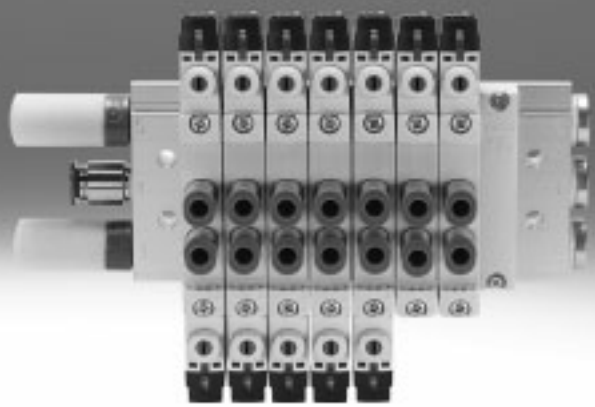
Solenoid valves VUVG/valve terminals VTUG

FESTO



★/☆	Festo core product range Covers 80% of your automation tasks
Worldwide:	Always in stock
Superb:	Festo quality at an attractive price
Easy:	Reduces procurement and storing complexity

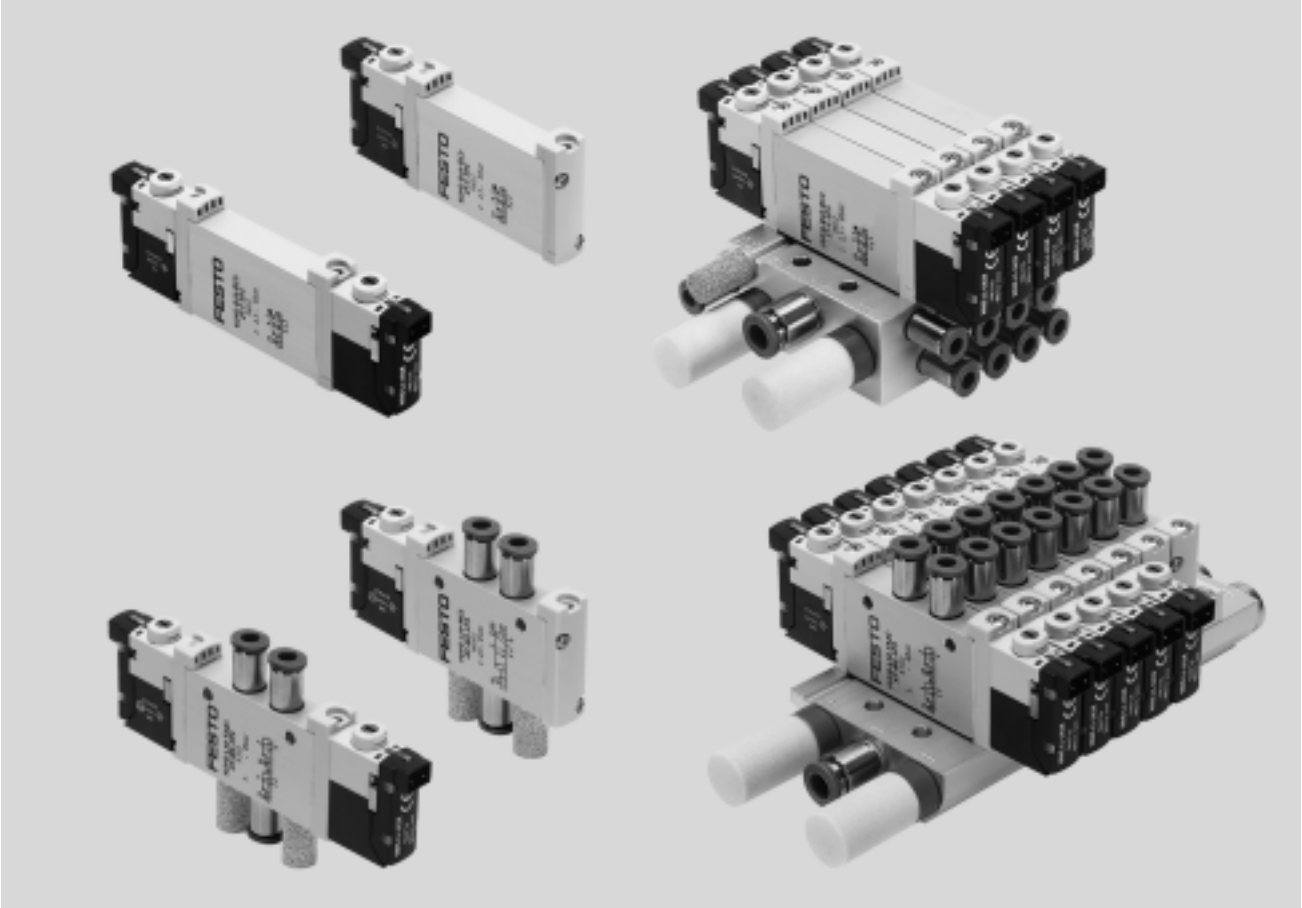
★ Generally ready for shipping ex works in 24 hours
Held in stock in 13 service centres worldwide
More than 2200 product

