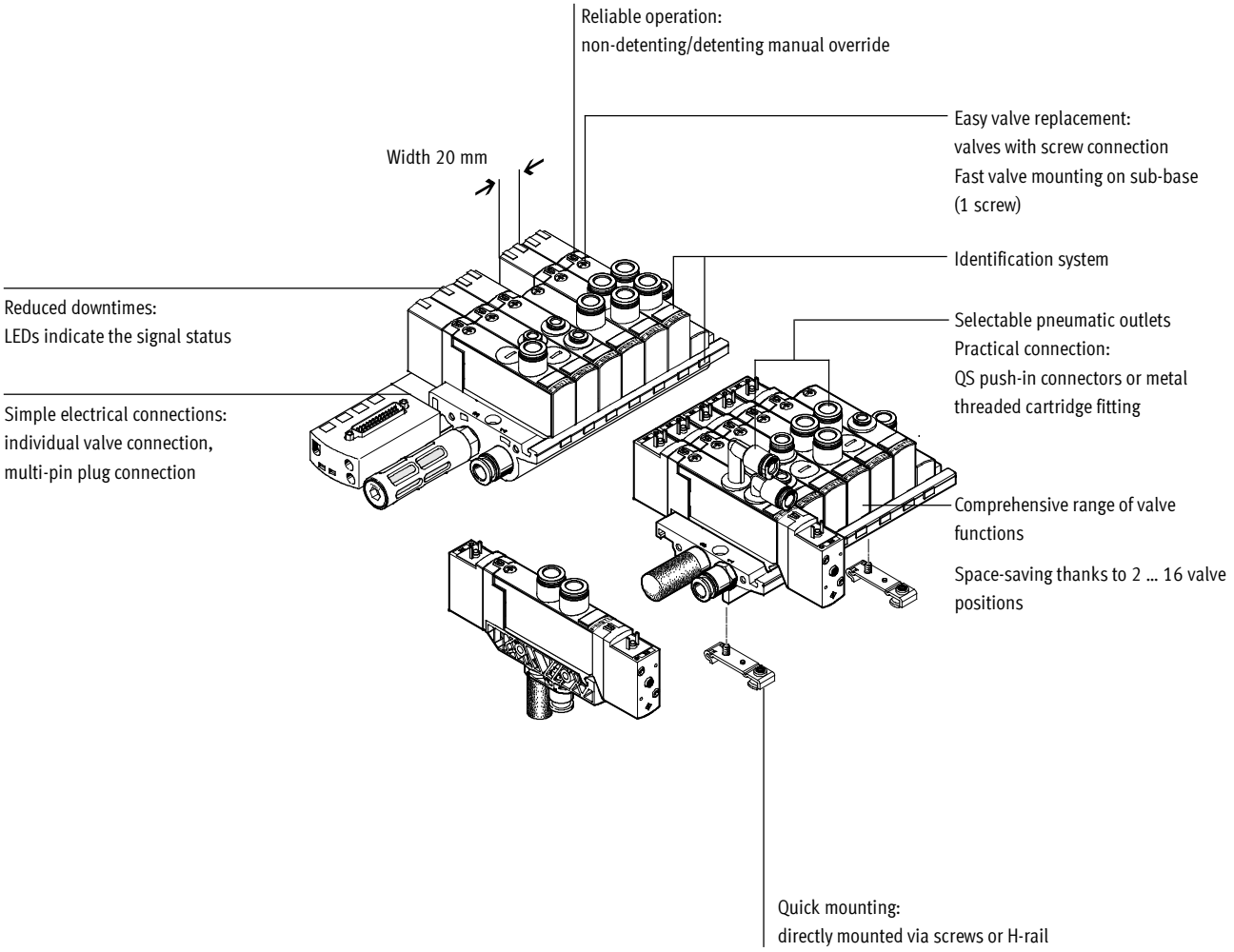
- Ready-to-install and tested unit
- Lower ordering, installation and commissioning costs
- Secure mounting on wall or H-rail

Note

Valve terminals are available for 4, 6, 8, 10, 12 and 16 valve positions in connection size G½. On the version with 16 valve positions, only single solenoid valves can be mounted from the ninth valve position onwards.

Solenoid valves VUVB/valve terminals VTUB

Key features



Equipment options

Valve functions

- 3/2-way valve, normally open
- 3/2-way valve, normally closed
- 4/2-way valve, single solenoid
- 4/2-way valve, double solenoid

Electrical connection options

Individual connection/individual valve connection

- 2 ... 16 valve positions with manifold rail
- 2 ... 32 solenoid coils
- Via plug socket with cable with either LED or illuminating seal

Multi-pin plug

- 4 ... 16 valve positions/ max. 24 solenoid coils
- Sub-D

Valve terminal configurator

Download CAD data ➔ **www.festo.com**

A valve terminal configurator is available to help you select a suitable valve terminal VTUB. This makes it much easier to order the right product. Valve terminals VTUB are ordered via an ident. code. All valve terminals are supplied fully assembled and individually tested. This reduces assembly and installation time to a minimum.

Ordering system for valve terminal VTUB

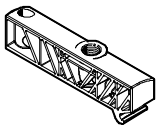
- Individual electrical connection
- Electrical multi-pin plug connection

➔ Internet: vtub

Solenoid valves VUVB/valve terminals VTUB

Key features

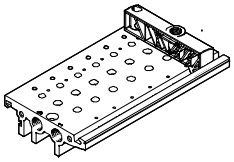
Pilot air supply module



The pilot air supply module is included in the scope of delivery of the manifold rail.

The pilot air supply module for internal or external pilot air supply ensures even greater flexibility.

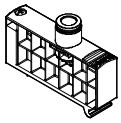
Manifold rail



The manifold rail features a groove into which the semi in-line valves are latched and secured with just one screw.

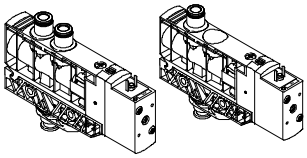
The valve functions 4/2-way single solenoid, 4/2-way double solenoid, 3/2-way normally closed and 3/2-way normally open are available. All semi in-line valves can be supplied with cartridges QSP for tubing diameters 4, 6, 8 and 10. 4/2-way valves are also supplied without cartridges, allowing users to fit cartridges of their choice or blanking plugs.

Pressure zone supply module



The pressure zone supply module occupies one valve position and can be used as an additional supply or for supplying a pressure zone.

Individual valve



An individual valve can be ordered as an in-line valve (comprising semi in-line valve and sub-base ready assembled) in all functions. Tubing diameters 6 and 8 can be selected here. The in-line valve, however, can also be assembled using an individual sub-base and semi in-line valve. All tubing diameters and the variant without cartridge are available in this case.

Blanking plate

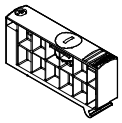
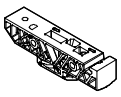


Plate without valve function for reserving valve positions on a valve terminal.

Valves and blanking plates are attached to the manifold rail using one screw.

Sub-base



Individual sub-bases can be equipped with any valve.

Electrical connection is by means of a standardised connector plug, square design to EN 175301-803, type C.

Pre-assembled plug sockets with cable or plugs for self-assembly are offered for this.

Pneumatic connection

Supply and exhaust

The valves are supplied pneumatically via manifold rails or individual sub-bases.

The manifold rails contain common lines for compressed air supply, exhaust and pilot exhaust for all valves.

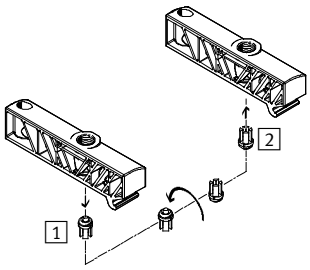
The common lines can be connected
- at the left (code L),
- at the right (code R) or
- at both ends (no code).

Pilot air supply

In-line valves are available with internal and external pilot air supply. With semi in-line valves the mounting position of the insert in the sub-base determines whether the valves are actuated internally or externally.

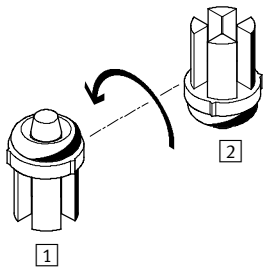
Internal pilot air supply
Internal pilot air supply can be selected if the supply pressure is between 2 and 8 bar. The pilot air supply is branched from duct 1 in the pressure zone supply module in this case.

External pilot air supply
External pilot air supply must be used if the supply pressure is between –0.9 and +2 bar. The pilot air supply is supplied via port 12/14 of the pressure zone supply module in this case.



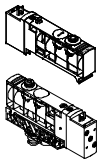
If the selector is installed as shown in position 1, it means that the pilot air supply will be branched internally from duct 1.

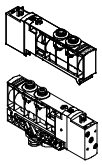
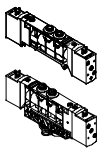
If the selector is turned 180° and installed as shown in position 2, it means that the valve manifold is set to external pilot air supply.



Solenoid valves VUVB/valve terminals VTUB

Product range overview – Individual valves and manifold valves

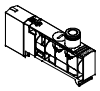
Function	Version	Type	Nominal flow rate [l/min]	Pneumatic connection	Operating voltage [V]	Semi in-line valve	In-line valve	Pilot air supply		→ Page/ Internet
								Internal	External	
3/2-way valves	Single solenoid valve for individual connection and valve manifold									
		VUVB-...-M32-...	200	QS-4	24 DC 110 AC 230 AC 12 DC/24 AC	■	–	–	■	14
			500	QS-6		■	■	■	■	
			800	QS-8		■	■	■	■	
			1,000	QS-10		■	–	–	■	
			1,000	QX[1)]		■	–	–	■	

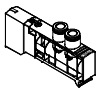
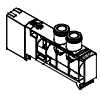
Function	Version	Type	Nominal flow rate [l/min]	Pneumatic connection	Operating voltage [V]	Semi in-line valve	In-line valve	Pilot air supply		→ Page/ Internet
								Internal	External	
4/2-way valves	Single solenoid valve for individual connection and valve manifold									
		VUVB-...-M42-...	200	QS-4	24 DC 110 AC 230 AC 12 DC/24 AC	■	–	–	■	14
			500	QS-6		■	■	■	■	
			800	QS-8		■	■	■	■	
			1,000	QS-10		■	–	–	■	
			1,000	QX[1)]		■	–	–	■	
	Double solenoid valve for individual connection and valve manifold									
		VUVB-...-B42-...	200	QS-4	24 DC 110 AC 230 AC 12 DC/24 AC	■	–	–	■	14
			500	QS-6		■	■	■	■	
			800	QS-8		■	■	■	■	
			1,000	QS-10		■	–	–	■	
			1,000	QX[1)]		■	–	–	■	

1) Cartridge not included

Solenoid valves VUVB/valve terminals VTUB

Product range overview – Terminal valves

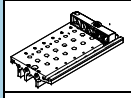
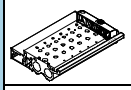
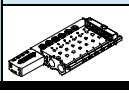
Function	Version	Type	Nominal flow rate [l/min]	Pneumatic connection	Operating voltage [V]	Semi in-line valve	Pilot air supply External	➔ Page/ Internet
3/2-way valves	Single solenoid valve for valve terminal with electrical multi-pin plug connection							
		VUVB-...-M32-...	200	QS-4	24 DC	■	■	35
			500	QS-6		■	■	
			800	QS-8		■	■	
			1,000	QS-10		■	■	
			1,000	QX[1]		■	■	

Function	Version	Type	Nominal flow rate [l/min]	Pneumatic connection	Operating voltage [V]	Semi in-line valve	Pilot air supply External	➔ Page/ Internet
4/2-way valves	Single solenoid valve for valve terminal with electrical multi-pin plug connection							
		VUVB-...-M42-...	200	QS-4	24 DC	■	■	35
			500	QS-6		■	■	
			800	QS-8		■	■	
			1,000	QS-10		■	■	
			1,000	QX[1]		■	■	
	Double solenoid valve for valve terminal with electrical multi-pin plug connection							
		VUVB-...-B42-...	200	QS-4	24 DC	■	■	35
			500	QS-6		■	■	
			800	QS-8		■	■	
			1,000	QS-10		■	■	
			1,000	QX[1]		■	■	

1) Cartridge not included

Solenoid valves VUVB/valve terminals VTUB

Product range overview

Function	Version	Type	Pneumatic connection	Valve positions												Pilot air supply		→ Page/ Internet
				2	3	4	5	6	7	8	9	10	11	12	16	Internal	External	
Manifold rail	For valve manifold with individual electrical connection																	
		VABM	G¼	■	■	■	■	■	■	■	■	■	■	■	–	■	■	23
		VABM	G½	■	■	■	■	■	■	■	■	■	■	■	■	■	■	24
	For valve terminal with electrical multi-pin plug connection																	
		VABM-...-M1	G½	–	–	■	–	■	–	■	–	■	–	■	■	■	■	41

Function	Version	Type	Pilot air supply		→ Page/ Internet
			Internal	External	
Sub-base	Individual valve				
		VABS	■	■	25

Function	Version	Type	Pneumatic connection	Use	→ Page/ Internet
Pressure zone supply module		VABF	QS-10	For additional supply to the manifold rail	43

Function	Version	Type	Use	→ Page/ Internet
Blanking plate		VABB	For covering vacant positions	44

Function	Version	Type	Use	→ Page/ Internet
Separator		VABD	For duct separation	44

Function	Version	Type	Use	→ Page/ Internet
H-rail mounting kit		VAME	For mounting on the H-rail NRH-35-2000	49

Function	Version	Type	→ Page/ Internet
Cartridge		QSP...	48

Function	Version	Type	→ Page/ Internet
Adapter		NPFA	49

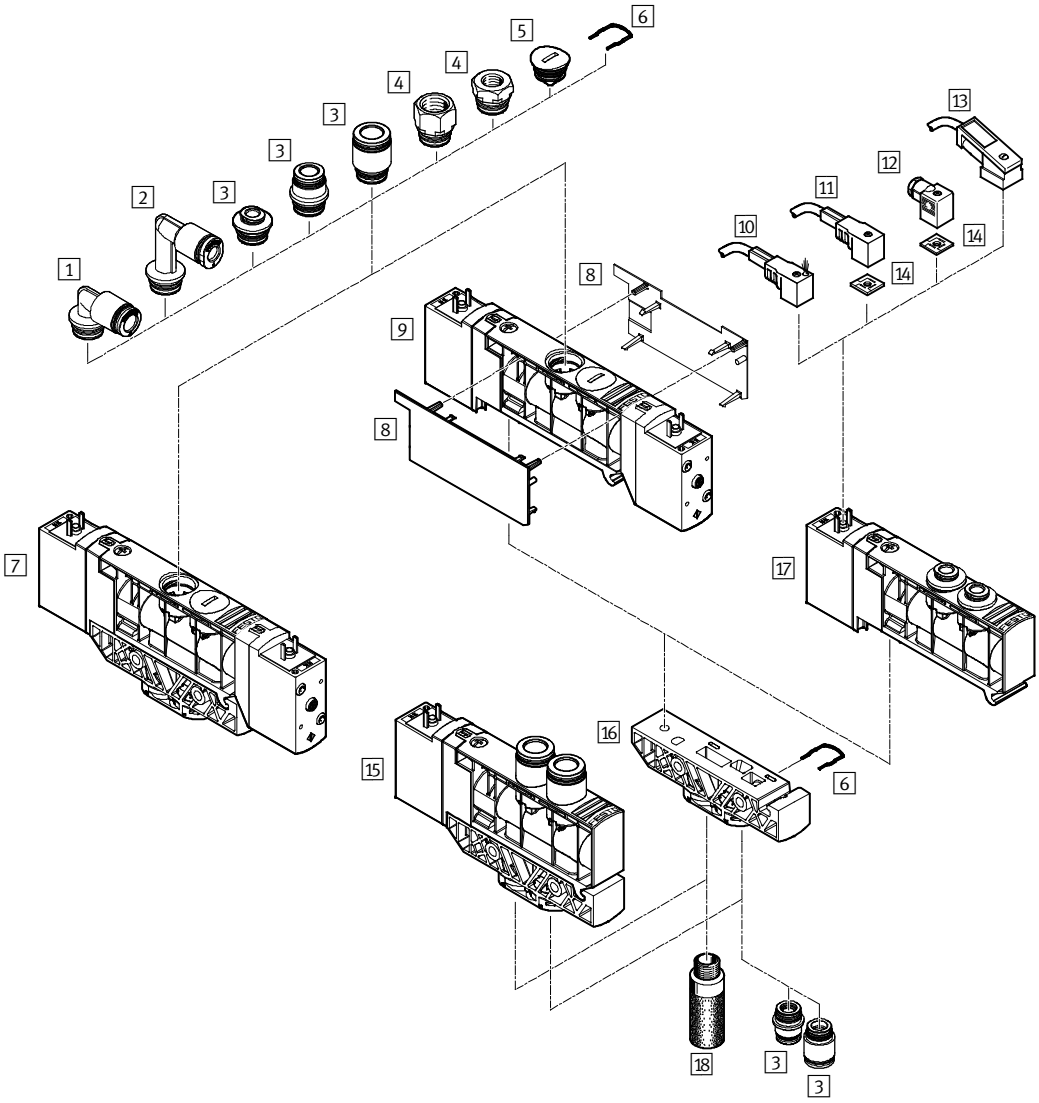
Overview – Solenoid valve VUVB

Individual position with individual electrical connection

These peripherals are ordered via individual parts/accessories.

An individual valve can be ordered as an in-line valve or as a fully assembled semi in-line valve on a sub-base.

The in-line valve is available with 6 or 8 mm push-in connectors. The semi in-line valve on sub-base is available with 4, 6, 8 or 10 mm push-in connectors or as a variant without cartridge.



Accessories			
		Brief description	**➔ Page/Internet**
1	Cartridge QSPL	For connecting compressed air tubing with standard O.D.	48
2	Cartridge QSPLL	For connecting compressed air tubing with standard O.D.	48
3	Cartridge QSP	For connecting compressed air tubing with standard O.D.	48
4	Adapter NPFA	–	49
5	Blanking plug QSPC18	For sealing the pneumatic connections on the valve	49
6	Clamping spring	For fitting cartridges and blanking plugs (included in the scope of delivery of the cartridge QSP... and the blanking plug QSPC18)	–
7	Double solenoid valve VUVB-L-...-B-...	In-line valve	20
8	Cover for valve housing VAMC	–	46
9	Double solenoid valve VUVB-S-...-B-...	Semi in-line valve	14
10	Plug socket with cable with LED KMEB-1-...-LED	For indicating the signal status	50
11	Plug socket with cable KMEB-1-230AC-...	Can be used up to 230 V	50
12	Plug socket MSSD-EB	–	50
13	Plug socket with cable with LED KMEB-2-24-...	For indicating the signal status	50
14	Illuminating seal MEB-LD	For indicating the signal status	50
15	Single solenoid valve VUVB-L-...-M-...	In-line valve	20
16	Sub-base VABS-B6-PB-...	For individual valve	47
17	Single solenoid valve VUVB-S-...-M-...	Semi in-line valve	20
18	Silencer U, UC	For fitting in exhaust ports	49

Overview – Solenoid valve VUVB

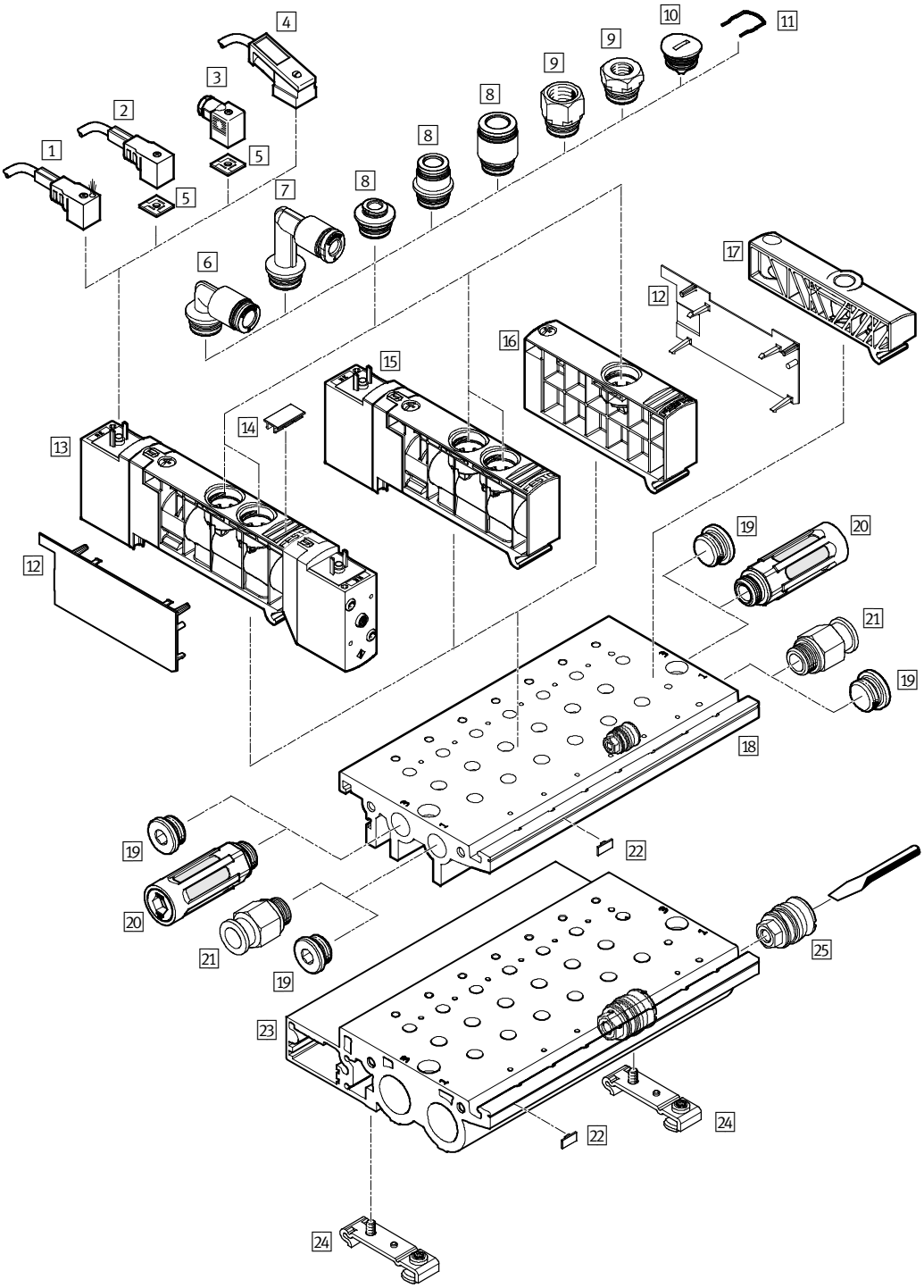
Manifold assembly/valve terminal with individual electrical connections

- "Individual connection type" code: ET

Valve terminals with individual electrical connections are available in gradations from 2 to max. 16 valve positions.

Valve positions can either be fitted with a valve or a blanking plate for future expansions.

In total up to 32 solenoid valves can be actuated.



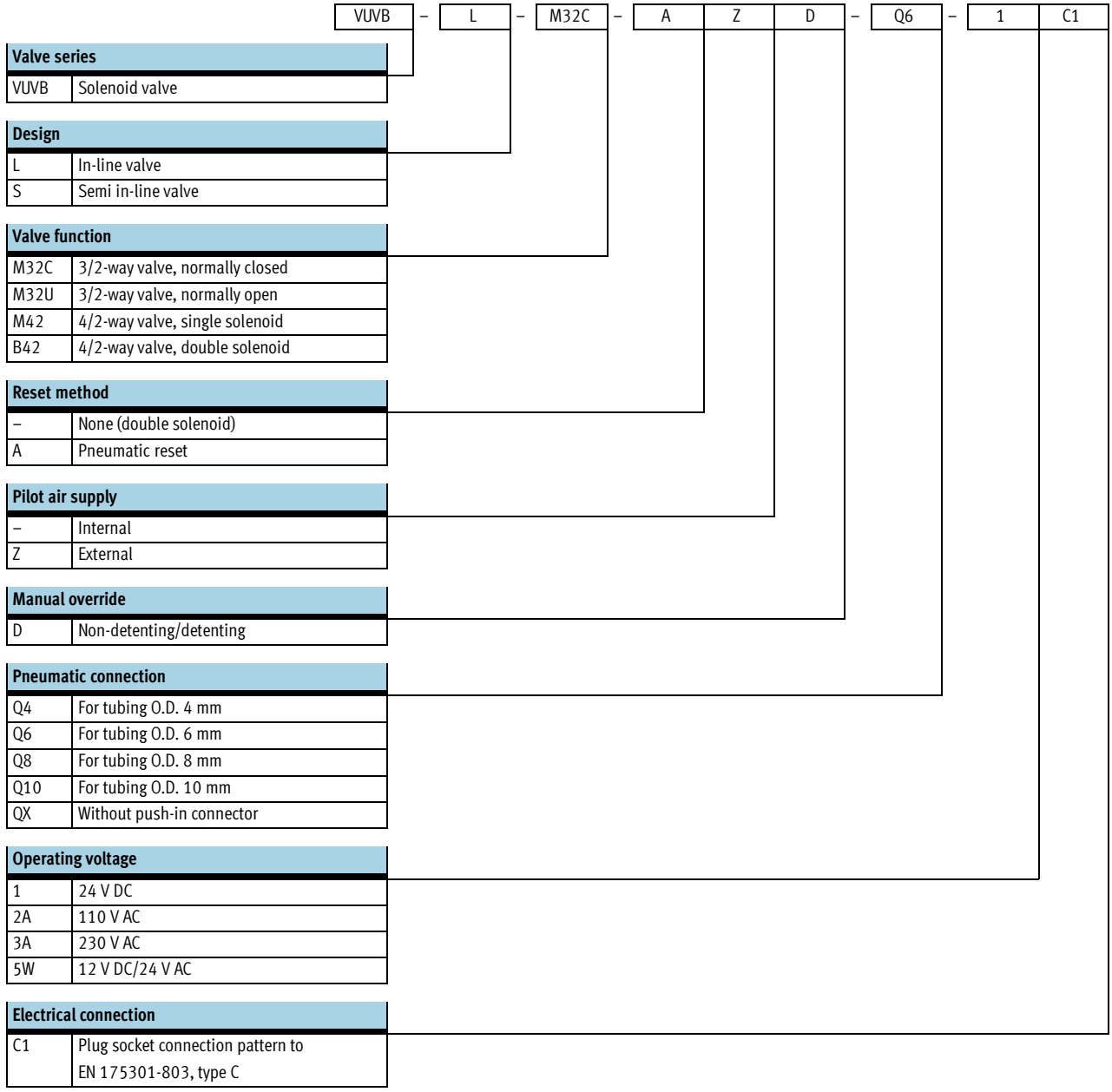
Solenoid valves VUVB

Peripherals overview

Accessories			
		Brief description	➔ Page/Internet
1	Plug socket with cable with LED KMEB-1-...-LED	For indicating the signal status	50
2	Plug socket with cable KMEB-1-230AC-...	Can be used up to 230 V	50
3	Plug socket MSSD-EB	–	50
4	Plug socket with cable with LED KMEB-2-24-...	For indicating the signal status	50
5	Illuminating seal MEB-LD	For indicating the signal status	50
6	Cartridge QSPL-...	For connecting compressed air tubing with standard O.D.	48
7	Cartridge QSPLL-...	For connecting compressed air tubing with standard O.D.	48
8	Cartridge QSP-...	For connecting compressed air tubing with standard O.D.	48
9	Adapter NPFA-...	–	49
10	Blanking plug QSPC18	For sealing the pneumatic connections on the valve	49
11	Clamping spring	For fitting cartridges and blanking plugs (included in the scope of delivery of the cartridge QSP... and the blanking plug QSPC18)	–
12	Cover for valve housing VAMC	–	46
13	Double solenoid valve VUVB-...-B	–	20
14	Inscription label IBS-9x17	For identifying the valves	49
15	Single solenoid valve VUVB-...-M	–	20
16	Blanking plate/pressure zone supply module VABF/VABB	Pressure zone supply module VABF: with cartridge Blanking plate VABB: for vacant position, with blanking plug	43/44
17	Pilot air supply module	For pilot air supply (included in the scope of delivery of the manifold rail VABM)	–
18	Manifold rail VABM-B6-E-G14-...	Pneumatic connection G¼, for connecting max. 12 valves	23
19	Blanking plug B	–	49
20	Silencer U, UC	For fitting in exhaust ports	49
21	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	48
22	Inscription label MH-BZ-80X	For identifying the manifold rail	49
23	Manifold rail VABM-B6-E-G12-...	Pneumatic connection G½, for connecting max. 16 valves	24
24	H-rail mounting kit VAME	For mounting on the H-rail NRH-35-2000	49
25	Separator for pressure zones VABD	For mounting in the manifold rail	44

Solenoid valves VUVB

Type codes – Individual valves and manifold valves



Valve series	
VUVB	Solenoid valve

Design	
L	In-line valve
S	Semi in-line valve

Valve function	
M32C	3/2-way valve, normally closed
M32U	3/2-way valve, normally open
M42	4/2-way valve, single solenoid
B42	4/2-way valve, double solenoid

Reset method	
–	None (double solenoid)
A	Pneumatic reset

Pilot air supply	
–	Internal
Z	External

Manual override	
D	Non-detenting/detenting

Pneumatic connection	
Q4	For tubing O.D. 4 mm
Q6	For tubing O.D. 6 mm
Q8	For tubing O.D. 8 mm
Q10	For tubing O.D. 10 mm
QX	Without push-in connector

Operating voltage	
1	24 V DC
2A	110 V AC
3A	230 V AC
5W	12 V DC/24 V AC

Electrical connection	
C1	Plug socket connection pattern to EN 175301-803, type C

Solenoid valves VUVB

Technical data – Individual valves and manifold valves

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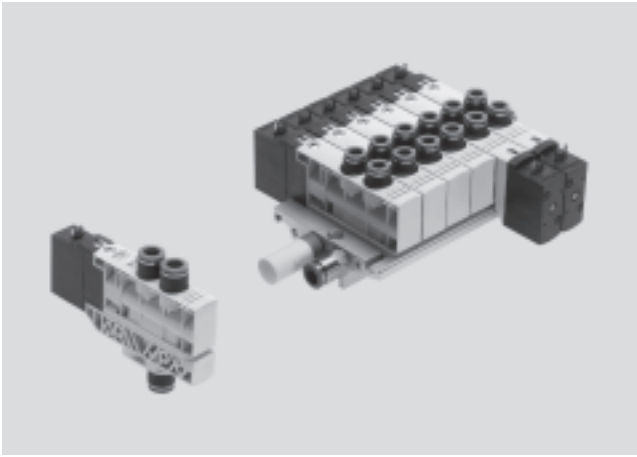
Voltage
12, 24 V DC
24, 110, 230 V AC

Pressure
–0.9 ... +8 bar

Temperature range
–5 ... +50 °C



General technical data					
Valve function			3/2-way, single solenoid	4/2-way, single solenoid	4/2-way, double solenoid
Design			Piston spool valve		
Sealing principle			Soft		
Actuation type			Electric		
Reset method			Pneumatic spring		–
Type of control			Piloted		
Pilot air supply			Internal or external		
Direction of flow			Non-reversible		
Exhaust function			No flow control		
Manual override			Non-detenting, detenting		
Type of mounting			Via through-hole		
Mounting position			Any		
Nominal size		[mm]	7		
Standard nominal flow rate	qnN	[l/min]	200 (QS-4); 500 (QS-6); 800 (QS-8); 1,000 (QS-10)		
Width		[mm]	20		
Product weight	In-line valve	[g]	170	170	240
	Semi in-line valve	[g]	150	150	220

Operating and environmental conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[bar]	–0.9 ... +8
Operating pressure for valve terminal with internal pilot air supply	[bar]	2 ... 8
Pilot pressure	[bar]	2 ... 8
Ambient temperature	[°C]	–5 ... +50
Temperature of medium	[°C]	–5 ... +50
Corrosion resistance class CRC		1[1)]
Note on materials		RoHS-compliant
CE mark		To EU Low Voltage Directive

1) Corrosion resistance class 1 according to Festo standard 940 070
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

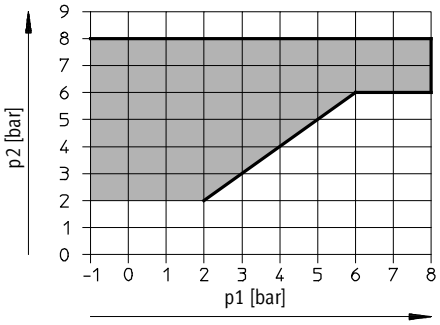
Note

A filter must be installed upstream of valves operated in vacuum mode. This prevents any foreign matter in the intake air getting into the valve (e.g. when operating a suction cup).