☆ Generally ready for shipping ex works in 5 days
Assembled for you in 4 service centres worldwide
Up to 6 x 10^{12} variants per product series

Look for the star!

Solenoid valves VUVG

Key features



Innovative

- Can be set to internal or external pilot air supply for manifolds with sub-base valves
- Maximum pressure 10 bar
- Design principle:
  - Piston slide with sealing ring (VUVG-LK, VUVG-BK)
  - Piston spool with sealing cartridge (VUVG-L, VUVG-B)

Flexible

- Wide range of valve functions
- Choice of quick plug connectors
- In-line valves
- Semi in-line valves for manifold assembly
- M5 and M7 in-line valves can be combined on one manifold rail
- Valve manifold with pressure zones
- IP40, IP65
- Connection technology via:
  - Electrical sub-base

Reliable

- Sturdy and durable metal components
  - Valves
  - Manifold rails
- Fast troubleshooting thanks to 360° LED display
- Convenient servicing thanks to valves that can be replaced quickly and easily
- Choice of manual override: non-detenting, covered, non-detenting/detenting or detenting (without accessories)

Easy to mount

- Secure mounting on wall or H-rail
- Easy mounting, captive screws and seal
- Connection technology easy to change via the electrical sub-base
- Identification holder for labelling the valves

Valve terminal configurator

Download CAD data ➔ **www.festo.com**

A valve terminal configurator is available to help you select a suitable valve terminal VTUG. This makes it much easier to order the right product.

Valve terminals VTUG 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 VTUG

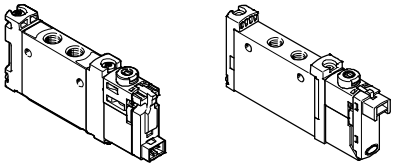
➔ Internet: vtug

Solenoid valves VUVG

Key features – Pneumatics

Individual valves and valve manifolds

In-line valves as individual valve

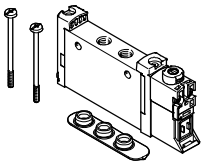


In-line valve VUVG-LK/VUVG-L

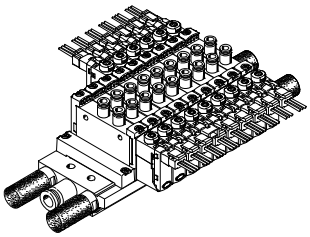
In-line valves are designed to be used without pneumatic linking. All pneumatic connections are on the valve and can be equipped with fittings/tubing. The electrical connection is provided by different electrical sub-bases.

If a special seal set is used, in-line valves VUVG can also be mounted on a manifold rail (pneumatic linking) as semi in-line valves.