Electrical data			
Electrical connection			Plug, square design to EN 175301-803, type C
Nominal operating voltage	DC	[V]	12, 24
	AC	[V]	24, 110, 230
Permissible voltage fluctuations		[%]	±10
Electrical power consumption	12 V DC	[W]	1.4
	24 V DC	[W]	1.5
	24 V AC	[VA]	Pull: 3.1, hold: 2.2
	110 V AC	[VA]	Pull: 3.1, hold: 2.2
	230 V AC	[VA]	Pull: 3.1, hold: 2.2
Protection class to EN 60529			IP65 (in combination with plug socket)

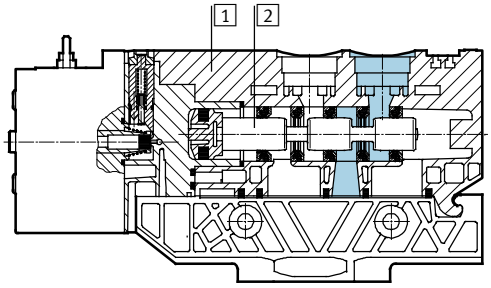
Valve switching times [ms]			
Valve function	3/2-way, single solenoid	4/2-way, single solenoid	4/2-way, double solenoid
On	20	20	–
Off	20	20	–
Changeover	–	–	15

Pilot pressure p2 as a function of working pressure p1

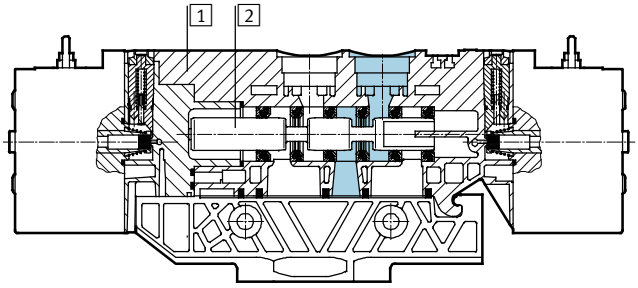


Materials

Sectional view – Single solenoid valve



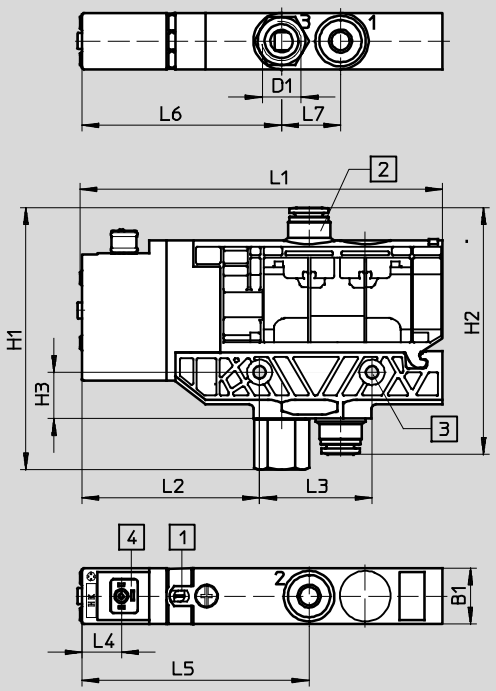
Sectional view – Double solenoid valve



1	Housing	Reinforced polyamide
2	Piston spool	Wrought aluminium alloy
–	Seals	Nitrile rubber, hydrogenated nitrile rubber, fluoro elastomer

Dimensions – 3/2-way and 4/2-way valve, single solenoid Download CAD data ➔ **www.festo.com**

In-line valve

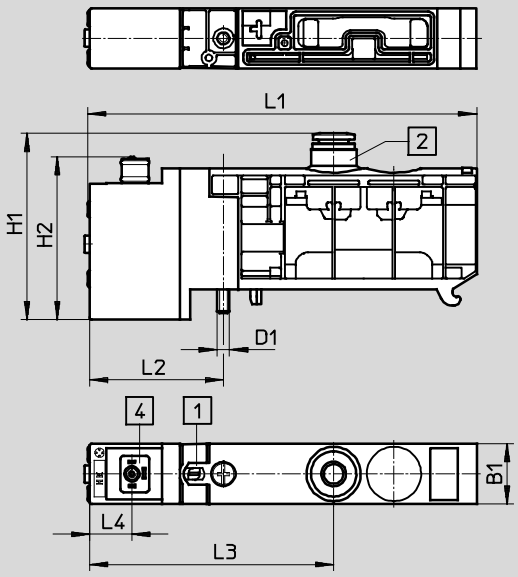


1 Manual override
2 Fitting QS-6 or QS-8
3 Through-hole for screw M4
4 Plug socket connection pattern to EN 175301-803, type C

Type	B1	D1	H1	H2	L1	L2	L3	L4	L5	L6	L7
VUVB-L-M32–Q6	20	G¼	83.1	16.5	129	63.2	40	14	80.8	71	21
VUVB-L-M32–Q8			89.9								

Dimensions – 3/2-way and 4/2-way valve, single solenoid Download CAD data ➔ **www.festo.com**

Semi in-line valve



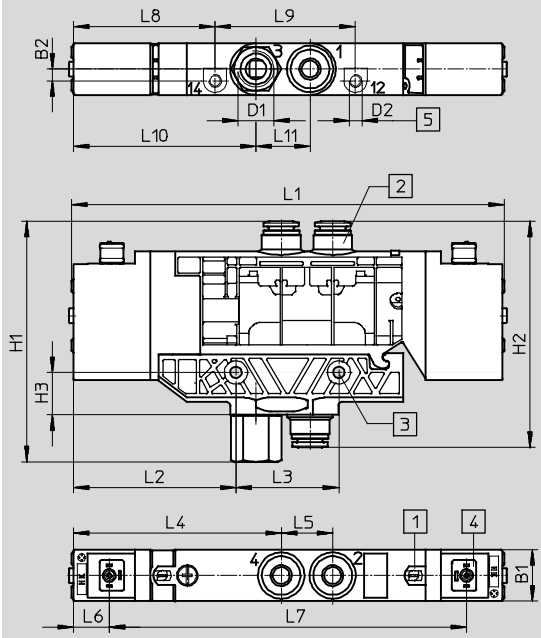
1 Manual override
2 Fitting QS–
4 Plug socket connection pattern to EN 175301-803, type C

Type	B1	D1	H1	H2	L1	L2	L3	L4
VUVB-S-M32...-Q4	20	M4	57	53.9	129	44.3	80.8	14
VUVB-S-M32...-Q6			60					
VUVB-S-M32...-Q8			63					
VUVB-S-M32...-Q10			65					

Dimensions – 4/2-way valve, double solenoid

Download CAD data ➔ **www.festo.com**

In-line valve



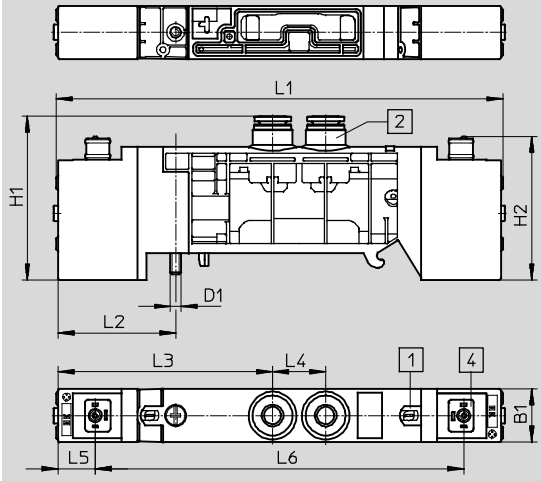
1 Manual override
2 Fitting QS-6 or QS-8
3 Through-hole for screw M4
4 Plug socket connection pattern to EN 175301-803, type C
5 Port for external pilot air

Type	B1	B2	D1	D2	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11
VUVB-L-B42-…-Q6	20	4.6	G¼	M5	83.1	16.5	168.2	63.2	40	80.8	20	14	138.8	55.1	54.5	71	21
VUVB-L-B42-…-Q8					89.9												

Dimensions – 4/2-way valve, double solenoid

Download CAD data ➔ **www.festo.com**

Semi in-line valve

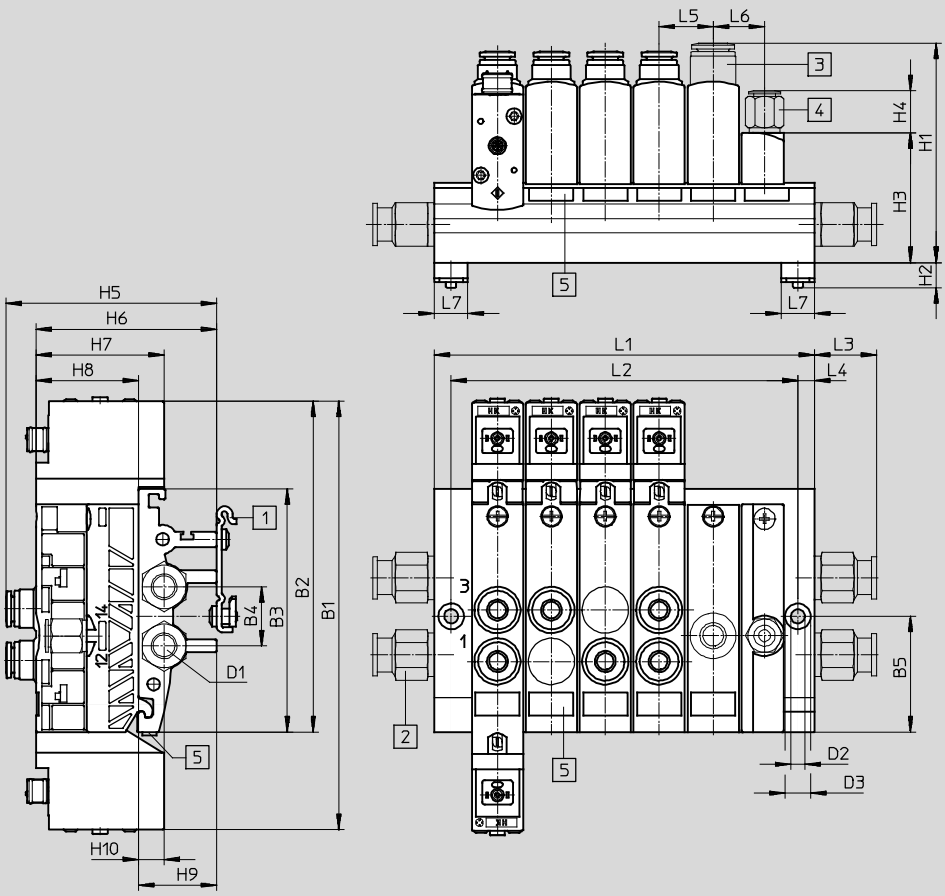


1 Manual override
2 Fitting QS
4 Plug socket connection pattern to EN 175301-803, type C

Type	B1	D1	H1	H2	L1	L2	L3	L4	L5	L6
VUVB-S-B42…-Q4	20	M4	57	53.9	168.2	44.3	80.8	20	14	138.8
VUVB-S-B42…-Q6			60							
VUVB-S-B42…-Q8			63							
VUVB-S-B42…-Q10			65							

Dimensions – Manifold assembly Download CAD data ➔ **www.festo.com**

Manifold rail G¼



1 Attachment for mounting rail NRH-35-2000 (optional)

2 Push-in fittings (optional)

3 Cartridge (optional, only with pressure zone supply module)

4 Push-in fitting (optional)

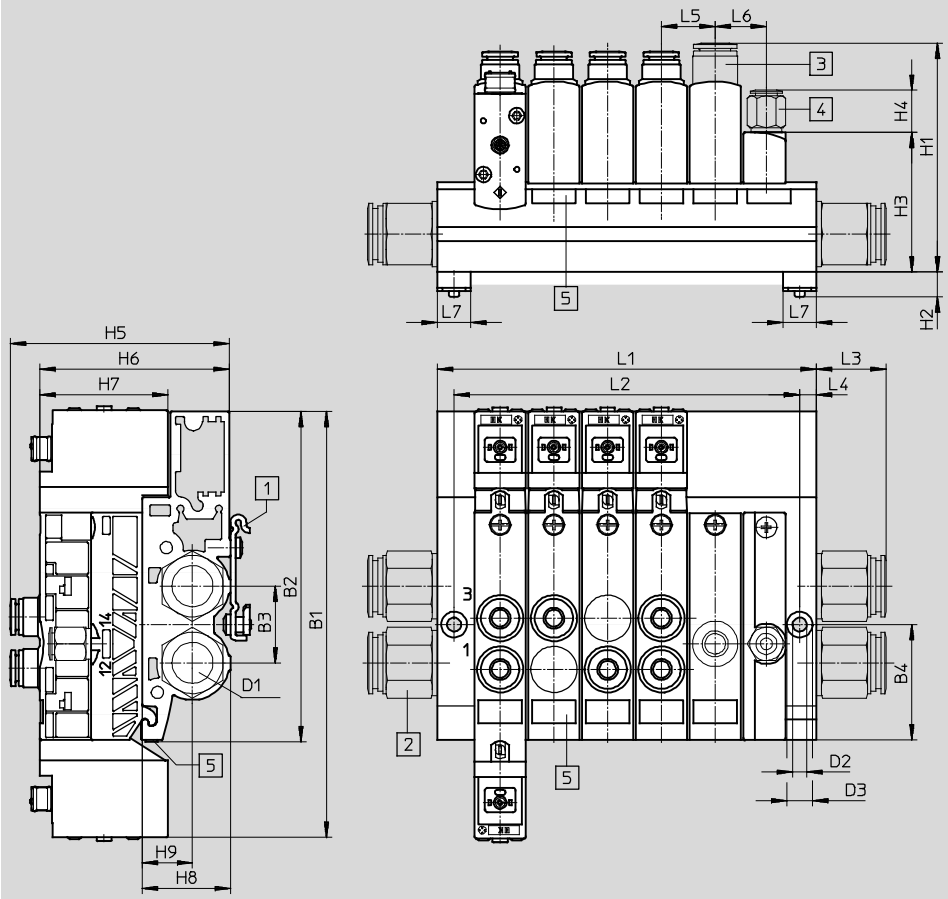
5 Inscription label (optional)

Type	B1	B2	B3	B4	B5	D1	D2 H13	D3 H13	H1	H2	H3	H4	H6	H7	H8	H9	H10	L1 ±0.1	L2 ±0.1	L3	L4	L5	L6	L7
VTUB-2	166.8	128.3	94.7	23	45	G¼	5.5	10	88.4	10	50.5	16.4	70.5	50.1	40	31	10	85	72	24.1	6.5	21	20	13
VTUB-3																		106	93					
VTUB-4																		127	114					
VTUB-5																		148	135					
VTUB-6																		169	156					
VTUB-7																		190	177					
VTUB-8																		211	198					
VTUB-9																		232	219					
VTUB-10																		253	240					
VTUB-11																		274	261					
VTUB-12																		295	282					

Type	H5
QSPK-18-4	74.6
QSPK-18-6	74.7
QSPK-18-8	81.7
QSPK-18-10	85.5

Dimensions – Manifold assembly Download CAD data ➔ **www.festo.com**

Manifold rail G1/2



1 Attachment for mounting rail NRH-35-2000 (optional)

2 Push-in fittings (optional)

3 Cartridge (optional, only with pressure zone supply module)

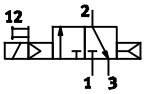
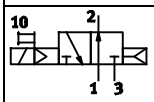
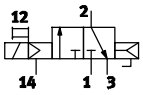
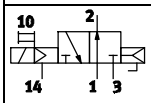
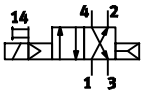
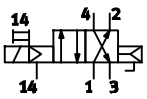
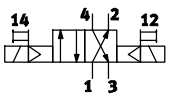
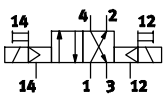
4 Push-in fitting (optional)

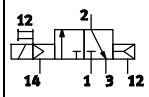
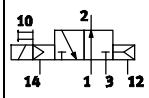
5 Inscription label (optional)

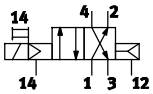
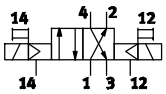
Type	B1	B2	B3	B4	D1	D2 H13	D3 H13	H1	H2	H3	H4	H6	H7	H8	H9	L1 ±0.1	L2 ±0.1	L3	L4	L5	L6	L7
VTUB-2	166.8	129.1	30	45	G¼	5.5	10	89.4	10	54.5	16.4	74	50.1	34.5	19.7	85	72	27.35	6.5	21	20	13
VTUB-3																106	93					
VTUB-4																127	114					
VTUB-5																148	135					
VTUB-6																169	156					
VTUB-7																190	177					
VTUB-8																211	198					
VTUB-9																232	219					
VTUB-10																253	240					
VTUB-11																274	261					
VTUB-12																295	282					

Type	H5
QSPK18-4	78.6
QSPK18-6	78.7
QSPK18-8	85.7
QSPK18-10	89.5

Ordering data – In-line valves

Circuit symbol	Code	Description	Voltage	Pneumatic connection	Part No.	Type
3/2-way valves						
	–	Normally closed, internal pilot air supply, pneumatic spring return	24 V DC	QS-6	**537468**	**VUVB-L-M32C-AD-Q6-1C1**
				QS-8	**537469**	**VUVB-L-M32C-AD-Q8-1C1**
			110 V AC	QS-6	**537538**	**VUVB-L-M32C-AD-Q6-2AC1**
				QS-8	**537539**	**VUVB-L-M32C-AD-Q8-2AC1**
			230 V AC	QS-6	**537546**	**VUVB-L-M32C-AD-Q6-3AC1**
				QS-8	**537547**	**VUVB-L-M32C-AD-Q8-3AC1**
	–	Normally open, internal pilot air supply, pneumatic spring return	24 V DC	QS-6	**537470**	**VUVB-L-M32U-AD-Q6-1C1**
				QS-8	**537471**	**VUVB-L-M32U-AD-Q8-1C1**
			110 V AC	QS-6	**537540**	**VUVB-L-M32U-AD-Q6-2AC1**
				QS-8	**537541**	**VUVB-L-M32U-AD-Q8-2AC1**
			230 V AC	QS-6	**537548**	**VUVB-L-M32U-AD-Q6-3AC1**
				QS-8	**537549**	**VUVB-L-M32U-AD-Q8-3AC1**
	–	Normally closed, external pilot air supply, pneumatic spring return	24 V DC	QS-6	**537476**	**VUVB-L-M32C-AZD-Q6-1C1**
				QS-8	**537477**	**VUVB-L-M32C-AZD-Q8-1C1**
			110 V AC	QS-6	**537554**	**VUVB-L-M32C-AZD-Q6-2AC1**
				QS-8	**537555**	**VUVB-L-M32C-AZD-Q8-2AC1**
			230 V AC	QS-6	**537562**	**VUVB-L-M32C-AZD-Q6-3AC1**
				QS-8	**537563**	**VUVB-L-M32C-AZD-Q8-3AC1**
	–	Normally open, external pilot air supply, pneumatic spring return	24 V DC	QS-6	**537478**	**VUVB-L-M32U-AZD-Q6-1C1**
				QS-8	**537479**	**VUVB-L-M32U-AZD-Q8-1C1**
			110 V AC	QS-6	**537556**	**VUVB-L-M32U-AZD-Q6-2AC1**
				QS-8	**537557**	**VUVB-L-M32U-AZD-Q8-2AC1**
			230 V AC	QS-6	**537564**	**VUVB-L-M32U-AZD-Q6-3AC1**
				QS-8	**537565**	**VUVB-L-M32U-AZD-Q8-3AC1**
4/2-way valves						
	–	Single solenoid, internal pilot air supply, pneumatic spring return	24 V DC	QS-6	**537472**	**VUVB-L-M42-AD-Q6-1C1**
				QS-8	**537473**	**VUVB-L-M42-AD-Q8-1C1**
			110 V AC	QS-6	**537542**	**VUVB-L-M42-AD-Q6-2AC1**
				QS-8	**537543**	**VUVB-L-M42-AD-Q8-2AC1**
			230 V AC	QS-6	**537550**	**VUVB-L-M42-AD-Q6-3AC1**
				QS-8	**537551**	**VUVB-L-M42-AD-Q8-3AC1**
	–	Single solenoid, external pilot air supply, pneumatic spring return	24 V DC	QS-6	**537480**	**VUVB-L-M42-AZD-Q6-1C1**
				QS-8	**537481**	**VUVB-L-M42-AZD-Q8-1C1**
			110 V AC	QS-6	**537558**	**VUVB-L-M42-AZD-Q6-2AC1**
				QS-8	**537559**	**VUVB-L-M42-AZD-Q8-2AC1**
			230 V AC	QS-6	**537566**	**VUVB-L-M42-AZD-Q6-3AC1**
				QS-8	**537567**	**VUVB-L-M42-AZD-Q8-3AC1**
	–	Double solenoid, internal pilot air supply	24 V DC	QS-6	**537474**	**VUVB-L-B42-D-Q6-1C1**
				QS-8	**537475**	**VUVB-L-B42-D-Q8-1C1**
			110 V AC	QS-6	**537544**	**VUVB-L-B42-D-Q6-2AC1**
				QS-8	**537545**	**VUVB-L-B42-D-Q8-2AC1**
			230 V AC	QS-6	**537552**	**VUVB-L-B42-D-Q6-3AC1**
				QS-8	**537553**	**VUVB-L-B42-D-Q8-3AC1**
	–	Double solenoid, external pilot air supply	24 V DC	QS-6	**537482**	**VUVB-L-B42-ZD-Q6-1C1**
				QS-8	**537483**	**VUVB-L-B42-ZD-Q8-1C1**
			110 V AC	QS-6	**537560**	**VUVB-L-B42-ZD-Q6-2AC1**
				QS-8	**537561**	**VUVB-L-B42-ZD-Q8-2AC1**
			230 V AC	QS-6	**537568**	**VUVB-L-B42-ZD-Q6-3AC1**
				QS-8	**537569**	**VUVB-L-B42-ZD-Q8-3AC1**

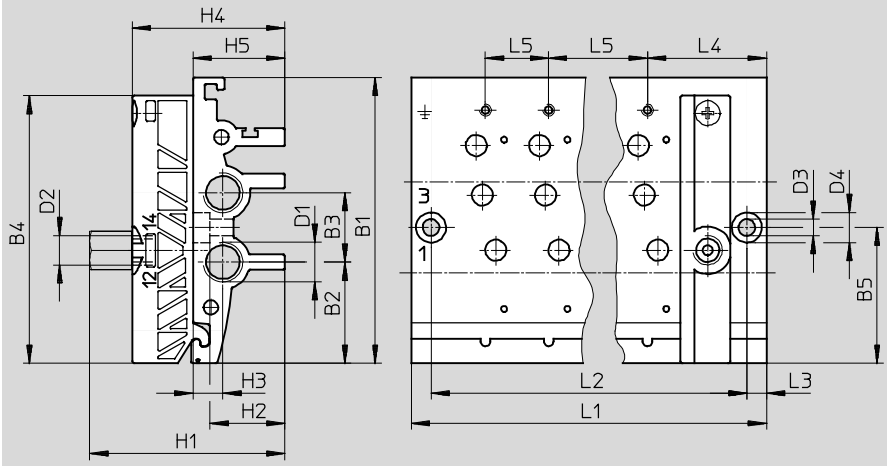
Ordering data – Semi in-line valves for sub-base or manifold rail						
Circuit symbol	Code	Description	Voltage	Pneumatic connection	Part No.	Type
3/2-way valves						
	K	Normally closed, pilot air supply[1)], pneumatic spring return	24 V DC	QS-4	**537484**	**VUVB-S-M32C-AZD-Q4-1C1**
				QS-6	**537485**	**VUVB-S-M32C-AZD-Q6-1C1**
				QS-8	**537486**	**VUVB-S-M32C-AZD-Q8-1C1**
				QS-10	**537487**	**VUVB-S-M32C-AZD-Q10-1C1**
				Without push-in connector	**573993**	**VUVB-S-M32C-AZD-QX-1C1**
			110 V AC	QS-4	**537570**	**VUVB-S-M32C-AZD-Q4-2AC1**
				QS-6	**537571**	**VUVB-S-M32C-AZD-Q6-2AC1**
				QS-8	**537572**	**VUVB-S-M32C-AZD-Q8-2AC1**
				QS-10	**537573**	**VUVB-S-M32C-AZD-Q10-2AC1**
				Without push-in connector	**573995**	**VUVB-S-M32C-AZD-QX-2AC1**
			230 V AC	QS-4	**537586**	**VUVB-S-M32C-AZD-Q4-3AC1**
				QS-6	**537587**	**VUVB-S-M32C-AZD-Q6-3AC1**
				QS-8	**537588**	**VUVB-S-M32C-AZD-Q8-3AC1**
				QS-10	**537589**	**VUVB-S-M32C-AZD-Q10-3AC1**
				Without push-in connector	**573997**	**VUVB-S-M32C-AZD-QX-3AC1**
			12 V DC/ 24 V AC	Without push-in connector	**573999**	**VUVB-S-M32C-AZD-QX-5WC1**
	N	Normally open, pneumatic spring return	24 V DC	QS-4	**537488**	**VUVB-S-M32U-AZD-Q4-1C1**
				QS-6	**537489**	**VUVB-S-M32U-AZD-Q6-1C1**
				QS-8	**537490**	**VUVB-S-M32U-AZD-Q8-1C1**
				QS-10	**537491**	**VUVB-S-M32U-AZD-Q10-1C1**
				Without push-in connector	**573994**	**VUVB-S-M32U-AZD-QX-1C1**
			110 V AC	QS-4	**537574**	**VUVB-S-M32U-AZD-Q4-2AC1**
				QS-6	**537575**	**VUVB-S-M32U-AZD-Q6-2AC1**
				QS-8	**537576**	**VUVB-S-M32U-AZD-Q8-2AC1**
				QS-10	**537577**	**VUVB-S-M32U-AZD-Q10-2AC1**
				Without push-in connector	**573996**	**VUVB-S-M32U-AZD-QX-2AC1**
			230 V AC	QS-4	**537590**	**VUVB-S-M32U-AZD-Q4-3AC1**
				QS-6	**537591**	**VUVB-S-M32U-AZD-Q6-3AC1**
				QS-8	**537592**	**VUVB-S-M32U-AZD-Q8-3AC1**
				QS-10	**537593**	**VUVB-S-M32U-AZD-Q10-3AC1**
				Without push-in connector	**573998**	**VUVB-S-M32U-AZD-QX-3AC1**
			12 V DC/ 24 V AC	Without push-in connector	**574000**	**VUVB-S-M32U-AZD-QX-5WC1**

Ordering data – Semi in-line valves for sub-base or manifold rail						
Circuit symbol	Code	Description	Voltage	Pneumatic connection	Part No.	Type
4/2-way valves						
	M	Single solenoid, pneumatic spring return	24 V DC	QS-4	**537492**	**VUVB-S-M42-AZD-Q4-1C1**
				QS-6	**537493**	**VUVB-S-M42-AZD-Q6-1C1**
				QS-8	**537494**	**VUVB-S-M42-AZD-Q8-1C1**
				QS-10	**537495**	**VUVB-S-M42-AZD-Q10-1C1**
				Without push-in connector	**537534**	**VUVB-S-M42-AZD-QX-1C1**
			110 V AC	QS-4	**537578**	**VUVB-S-M42-AZD-Q4-2AC1**
				QS-6	**537579**	**VUVB-S-M42-AZD-Q6-2AC1**
				QS-8	**537580**	**VUVB-S-M42-AZD-Q8-2AC1**
				QS-10	**537581**	**VUVB-S-M42-AZD-Q10-2AC1**
				Without push-in connector	**537632**	**VUVB-S-M42-AZD-QX-2AC1**
			230 V AC	QS-4	**537594**	**VUVB-S-M42-AZD-Q4-3AC1**
				QS-6	**537595**	**VUVB-S-M42-AZD-Q6-3AC1**
				QS-8	**537596**	**VUVB-S-M42-AZD-Q8-3AC1**
				QS-10	**537597**	**VUVB-S-M42-AZD-Q10-3AC1**
				Without push-in connector	**537636**	**VUVB-S-M42-AZD-QX-3AC1**
			12 V DC/ 24 V AC	Without push-in connector	**545376**	**VUVB-S-M42-AZD-QX-5WC1**
4/2-way valves						
	J	Double solenoid	24 V DC	QS-4	**537496**	**VUVB-S-B42-ZD-Q4-1C1**
				QS-6	**537497**	**VUVB-S-B42-ZD-Q6-1C1**
				QS-8	**537498**	**VUVB-S-B42-ZD-Q8-1C1**
				QS-10	**537499**	**VUVB-S-B42-ZD-Q10-1C1**
				Without push-in connector	**537535**	**VUVB-S-B42-ZD-QX-1C1**
			110 V AC	QS-4	**537582**	**VUVB-S-B42-ZD-Q4-2AC1**
				QS-6	**537583**	**VUVB-S-B42-ZD-Q6-2AC1**
				QS-8	**537584**	**VUVB-S-B42-ZD-Q8-2AC1**
				QS-10	**537585**	**VUVB-S-B42-ZD-Q10-2AC1**
				Without push-in connector	**537633**	**VUVB-S-B42-ZD-QX-2AC1**
			230 V AC	QS-4	**537598**	**VUVB-S-B42-ZD-Q4-3AC1**
				QS-6	**537599**	**VUVB-S-B42-ZD-Q6-3AC1**
				QS-8	**537600**	**VUVB-S-B42-ZD-Q8-3AC1**
				QS-10	**537601**	**VUVB-S-B42-ZD-Q10-3AC1**
				Without push-in connector	**537637**	**VUVB-S-B42-ZD-QX-3AC1**
			12 V DC/ 24 V AC	Without push-in connector	**545377**	**VUVB-S-B42-ZD-QX-5WC1**

Manifold rail G¼ VABM

Material:
Wrought aluminium alloy

Dimensions Download CAD data ➔ **www.festo.com**



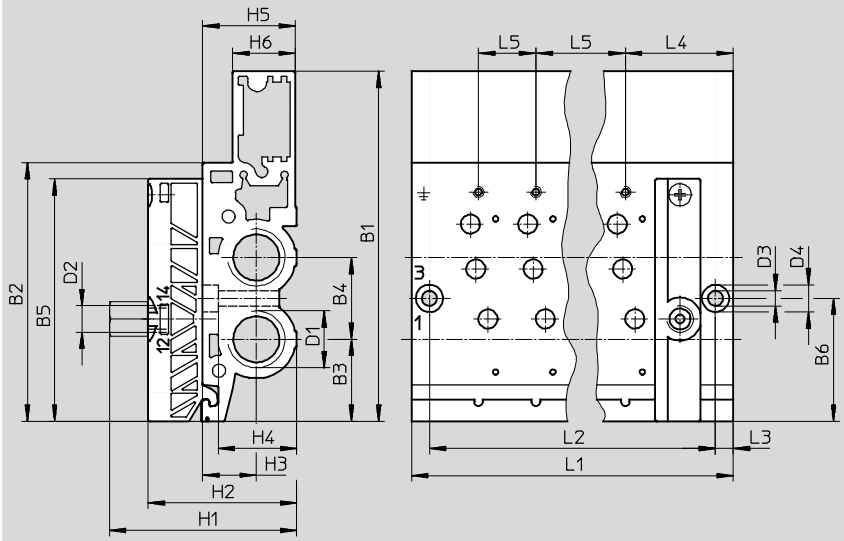
Dimensions and ordering data

Type	L1 ±0.1	L2 ±0.1	L3 ±0.1	L4 ±0.1	L5 ±0.1	B1 ±0.1	B2 ±0.1	B3 ±0.1	B4	B5	D1	D2	D3 H13	D4 H13	H1	H2	H3 ±0.2	H4	H5 ±0.2
VABM-B6-E-G14-2	85	72	6.5	39.5	21	94.7	33.5	23	88.7	45	G¼	G⅛	5.5	10	64.7	24.8	10	50.5	30.5
VABM-B6-E-G14-3	106	93																	
VABM-B6-E-G14-4	127	114																	
VABM-B6-E-G14-5	148	135																	
VABM-B6-E-G14-6	169	156																	
VABM-B6-E-G14-7	190	177																	
VABM-B6-E-G14-8	211	198																	
VABM-B6-E-G14-9	232	219																	
VABM-B6-E-G14-10	253	240																	
VABM-B6-E-G14-11	274	219																	
VABM-B6-E-G14-12	295	282																	