Semi in-line valves for manifold assembly



Semi in-line valve VUVG-S

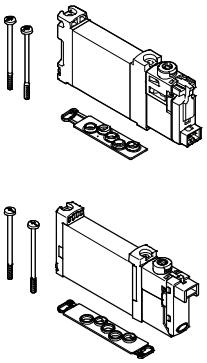


Valve manifold VTUG comprised of semi in-line valves VUVG-S

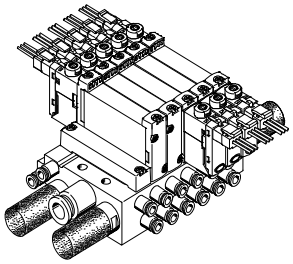
In the case of semi in-line valves, the supply ports (1, 3 and 5) are connected to the valve by means of pneumatic linking (e.g. sub-base).

The working ports (2, 4) are on the valve. The electrical connection is provided by different electrical sub-bases.

Sub-base valves for manifold assembly



Sub-base valve VUVG-BK/VUVG-B



Valve manifold VTUG comprised of VUVG-BK/VUVG-B sub-base valves

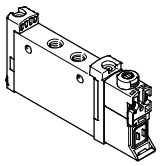
In the case of sub-base valves, the supply ports (1, 3 and 5) and the working ports (2, 4) are connected to the valve by means of pneumatic linking (e.g. sub-base).

The electrical connection is provided by different electrical sub-bases.

Solenoid valves VUVG

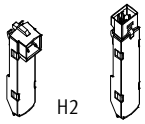
Key features – Pneumatics

Basic valves VUVG



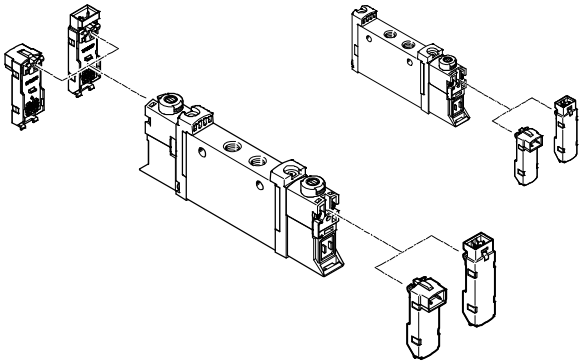
- Size 10, 14 and 18 mm
- In-line valves and semi in-line valves
- Sub-base valves
- 2x 3/2-way, 5/2-way and 5/3-way valves

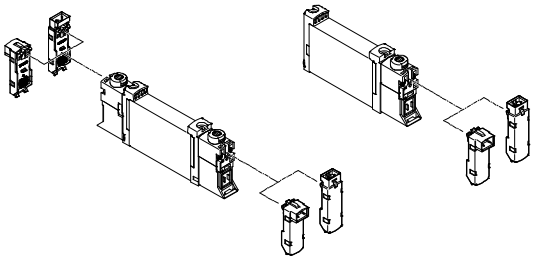
Electrical sub-bases



- 5, 12 and 24 V DC
- With or without holding current reduction
- LED

Basic valve and electrical sub-bases

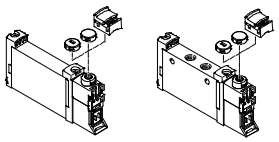




- Note

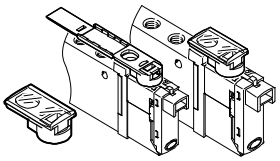
More electrical connection boxes ➔ page 114

Cover caps for manual override



- Closed cover cap, covered manual override
- Slotted cover cap, non-detenting manual override
- Cover, detenting manual override

Identification holder



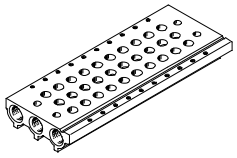
- The identification holder is mounted in the same way as a cover cap for manual override
- The hinged identification holder covers the retaining screw and the manual override

Solenoid valves VUVG

Key features – Pneumatics

FESTO

Manifold rail for in-line valves

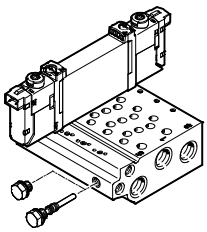


- For in-line valves M3, M5, M7, G1/8 and G1/4
- For 2x 3/2-way, 5/2-way and 5/3-way valves
- 2 to 10 and 12, 14, 16 valve positions

Note

Pressurisation and exhaust at both ends is recommended for an optimised flow rate in cases where multiple valves switch simultaneously.