Manifold rail G½ VABM

Material:
Wrought aluminium alloy

Dimensions Download CAD data ➔ **www.festo.com**

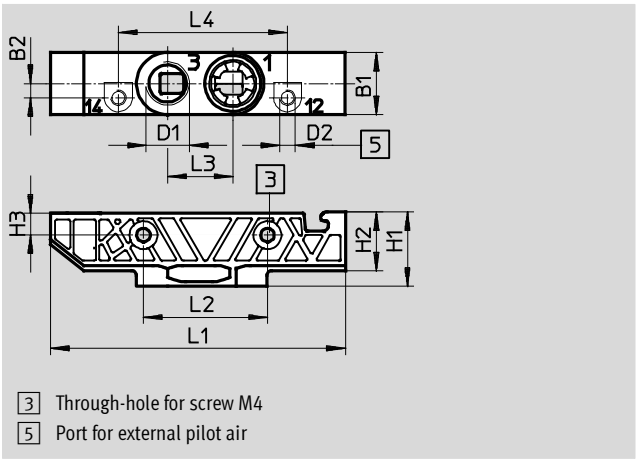


Dimensions and ordering data

Type	L1 ±0.1	L2 ±0.1	L3 ±0.1	L4 ±0.1	L5 ±0.1	B1 ±0.1	B2 ±0.1	B3 ±0.1	B4	B5	B6	D1	D2	D3 H13	D4 H13	H1	H2	H3 ±0.2	H4	H5 ±0.2	H6
VABM-B6-E-G12-2	85	72	6.5	39.5	21	128.25	94.7	30	30	88.7	45	G½	G⅛	5.5	10	68.7	54.5	19.7	28.8	34	23
VABM-B6-E-G12-3	106	93																			
VABM-B6-E-G12-4	127	114																			
VABM-B6-E-G12-5	148	135																			
VABM-B6-E-G12-6	169	156																			
VABM-B6-E-G12-7	190	177																			
VABM-B6-E-G12-8	211	198																			
VABM-B6-E-G12-9	232	219																			
VABM-B6-E-G12-10	253	240																			
VABM-B6-E-G12-11	274	219																			
VABM-B6-E-G12-12	295	282																			

Sub-base VABS

Material:
Reinforced polyamide



3 Through-hole for screw M4
5 Port for external pilot air

Type	D1	D2	B1	B2	H1	H2	H3	L1	L2	L3	L4
VABS-B6-PB-Q	G¼	M5	20	4.6	23.5	18.5	7	95	40	21	54.55

Ordering data						
Valve positions	Description	Compressed air supply connection	Weight [g]	CRC	Part No.	Type
1	Internal pilot air supply	Cartridge	22	2[1)]	**537518**	**VABS-B6-PB-Q-B**
1	External pilot air supply	Cartridge	22	2[1)]	**537519**	**VABS-B6-PB-Q**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Overview – Valve terminal VTUB

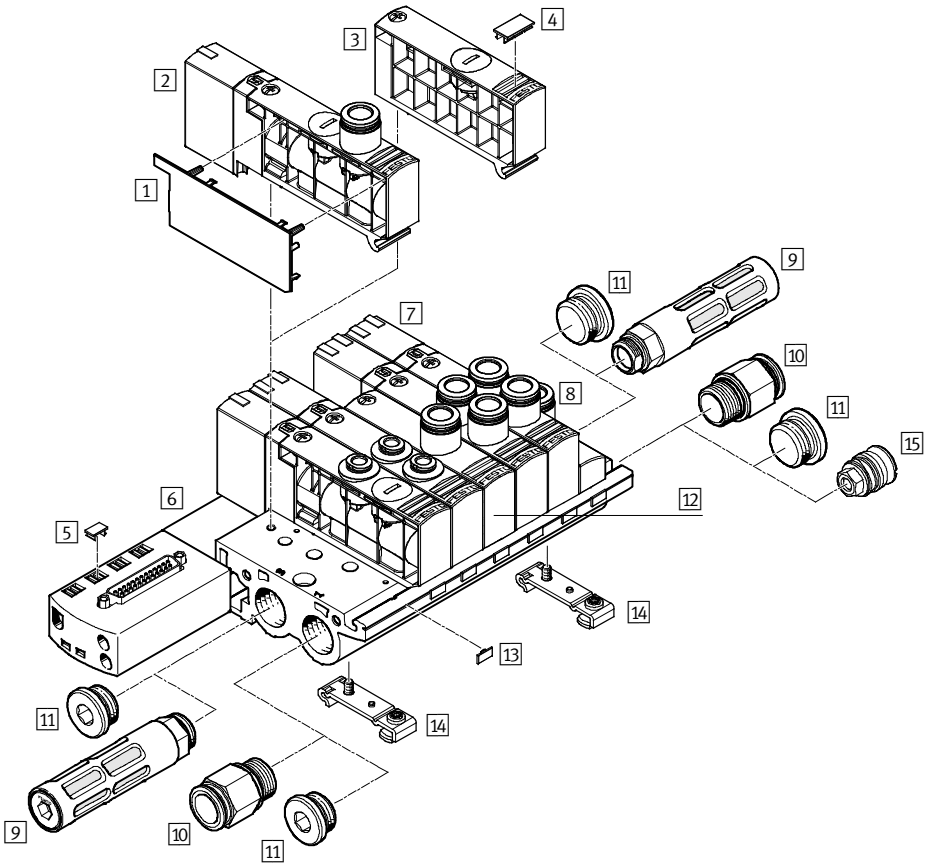
Valve terminal with electrical multi-pin plug connection

- 25-pin Sub-D multi-pin plug connection
  Code: SD

Valve terminals with electrical multi-pin plug connection are available in gradations from 2 to max. 16 valve positions.

Each valve position can either be equipped with a valve or a blanking plate.

A maximum of 24 solenoid coils can be actuated via the electrical multi-pin plug connection.



- Note

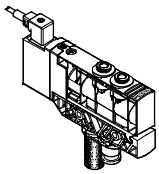
Valve terminals are available for 4, 6, 8, 10, 12 and 16 valve positions in connection size G1/2. On the version with 16 valve positions, only single solenoid valves can be mounted from the ninth valve position onwards.

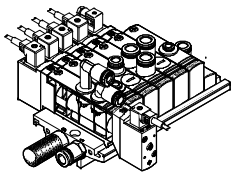
Accessories			
		Brief description	**➔ Page/Internet**
1	Cover for valve housing VAMC	–	46
2	Single solenoid valve VUVB-...-M	–	35
3	Blanking plate VABB	Blanking plate VABB: for vacant position, with blanking plug	44
4	Inscription label IBS-9x17	For identifying the valves	49
5	Inscription label IBS-6x10	–	49
6	Manifold rail VABM-B6-E-G...-6-M1	With multi-pin plug connection, for connecting max. 16 valves	41
7	Double solenoid valve VUVB-...-B	–	35
8	Pilot air supply module	For pilot air supply (included in the scope of delivery of the manifold rail VABM)	–
9	Silencer U, UC	For fitting in exhaust ports	49
10	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	48
11	Blanking plug B	–	49
12	Pressure zone supply module VABF	Pressure zone supply module VABF: with cartridge	43
13	Inscription label MH-BZ-80X	For identifying the manifold rail	49
14	H-rail mounting kit VAME	For mounting on the H-rail NRH-35-2000	49
15	Separator for pressure zones VABD	For mounting in the manifold rail	44

Valve terminals VTUB

Key features

Individual connection



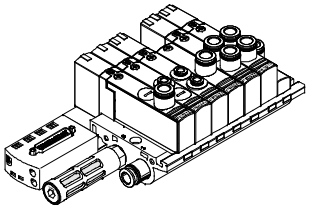


Connection is independent of the control technology used and is flexible thanks to pre-assembled cables.
There are two different valve types; in-line valves and semi in-line valves for manifold rails or individual sub-bases.
Between 2 ... 32 solenoid coils (divided between 2 ... 16 valve positions) can be selected with individual connection.

Valves can be used on individual sub-bases for actuators further away from the valve terminal.
With an individual electrical connection, the plug is connected directly to the valve. A number of plug sockets/ plug sockets with cable can be selected for the valve terminal and for the individual sub-base:

- KMEB-1-...-LED with signal status display
- KMEB-1-230AC-... can be used up to 230 V AC
- MSSD-EB for self-assembly
- KMEB-2-24-... with signal status display
- Illuminating seal MEB-LD for signal status display

Multi-pin plug connection



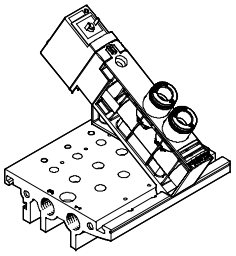
Control signals from the controller to the valve terminal are transmitted via a pre-assembled multi-core cable, which substantially reduces installation time.

This valve terminal can be equipped with 4 ... 16 valves.

Versions
- Sub-D connection

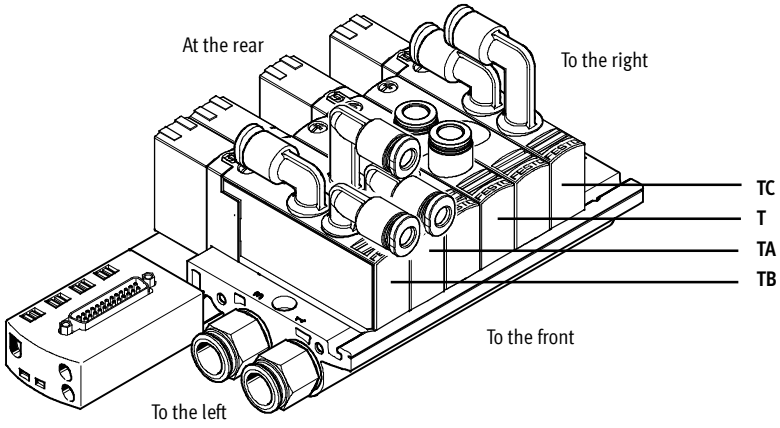
Double solenoid drive with multi-pin plug connection. The valve is equipped with an LED for signal status display.

Wide range of pneumatic components



- Using the same basic valves for both the individual valves and the valve manifold permits fast and flexible conversion and multiple use of parts.
- Flexible construction thanks to assembled and tested units or single components as modules for individual configurations.
- Flow rates from 200 ... 1,000 l/min depending on the respective application through the selection of appropriate QS connections.

Connection to the valve



Connection positions on the valve:
- T (on top, inline)
- TA (on top, angled outlet to the front)
- TB (on top, angled outlet to the front/rear)
- TC (on top, angled outlet to the rear)

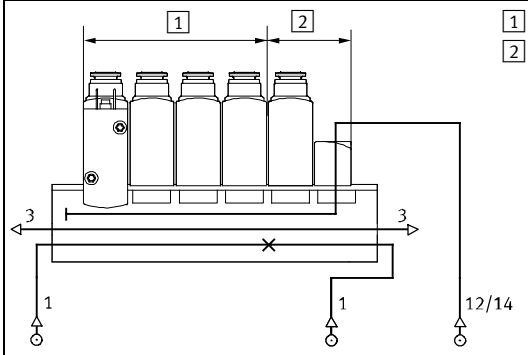
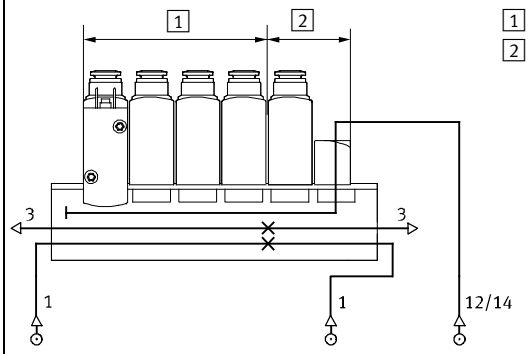
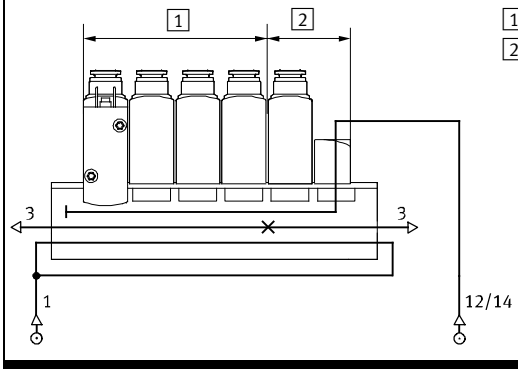
Connection sizes for connection position T:
- Push-in connector 4 mm (code P4)
- Push-in connector 6 mm (code P6)
- Push-in connector 8 mm (code P8)
- Push-in connector 10 mm (code P10)

Connection sizes for connection position TB/TA/TC:
- Push-in connector 4 mm (code P4)
- Push-in connector 6 mm (code P6)
- Push-in connector 8 mm (code P8)

Instructions for using pressure zones

The valve terminal VTUB can be operated with 2 pressure zones, supplied either from the left or from the right. Pressure zones are created by means of separators that can be used in the following ducts:
- Supply duct 1 (code TP)
- Supply duct 1 and exhaust duct 3 (code TS) or
- Supply duct 1 or exhaust duct 3 (code TR)

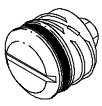
Duct separation

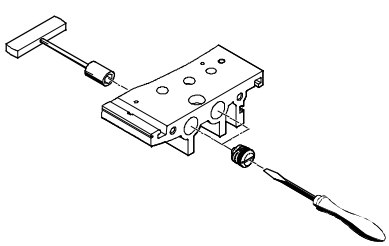
	Code	Description
 1 Pressure zone 1 2 Pressure zone 2	TP	Duct 1 closed
 1 Pressure zone 1 2 Pressure zone 2	TS	Duct 1/3 closed
 1 Pressure zone 1 2 Pressure zone 2	TR	Duct 3 closed

Separator VABD-B6

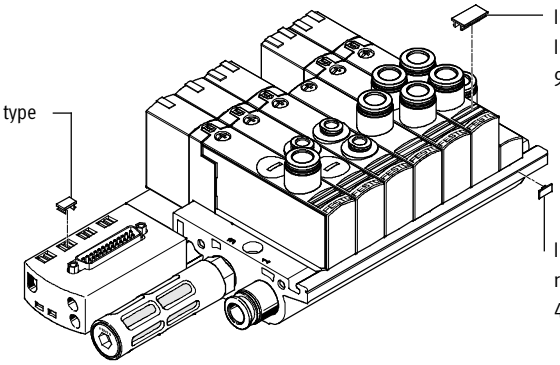
- Note

The separator can also be fitted subsequently using a screwdriver/ socket spanner.





Identification system



Inscription labels can be applied to the valves and manifold rails to identify them.

- Inscription labels for valve type IBS-9x17
  Part No. 161937
- Inscription labels for manifold rail type MH-BZ-80X
  Part No. 197259

Display and operation

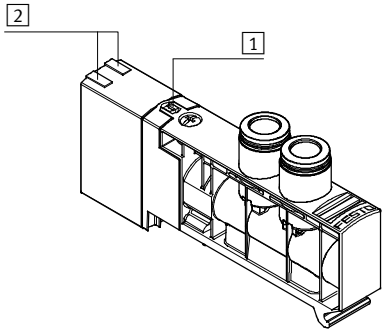
Each solenoid coil can be allocated an LED which indicates its signal status. Suitable plug sockets with cable can be found on page 50. On the multi-pin variant the LED is integrated in the valve.

The manual override (MO) enables the valve to be activated without electronic control or power supply.

The valve is switched by pushing the manual override. The set switching status can be secured by rotating the manual override.

- Note

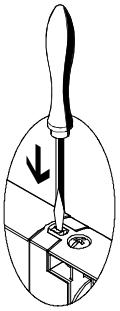
A manually actuated valve (manual override) cannot be reset electrically. Conversely, an electrically actuated valve cannot be reset using the mechanical manual override.



1 Optional manual override (non-detenting and turning with detent using a screwdriver)
2 LED signal status display per solenoid coil

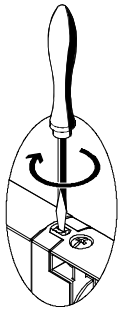
Manual override (MO)

MO with automatic return (non-detenting)



Press in the stem of the MO with a pointed object or screwdriver.
⇢ Valve is in switching position
Remove the pointed object or screwdriver.
Spring force pushes the stem of the MO back.
⇢ Valve returns to normal position.

MO with detent (turning with detent)[1)]



Press in the stem of the MO using a pointed object or screwdriver until the valve switches and then turn the stem clockwise by 90° until the stop is reached.
⇢ Valve remains in switching position
Turn the stem anti-clockwise by 90° until the stop is reached and then remove the pointed object or screwdriver.
Spring force pushes the stem of the MO back.
⇢ Valve returns to normal position.

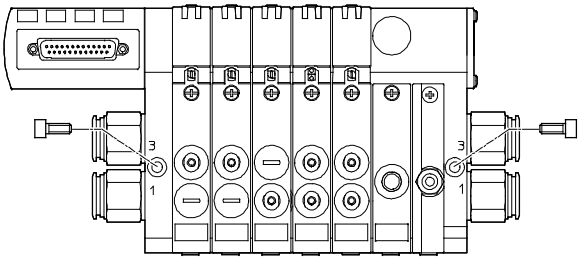
1) Not with double solenoid valve code J for electrical multi-pin plug connection (double solenoid valve)

Mounting – Valve terminal

Sturdy terminal mounting thanks to:

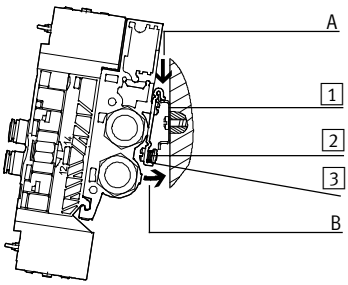
- Two through-holes for wall mounting
- Integrated attachment for H-rail mounting

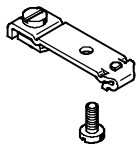
Wall mounting



The valve terminal VTUB is screwed onto the mounting surface using two M5 screws.

H-rail mounting





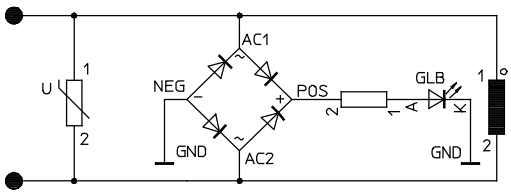
The valve terminal VTUB is hooked onto the H-rail (see arrow A).
The valve terminal VTUB is then swivelled on the H-rail and secured in place with the clamping component (see arrow B).

1 H-rail
2 Self-tapping M4x8 screw of the H-rail clamping unit
3 Clamping component of the H-rail clamping unit

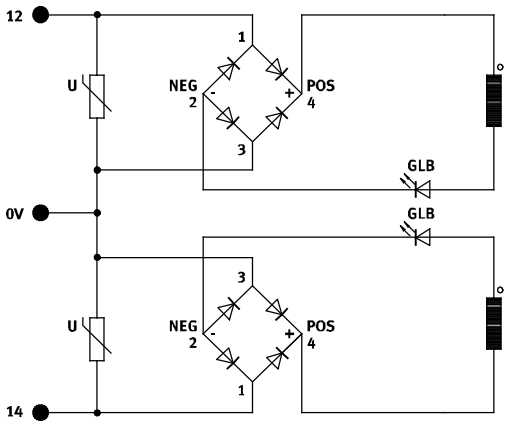
For H-rail mounting of the valve terminal you will need the mounting kit VAME-B6-T. This permits mounting of the valve terminal on an H-rail to EN 60715.

Protective circuits for plug-in valves for multi-pin terminals

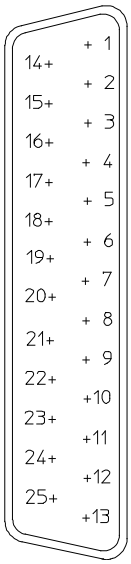
24 V DC version for single solenoid valve



24 V DC version for double solenoid valve



Pin allocation – Sub-D plug



- ⋮ - Note

The drawing shows the view onto the pins of the Sub-D plug.

	Connecting cable, 25-wire			Connecting cable, 15-wire		
	Pin	Address/coil	Wire colour[1)]	Pin	Address/coil	Wire colour[1)]
	1	0	WH	1	0	WH
	2	1	BN	2	1	BN
	3	2	GN	3	2	GN
	4	3	YE	4	3	YE
	5	4	GY	5	4	GY
	6	5	PK	6	5	PK
	7	6	BU	7	6	BU
	8	7	RD	8	7	RD
	9	8	BK	9	8	BK
	10	9	VT	10	9	VT
	11	10	GY PK	11	10	GY PK
	12	11	RD BU	12	11	RD BU
	13	12	GN WH	13	–	–
	14	13	BN GN	14	–	–
	15	14	YE WH	15	–	–
	16	15	BN YE	16	–	–
	17	16	GY WH	17	–	–
	18	17	BN GY	18	–	–
	19	18	WH PK	19	–	–
	20	19	BN PK	20	–	–
	21	20	BU WH	21	–	–
	22	21	BN BU	22	–	–
	23	22	RD WH	23	–	WH GN
	24	23	BN RD	24	–	BN GN
	25	0 V	BK WH	25	0 V	WH YE

1) To IEC 757

Equipment

Operate system equipment with unlubricated compressed air if possible. Festo valves and cylinders are designed so that, if used as designated, they will not require additional lubrication and will still achieve a long service life.
The quality of compressed air downstream of the compressor must correspond to that of unlubricated compressed air. If possible, do not operate all of your system equipment with lubricated compressed air. The lubricators should, where possible, always be installed directly upstream of the actuator used.

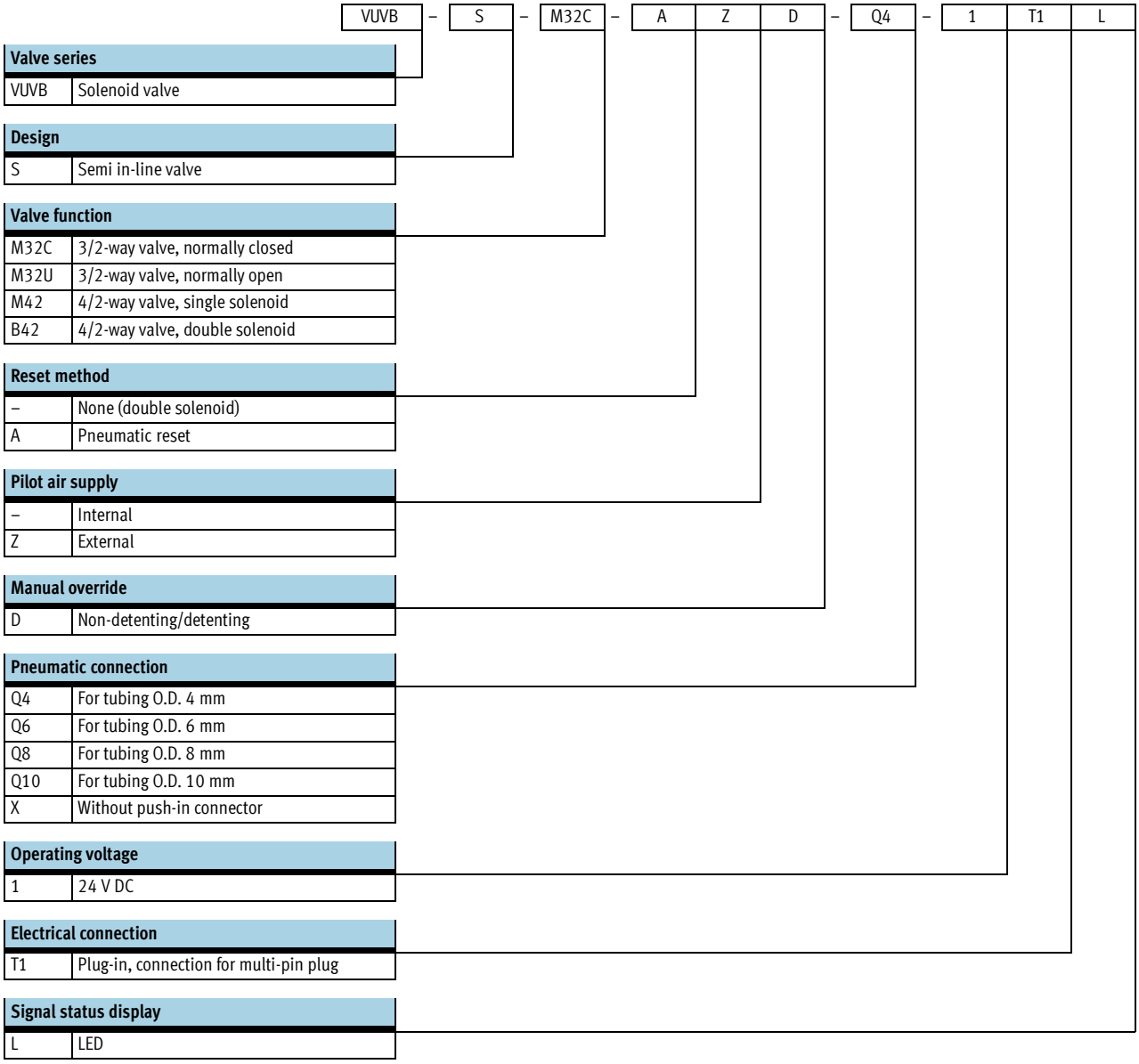
Incorrect additional oil and too high an oil content in the compressed air reduce the service life of the valve terminal.
Use Festo special oil OFSW-32 or the alternatives listed in the Festo catalogue (as specified in DIN 51524 HLP32; basic oil viscosity 32 CST at 40 °C).

Bio-oils
When using bio-oils (oils which are based on synthetic or native ester, e.g. rapeseed oil methyl ester), the maximum residual oil content of 0.1 mg/m^3 must not be exceeded (see ISO 8573-1 Class 2).

Mineral oils
When using mineral oils (e.g. HLP oils to DIN 51524, parts 1 to 3) or similar oils based on poly-alpha-olefins (PAO), the maximum residual oil content of 5 mg/m^3 must not be exceeded (see ISO 8573-1 Class 4).
A higher residual oil content irrespective of the compressor oil cannot be permitted, as the basic lubricant would be flushed out over time.

Valve terminals VTUB

Type codes – Terminal valves



Valve series	
VUVB	Solenoid valve

Design	
S	Semi in-line valve

Valve function	
M32C	3/2-way valve, normally closed
M32U	3/2-way valve, normally open
M42	4/2-way valve, single solenoid
B42	4/2-way valve, double solenoid

Reset method	
–	None (double solenoid)
A	Pneumatic reset

Pilot air supply	
–	Internal
Z	External

Manual override	
D	Non-detenting/detenting

Pneumatic connection	
Q4	For tubing O.D. 4 mm
Q6	For tubing O.D. 6 mm
Q8	For tubing O.D. 8 mm
Q10	For tubing O.D. 10 mm
X	Without push-in connector

Operating voltage	
1	24 V DC

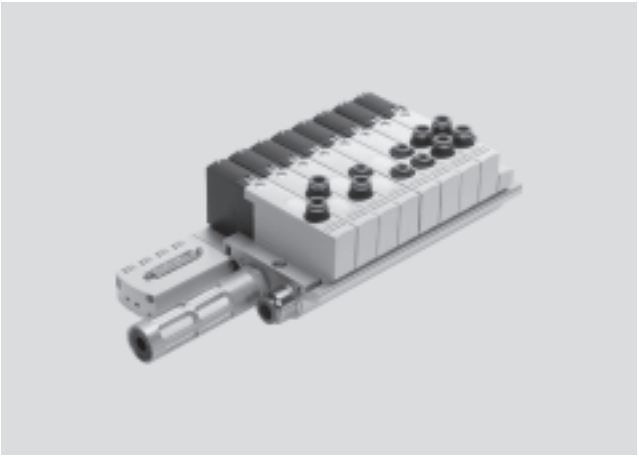
Electrical connection	
T1	Plug-in, connection for multi-pin plug

Signal status display	
L	LED

Voltage
24 V DC

Pressure
–0.9 ... +8 bar

Temperature range
–5 ... +50 °C



General technical data				
Valve function		3/2-way, single solenoid	4/2-way, single solenoid	4/2-way, double solenoid
Design		Piston spool valve		
Sealing principle		Soft		
Actuation type		Electric		
Reset method		Pneumatic spring		–
Type of control		Piloted		
Pilot air supply		Internal or external		
Direction of flow		Non-reversible		
Exhaust function		No flow control		
Manual override		Non-detenting, detenting		Non-detenting
Type of mounting		Via through-hole		
Mounting position		Any		
Width	[mm]	20		
Nominal size	[mm]	7		
Pneumatic connections				
Supply port	1	G½ (sub-base)		
Exhaust port	3	G½ (sub-base)		
Working lines	2/4	QS-4, QS-6, QS-8, QS-10		
External pilot air connection	12/14	M5 (sub-base)		
Standard nominal flow rate qnN	[l/min]	200 (QS-4); 500 (QS-6); 800 (QS-8); 1,000 (QS-10)		

Operating and environmental conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[bar]	–0.9 ... +8
Operating pressure for valve terminal with internal pilot air supply	[bar]	2 ... 8
Pilot pressure	[bar]	2 ... 8
Ambient temperature	[°C]	–5 ... +50
Temperature of medium	[°C]	–5 ... +50
Storage temperature[1)]	[°C]	–20 ... +40
Note on materials		RoHS-compliant
CE mark		To EU EMC Directive

1) Long-term storage

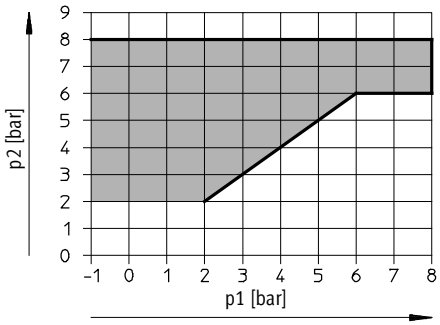
Note

A filter must be installed upstream of valves operated in vacuum mode. This prevents any foreign matter in the intake air getting into the valve (e.g. when operating a suction cup).