Manifold rail for sub-base valves

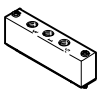


- For sub-base valves 10A, 10, 14 and 18
- Manifold rail with M5, M7, G1/8 and G1/4 working ports
- For 2x 3/2-way, 5/2-way and 5/3-way valves
- 2 to 10, 12, 14 and 16 valve positions
- The sub-base valves always have external pilot air. The pilot air is set via the manifold rail. A short and a long blanking plug are included with the manifold rail for this purpose.

Cover plate for vacant position

Vacant position cover

Supply plate



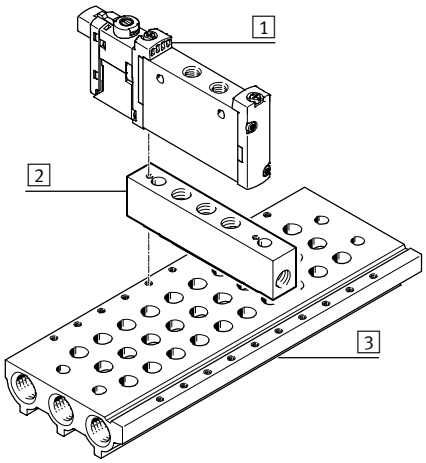
For additional air supply and exhaust via a valve position

Separator for pressure zones

For creating multiple pressure zones in a valve manifold

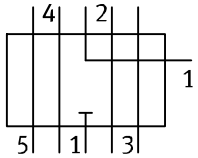
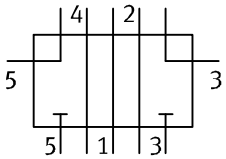
Vertical pressure supply plate

For in-line valves M5/M7 and G1/8

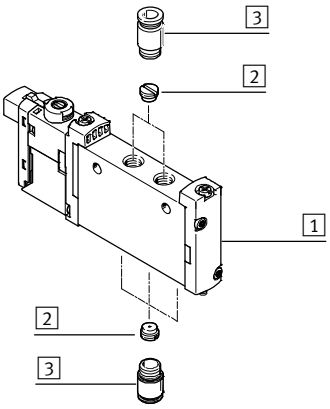


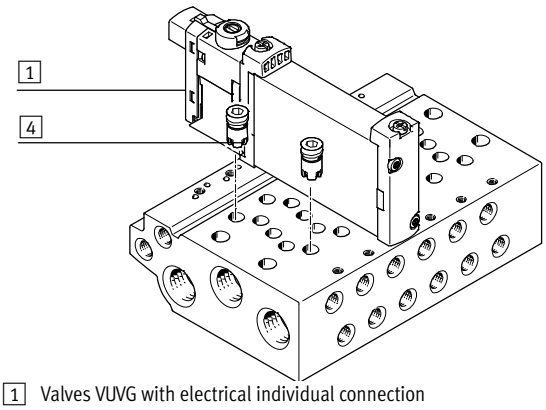
1 In-line valves VUVG
2 Vertical pressure supply plate
3 Manifold rail

The vertical pressure supply plate enables the valve to be pressurised and exhausted separately.
If two vertical pressure supply plates are mounted one on top of the other, the valve can be supplied with compressed air and exhausted completely independently of the valve terminal (terminal code CS).

Code		Type	For in-line valves		Description
			M5/M7	G1/8	
ZU		VABF-L1-P3A	■	■	Plate with port 1 for supplying an individual operating pressure or separate exhausting (reverse operation) for a valve position.
ZV		VABF-L1-P7A	■	■	Plate with ports 3 and 5 for exhausting the valve or supplying an individual operating pressure (reverse operation) for a valve position.