Electrical data				
Valve function		3/2-way, single solenoid	4/2-way, single solenoid	4/2-way, double solenoid
Electrical connection		Socket for multi-pin plug		
Nominal operating voltage	[V DC]	24		
Permissible voltage fluctuations		±10%		
Electrical power consumption	[W]	1.5	1.5	3.3 (following a current reduction 0.1)
Protection class to EN 60529		IP65		

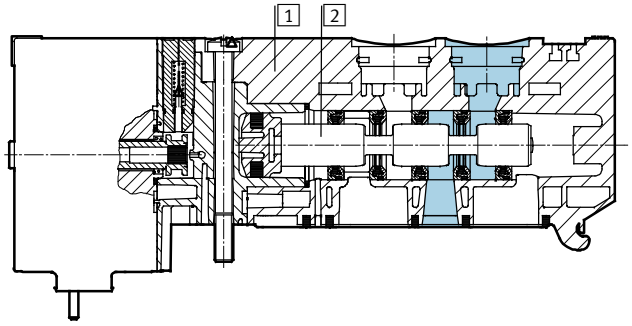
Valve switching times [ms]			
Valve function	3/2-way, single solenoid	4/2-way, single solenoid	4/2-way, double solenoid
On	20	20	–
Off	20	20	–
Changeover	–	–	20

Pilot pressure p2 as a function of working pressure p1

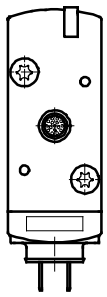


Materials – Valves

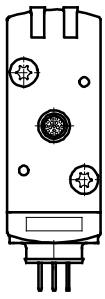
Sectional view



Single solenoid



Double solenoid



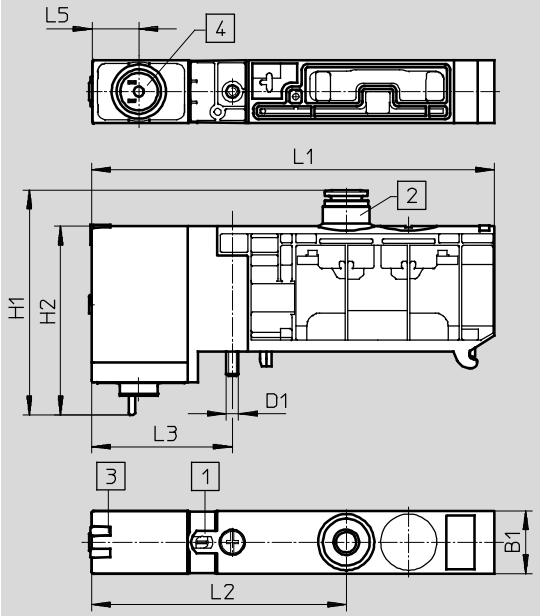
1	Housing	Reinforced polyamide
2	Piston spool	Wrought aluminium alloy
–	Seals	Nitrile rubber, hydrogenated nitrile rubber, fluoro elastomer

Materials	
Manifold rail with multi-pin plug	Wrought aluminium alloy
Pressure zone supply module	Reinforced polyamide
Blanking plate for vacant position	Reinforced polyamide

Product weight	
Approx. weight [g]	
Manifold rail with multi-pin plug	
• 4 valve positions	690
• 6 valve positions	915
• 8 valve positions	1,150
• 10 valve positions	1,380
• 12 valve positions	1,620
• 16 valve positions	2,100
Pressure zone supply module	30
Valves	
• Single solenoid (code K, N, M)	150
• Double solenoid (code J)	220
Blanking plate for vacant position	25

Dimensions – 3/2-way and 4/2-way valve, single solenoid Download CAD data ➔ **www.festo.com**

For electrical multi-pin plug

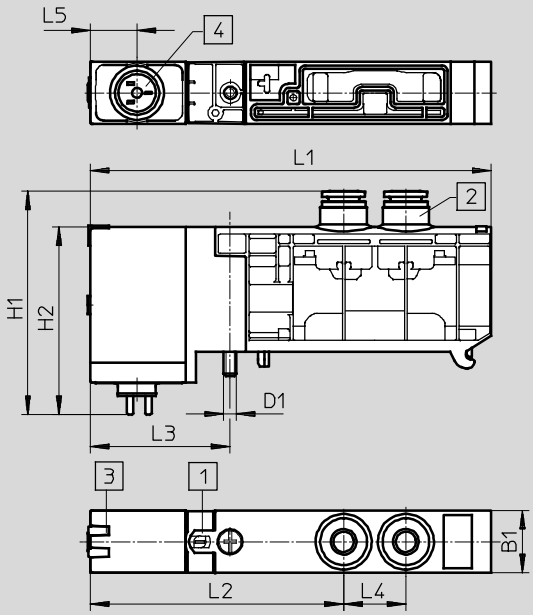


1 Manual override
2 Fitting QS
3 LED display
4 Plug for electrical interlinking

Type	B1	D1	H1	H2	L1	L2	L3	L5
VUVB-S-M32--QS4	20	M4	57	60.3	128.95	81.5	45	15
VUVB-S-M32--QS6			60					
VUVB-S-M32--QS8			63					
VUVB-S-M32--QS10			65					

Dimensions – 4/2-way valve, double solenoid Download CAD data ➔ **www.festo.com**

For electrical multi-pin plug

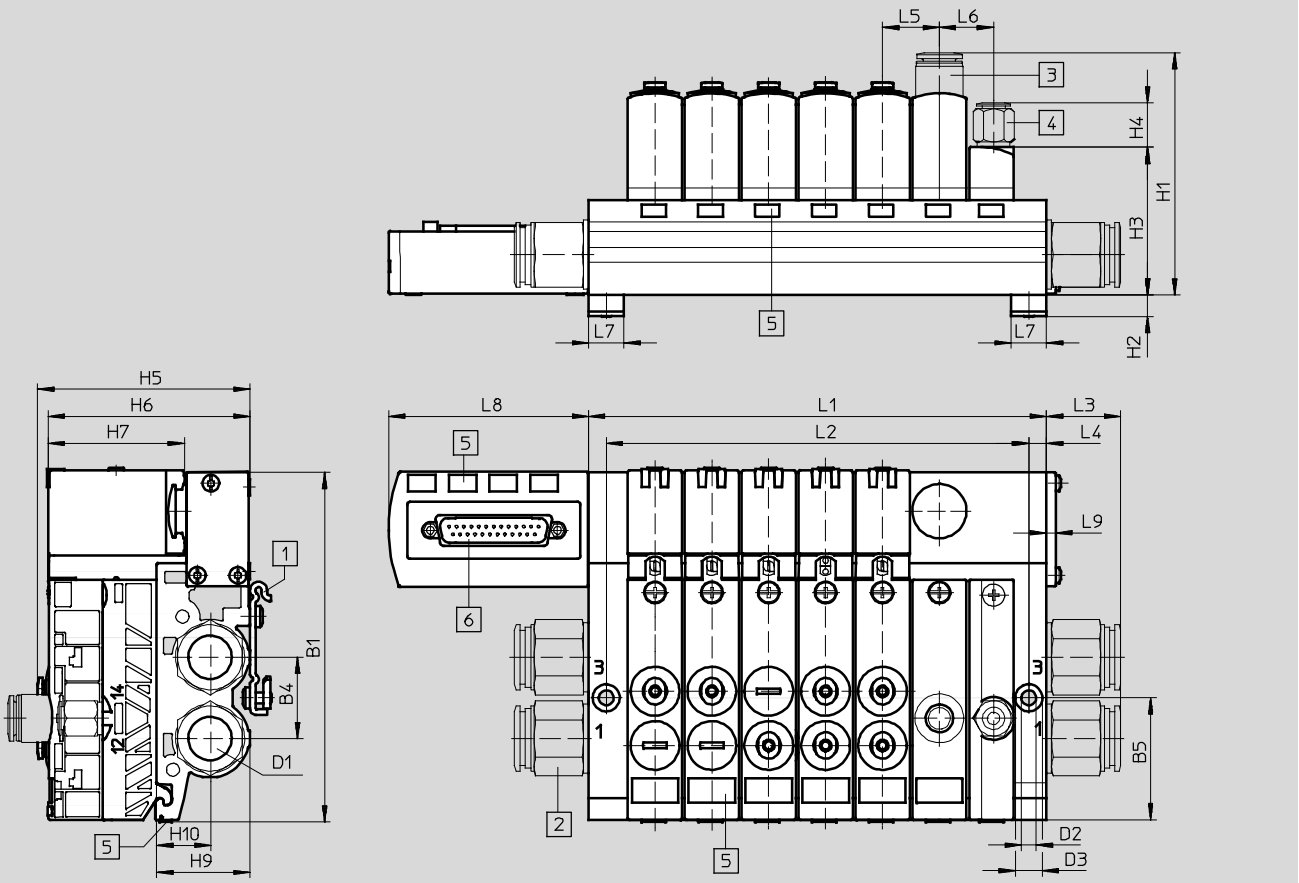


1 Manual override
2 Fitting QS
3 LED display
4 Plug for electrical interlinking

Type	B1	D1	H1	H2	L1	L2	L3	L4	L5
VUVB-S-B42--QS4	20	M4	57	60.3	128.95	81.5	45	20	15
VUVB-S-B42--QS6			60						
VUVB-S-B42--QS8			63						
VUVB-S-B42--QS10			65						

Dimensions – Valve terminal Download CAD data ➔ **www.festo.com**

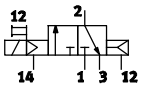
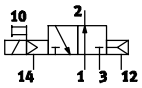
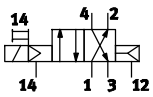
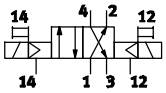
With electrical multi-pin plug



1 Attachment VAME-B6-T (optional) for mounting rail
2 Push-in fittings (optional)
3 Push-in fittings (optional, only with pressure zone supply module; blanking plate only with blanking plug)
4 Push-in fitting (optional, only with S types)
5 Inscription label (optional)
6 Sub-D plug

Type	B1	B4	B5	D1	D2 Ø H13	D3 Ø H13	H1	H2	H3	H4	H6	H7	H9	H10	L1 ± 0.2	L2 ± 0.1	L3	L4	L5	L6	L7	L8	L9
VTUB-4	129.1	30	4	G½	5.5	10	89.4	8	54.5	16.4	74.5	50.1	34.5	19.7	127	114	27.4	6.5	21	20	13	73.8	3.5
VTUB-6															169	156							
VTUB-8															211	198							
VTUB-10															253	240							
VTUB-12															295	282							
VTUB-16															379	366							

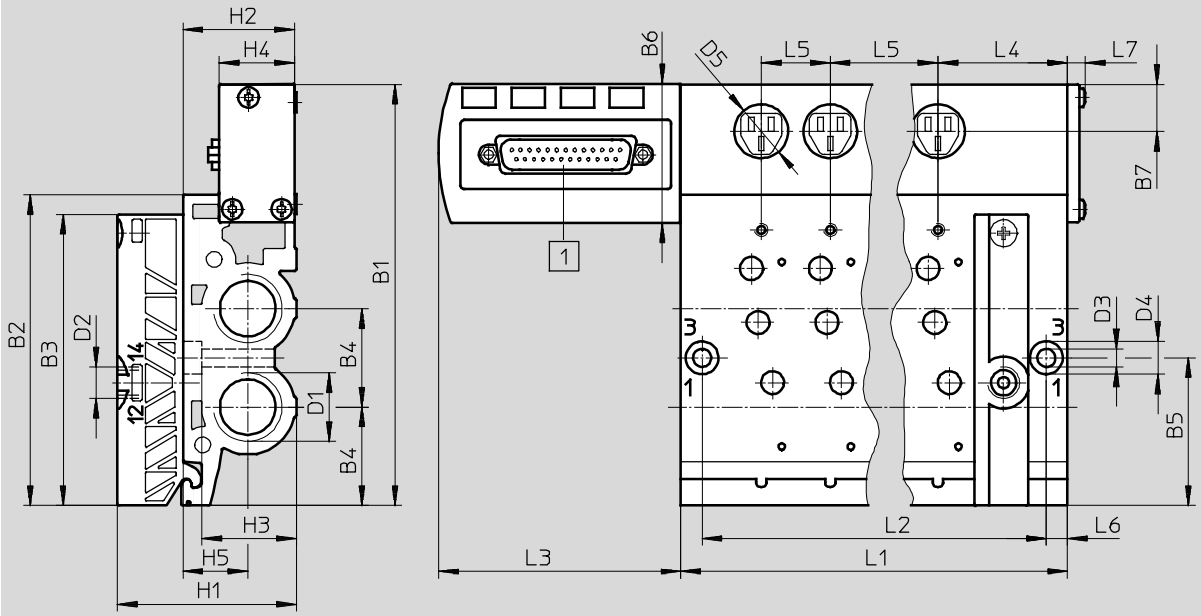
Type	H5
QSPK18-4	78.5
QSPK18-6	78.5
QSPK18-8	86
QSPK18-10	89.4

Ordering data – Valves for valve terminal						
Circuit symbol	Code	Description	Voltage	Pneumatic connection	Part No.	Type
3/2-way valves						
	K	Normally closed, pneumatic spring return	24 V DC	QS-4	**537602**	**VUVB-S-M32C-AZD-Q4-1T1L**
				QS-6	**537603**	**VUVB-S-M32C-AZD-Q6-1T1L**
				QS-8	**537604**	**VUVB-S-M32C-AZD-Q8-1T1L**
				QS-10	**537605**	**VUVB-S-M32C-AZD-Q10-1T1L**
				Without push-in connector	**574001**	**VUVB-S-M32C-AZD-QX-1T1L**
	N	Normally open, pneumatic spring return	24 V DC	QS-4	**537606**	**VUVB-S-M32U-AZD-Q4-1T1L**
				QS-6	**537607**	**VUVB-S-M32U-AZD-Q6-1T1L**
				QS-8	**537608**	**VUVB-S-M32U-AZD-Q8-1T1L**
				QS-10	**537609**	**VUVB-S-M32U-AZD-Q10-1T1L**
				Without push-in connector	**574002**	**VUVB-S-M32U-AZD-QX-1T1L**
4/2-way valves						
	M	Single solenoid, pneumatic spring return	24 V DC	QS-4	**537610**	**VUVB-S-M42-AZD-Q4-1T1L**
				QS-6	**537611**	**VUVB-S-M42-AZD-Q6-1T1L**
				QS-8	**537612**	**VUVB-S-M42-AZD-Q8-1T1L**
				QS-10	**537613**	**VUVB-S-M42-AZD-Q10-1T1L**
				Without push-in connector	**537640**	**VUVB-S-M42-AZD-QX-1T1L**
	J	Double solenoid	24 V DC	QS-4	**537614**	**VUVB-S-B42-ZD-Q4-1T1L**
				QS-6	**537615**	**VUVB-S-B42-ZD-Q6-1T1L**
				QS-8	**537616**	**VUVB-S-B42-ZD-Q8-1T1L**
				QS-10	**537617**	**VUVB-S-B42-ZD-Q10-1T1L**
				Without push-in connector	**537641**	**VUVB-S-B42-ZD-QX-1T1L**

Manifold rail with electrical multi-pin plug
VABM-...-M1

Material:
Wrought aluminium alloy

Dimensions Download CAD data ➔ **www.festo.com**



1 Sub-D plug

Type	B1 ±0.25	B2 ±0.2	B3	B4 ±0.2	B5	B6	B7	D1	D2	D3 Ø H13	D4 Ø H13	D5 Ø	H1	H2 ±0.2	H3	H4	H5 ±0.2
VABM-B6-E-G12-4-M1	128.3	94.7	88.7	30	45	42.2	14.3	G½	G⅛	5.5	10	16.4	54.5	34	28.8	23	19.7
VABM-B6-E-G12-6-M1																	
VABM-B6-E-G12-8-M1																	
VABM-B6-E-G12-10-M1																	
VABM-B6-E-G12-12-M1																	
VABM-B6-E-G12-16-M1																	

Type	L1	L2	L3	L4 ±0.1	L5 ±0.1	L6 ±0.1	L7
VABM-B6-E-G12-4-M1	127	114	73.8	39.5	21	6.5	5.4
VABM-B6-E-G12-6-M1	169	156					
VABM-B6-E-G12-8-M1	211	198					
VABM-B6-E-G12-10-M1	253	240					
VABM-B6-E-G12-12-M1	295	282					
VABM-B6-E-G12-16-M1	379	366					

Dimensions and ordering data			
Weight [g]	CRC	Part No.	Type
690	2[1)]	**537618**	**VABM-B6-E-G12-4-M1**
915	2[1)]	**537619**	**VABM-B6-E-G12-6-M1**
1,150	2[1)]	**537620**	**VABM-B6-E-G12-8-M1**
1,380	2[1)]	**537621**	**VABM-B6-E-G12-10-M1**
1,620	2[1)]	**537622**	**VABM-B6-E-G12-12-M1**
2,100	2[1)]	**550186**	**VABM-B6-E-G12-16-M1**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Cover for valve housing VAMC

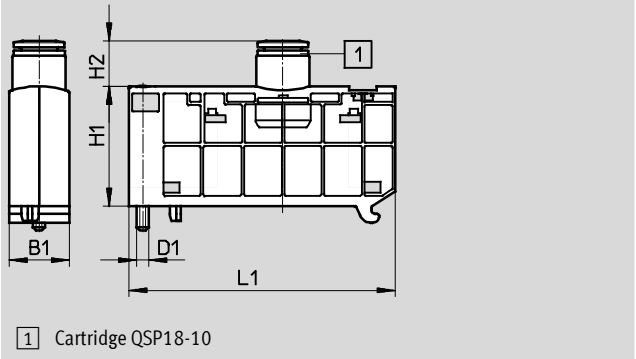
Material:
Polyamide

Ordering data		
CRC	Part No.	Type
2[1)]	**537512**	**VAMC-B6-C**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Pressure zone supply module VABF

Material:
Reinforced polyamide



1 Cartridge QSP18-10

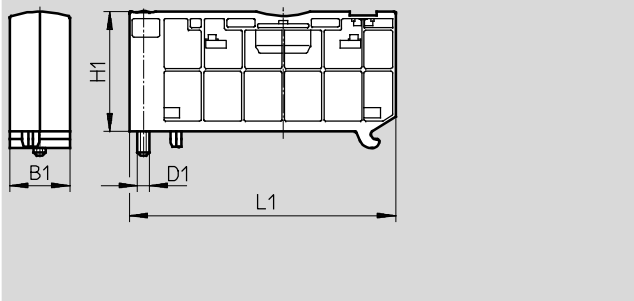
Type	D1	B1	H1	H2	L1
VABF-B6-...	M4	20	40	15	88.5

Ordering data				
		CRC	Part No.	Type
For individual electrical connection	With cartridge QSP18-10	2[1)]	**537517**	**VABF-B6-P1A5-Q10**
For multi-pin plug connection	With cartridge QSP18-10 and cover cap for multi-pin plug connection	2[1)]	**537624**	**VABF-B6-P1A9-Q10**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Blanking plate VABB

Material:
Reinforced polyamide



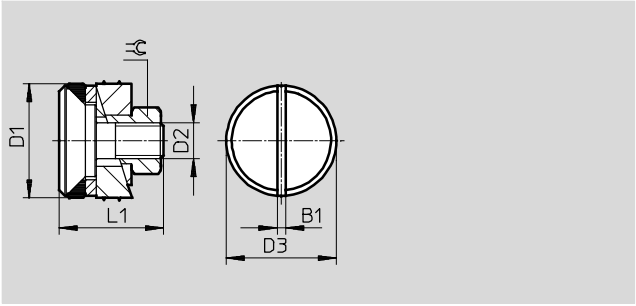
Type	B1	D1	H1	L1
VABB-B-6-E	20	M4	40	88.5

Ordering data				
		CRC	Part No.	Type
For individual electrical connection	–	2[1)]	**537513**	**VABB-B6-E**
For multi-pin plug connection	With cover cap for multi-pin plug connection	2[1)]	**537623**	**VABB-B6-ET**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Separator
for pressure zones
VABD

Material:
Steel



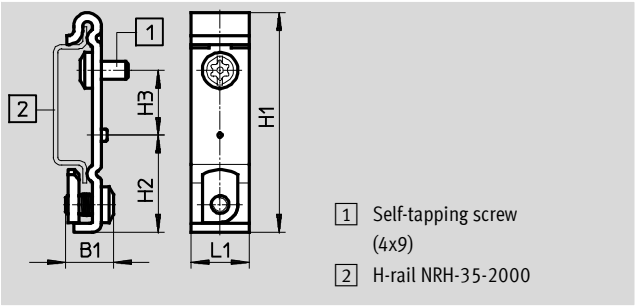
Type	B1	D1 ∅	D2 ∅	D3	L1	⌧
VABD-B6-14-P-C	1.6	11.7	M4	11.3	13.9	7
VABD-B6-12-P-C	1.4	19	M6	18.3	17.3	10

Dimensions and ordering data			
Manifold rail	CRC	Part No.	Type
G¼	2[1)]	**537515**	**VABD-B6-14-P-C**
G½	2[1)]	**537516**	**VABD-B6-12-P-C**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

H-rail mounting kit VAME

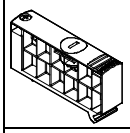
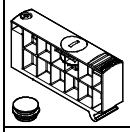
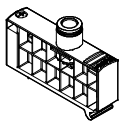
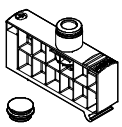
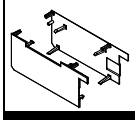
Material:
Steel



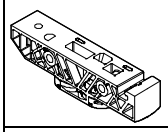
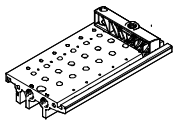
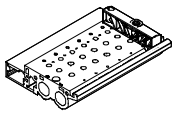
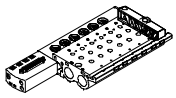
Type	B1	H1	H2	H3	L1
VAME-B6-T	10.7	49.1	21.7	14.5	13

Ordering data		
CRC	Part No.	Type
2[1)]	**537514**	**VAME-B6-T**

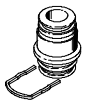
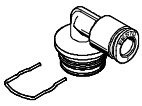
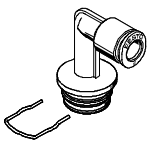
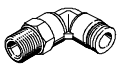
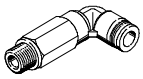
1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

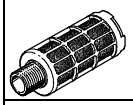
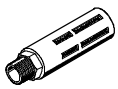
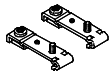
Ordering data					
	Code	Valve function	Pneumatic connection	Part No.	Type
Blanking plate for vacant position					
	L	For individual electrical connection	–	**537513**	**VABB-B6-E**
	L	For multi-pin plug connection with cover cap for electrical multi-pin plug connection	–	**537623**	**VABB-B6-ET**
Pressure zone supply module					
	S	Additional supply for individual electrical connection	QS-10	**537517**	**VABF-B6-P1A5-Q10**
	S	Additional supply for multi-pin plug connection with cover cap for electrical multi-pin plug connection	QS-10	**537624**	**VABF-B6-P1A9-Q10**
Cover plate for valve housing					
	C	Valve design with cover	–	**537512**	**VAMC-B6-C**

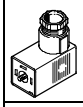
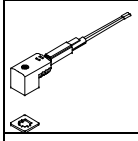
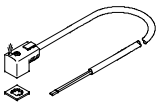
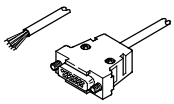
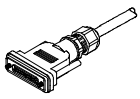
Ordering data

	Code	Description	Valve positions	Compressed air supply connection	Part No.	Type
Sub-base for individual valve						
	–	Internal pilot air supply	1	Cartridge	**537518**	**VABS-B6-PB-Q-B**
	–	External pilot air supply	1	Cartridge	**537519**	**VABS-B6-PB-Q**
Manifold rail for individual electrical connection						
	–		2	G¼	**537500**	**VABM-B6-E-G14-2**
			3		**545815**	**VABM-B6-E-G14-3**
			4		**537501**	**VABM-B6-E-G14-4**
			5		**545816**	**VABM-B6-E-G14-5**
			6		**537502**	**VABM-B6-E-G14-6**
			7		**545817**	**VABM-B6-E-G14-7**
			8		**537503**	**VABM-B6-E-G14-8**
			9		**545818**	**VABM-B6-E-G14-9**
			10		**537504**	**VABM-B6-E-G14-10**
			11		**545819**	**VABM-B6-E-G14-11**
			12		**537505**	**VABM-B6-E-G14-12**
	–		2	G½	**537506**	**VABM-B6-E-G12-2**
			3		**545820**	**VABM-B6-E-G12-3**
			4		**537507**	**VABM-B6-E-G12-4**
			5		**545821**	**VABM-B6-E-G12-5**
			6		**537508**	**VABM-B6-E-G12-6**
			7		**545822**	**VABM-B6-E-G12-7**
			8		**537509**	**VABM-B6-E-G12-8**
			9		**545823**	**VABM-B6-E-G12-9**
			10		**537510**	**VABM-B6-E-G12-10**
			11		**545824**	**VABM-B6-E-G12-11**
			12		**537511**	**VABM-B6-E-G12-12**
			16		**564835**	**VABM-B6-E-G12-16**
Manifold rail for valve terminal with multi-pin plug connection						
	–		4	G½	**537618**	**VABM-B6-E-G12-4-M1**
			6		**537619**	**VABM-B6-E-G12-6-M1**
			8		**537620**	**VABM-B6-E-G12-8-M1**
			10		**537621**	**VABM-B6-E-G12-10-M1**
			12		**537622**	**VABM-B6-E-G12-12-M1**
			16		**550186**	**VABM-B6-E-G12-16-M1**
Separator						
	TP, TS, TR	For duct separation	–	G¼	**537515**	**VABD-B6-14-P-C**
			–	G½	**537516**	**VABD-B6-12-P-C**

Ordering data

	Code	Description	Tubing O.D.	Packaging unit	Part No.	Type
Cartridge with push-in connector						
	–	Inline connection ∅ 18 mm	4 mm	10 pieces	**130839**	**QSPK18-4**
	–		6 mm	10 pieces	**130840**	**QSPK18-6**
	–		8 mm	10 pieces	**130841**	**QSPK18-8**
	–		10 mm	10 pieces	**130842**	**QSPK18-10**
	–	L-shaped connection ∅ 18 mm	4 mm	10 pieces	**130843**	**QSPLK18-4**
	–		6 mm	10 pieces	**130844**	**QSPLK18-6**
	–		8 mm	10 pieces	**130845**	**QSPLK18-8**
			10 mm	10 pieces	**132639**	**QSPLK18-10**
			3/8"	10 pieces	**132641**	**QSPLK18-3/8-U**
	–	Extra-long L-shaped connection ∅ 18 mm	4 mm	10 pieces	**130846**	**QSPLLK18-4**
	–		6 mm	10 pieces	**130847**	**QSPLLK18-6**
	–		8 mm	10 pieces	**130848**	**QSPLLK18-8**
	–		10 mm	10 pieces	**132640**	**QSPLLK18-10**
	–		3/8"	10 pieces	**132642**	**QSPLLK18-3/8-U**
Push-in fitting						Technical data ➔ Internet: quick star
	–	With sealing ring connection G1/8	6 mm	10 pieces	**186096**	**QS-G1/8-6**
	–		8 mm	10 pieces	**186098**	**QS-G1/8-8**
	–	With sealing ring connection G1/4	6 mm	10 pieces	**186097**	**QS-G1/4-6**
	–		8 mm	10 pieces	**186099**	**QS-G1/4-8**
	–		10 mm	10 pieces	**186101**	**QS-G1/4-10**
	–		12 mm	10 pieces	**186350**	**QS-G1/4-12**
	–	With sealing ring connection G1/2	12 mm	1 piece	**186104**	**QS-G1/2-12**
	–		16 mm	1 piece	**186105**	**QS-G1/2-16**
	–	Connection R1/4	6 mm	10 pieces	**153003**	**QS-1/4-6**
	–		8 mm	10 pieces	**153005**	**QS-1/4-8**
	–		10 mm	10 pieces	**153007**	**QS-1/4-10**
	–		12 mm	10 pieces	**164980**	**QS-1/4-12**
	–	Connection R1/2	10 mm	1 piece	**190646**	**QS-1/2-10**
	–		12 mm	1 piece	**153010**	**QS-1/2-12**
	–		16 mm	1 piece	**153011**	**QS-1/2-16**
Push-in L-fitting						Technical data ➔ Internet: quick star
	–	With sealing ring connection G1/8	6 mm	10 pieces	**186117**	**QSL-G1/8-6**
	–		8 mm	10 pieces	**186119**	**QSL-G1/8-8**
	–	With sealing ring connection G1/4	6 mm	10 pieces	**186118**	**QSL-G1/4-6**
	–		8 mm	10 pieces	**186120**	**QSL-G1/4-8**
	–		10 mm	10 pieces	**186122**	**QSL-G1/4-10**
	–		12 mm	10 pieces	**186351**	**QSL-G1/4-12**
	–	With sealing ring connection G1/2	12 mm	1 piece	**186125**	**QSL-G1/2-12**
	–		16 mm	1 piece	**186126**	**QSL-G1/2-16**
Push-in L-fitting, long						Technical data ➔ Internet: quick star
	–	With sealing ring connection G1/4	6 mm	10 pieces	**186129**	**QSLL-G1/4-6**
	–		8 mm	10 pieces	**186131**	**QSLL-G1/4-8**
	–		10 mm	10 pieces	**186133**	**QSLL-G1/4-10**
	–	With sealing ring connection G1/2	12 mm	1 piece	**186136**	**QSLL-G1/2-12**
	–		16 mm	1 piece	**190665**	**QSLL-G1/2-16**

Ordering data					
	Code	Description	Packaging unit	Part No.	Type
Blanking plug					
	–	Connection ∅ 18 mm	10 pieces	**537533**	**QSPC18**
	–	For thread G¼	10 pieces	**3569**	**B-¼**
	–	For thread G½	10 pieces	**3571**	**B-½**
Adapter					
	–	For thread G⅛	10 pieces	**545921**	**NPFA-A-P18-G18-F**
	–	For thread G¼	10 pieces	**545922**	**NPFA-A-P18-G14-F**
Silencer					Technical data ➔ Internet: u
	–	For thread G¼	1 piece	**165004**	**UC-¼**
	–	For thread G¼	1 piece	**2316**	**U-¼**
	–	For thread G¼	1 piece	**6842**	**U-¼-B**
	–	For thread G½	1 piece	**6844**	**U-½-B**
Inscription label					
	–	Scope of delivery 24 labels in frame		**161937**	**IBS-9x17**
	–	Scope of delivery 80 labels in frame		**197259**	**MH-BZ-80X**
	–	Scope of delivery 64 labels in frame		**18576**	**IBS-6x10**
H-rail mounting kit					
	H	Attachment of the manifold rails to H-rails to EN 60715-TH35	1 piece	**537514**	**VAME-B6-T**

Ordering data						
	Code	Description	Voltage [V]	Cable length [m]	Part No.	Type
Plug socket						Technical data ➔ Internet: mssd-eb
	–	With screw terminals, for self-assembly	Up to 250 AC	–	**151687**	**MSSD-EB**
	C		Up to 250 AC	–	**539712**	**MSSD-EB-M12**
	–	With insulation displacement connection, for self-assembly	Up to 250 AC	–	**192745**	**MSSD-EB-S-M14**
Plug socket with cable for individual electrical connection						Technical data ➔ Internet: kmeb
	–	Switching status display via LED, polyvinyl chloride	24 DC	2.5	**151688**	**KMEB-1-24-2,5-LED**
			24 DC	5	**151689**	**KMEB-1-24-5-LED**
		Polyvinyl chloride	Up to 240 AC	2.5	**151690**	**KMEB-1-230AC-2,5**
			Up to 240 AC	5	**151691**	**KMEB-1-230AC-5**
	C1	Switching status display via LED, polyurethane	24 DC	2.5	**174844**	**KMEB-2-24-2,5-LED**
	C2	Switching status display via LED, polyurethane	24 DC	5	**174845**	**KMEB-2-24-5-LED**
	C1	Polyurethane	Up to 230 AC	2.5	**174846**	**KMEB-2-230AC-2,5**
	C2		Up to 230 AC	5	**174847**	**KMEB-2-230AC-5**
	–	Switching status display via LED, polyvinyl chloride	24 DC	2.5	**547268**	**KMEB-3-24-2,5-LED**
			24 DC	5	**547269**	**KMEB-3-24-5-LED**
		Polyvinyl chloride	24 DC	2.5	**547270**	**KMEB-3-24-2,5**
			24 DC	5	**547271**	**KMEB-3-24-5**
Connecting cable for multi-pin plug to IP40						
	–	Sub-D, 25-pin, up to 20 coils, polyvinyl chloride	24 DC	2.5	**530046**	**KMP6-25P-20-2,5**
	–		24 DC	5	**530047**	**KMP6-25P-20-5**
	–		24 DC	10	**530048**	**KMP6-25P-20-10**
	–	Sub-D, 25-pin, up to 12 coils, polyvinyl chloride	24 DC	2.5	**530049**	**KMP6-25P-12-2,5**
	–		24 DC	5	**530050**	**KMP6-25P-12-5**
	–		24 DC	10	**530051**	**KMP6-25P-12-10**
Connecting cable for multi-pin plug to IP65						
	M1	Sub-D, 25-pin, up to 12 coils, polyvinyl chloride	24 DC	2.5	**538222**	**NEBV-S1G25-K-2.5-N-LE15**
	M2		24 DC	5	**538223**	**NEBV-S1G25-K-5-N-LE15**
	M3		24 DC	10	**538224**	**NEBV-S1G25-K-10-N-LE15**
	M1	Sub-D, 25-pin, up to 24 coils, polyvinyl chloride	24 DC	2.5	**538225**	**NEBV-S1G25-K-2.5-N-LE25**
	M2		24 DC	5	**538226**	**NEBV-S1G25-K-5-N-LE25**
	M3		24 DC	10	**538227**	**NEBV-S1G25-K-10-N-LE25**
Illuminating seal						
	–	For indicating the signal status	12 ... 24 DC	–	**151717**	**MEB-LD-12-24DC**
	–		Up to 230 AC	–	**151718**	**MEB-LD-230AC**