Exhaust functions





1 Valves VUVG with electrical individual connection
2 Flow restrictor for thread M5
3 Fitting
4 Fixed flow restrictor, self-tapping/check valve

Flow restrictor for thread M5

In-line valve, individual electrical connection: flow restrictor can be fitted in port 1, 3, 5 and/or in port 2, 4.

Sub-base valve, individual electrical connection: flow control can be fitted in port 2, 4.

Fixed flow restrictor, self-tapping

The fixed flow restrictor can be used to permanently set the exhaust flow rate in ducts 3 and 5.

The fixed flow restrictors are screwed into ducts 3 and 5 in the manifold rail.

Please see the relevant assembly instructions:
➔ www.festo.com/sp

Check valve

Check valves block the flow towards the valves if back pressure develops in ducts 3 and 5 in the case of a high exhaust capacity and thus prevents actuators from switching unexpectedly.
The check valves are screwed into ducts 3 and 5 in the manifold rail.
Please see the relevant assembly instructions:
➔ www.festo.com/sp

Note

- It is not possible to use a check valve and a fixed flow restrictor (in the same duct) at the same time.
- When screwing in again, use the threads already present.

Creating pressure zones and separating exhaust air

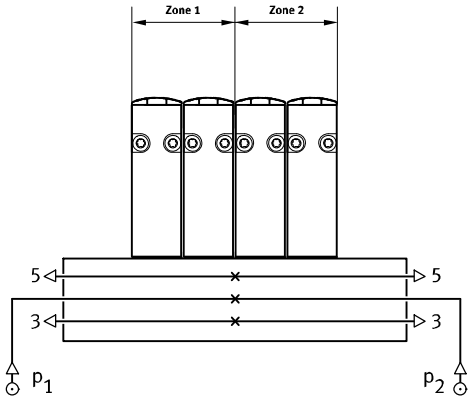
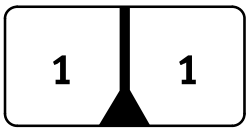
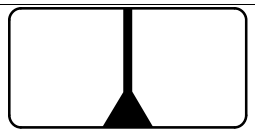
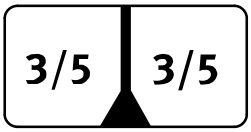
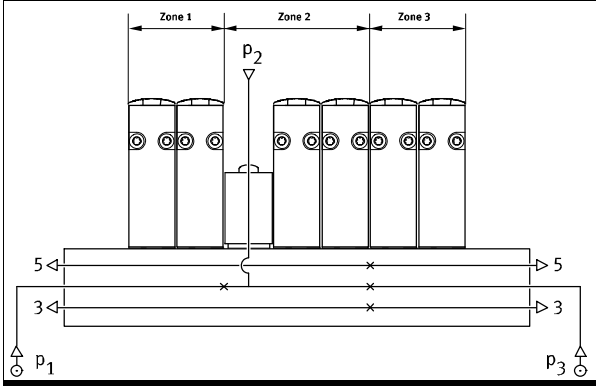
Compressed air is supplied and exhausted via the manifold rail and via supply plates.
The position of the supply plates and channel separations can be freely selected with the VUVG.

Pressure zones are created by isolating the internal supply ducts between the manifold sub-bases by appropriate channel separation.

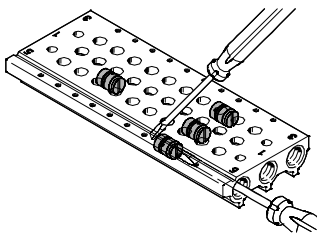
Pressure zone separation can be used for the following ducts:
- Duct 1
- Duct 3
- Duct 5

Note
- Use a separator if the exhaust air pressures are high
- Use at least one supply plate/ supply for each pressure zone
- Pressure zone separation is not possible in duct 12/14 (pilot air supply)

Channel separation

	Description
	The pressure zones can be freely configured with the VUVG. The following channel separations are possible: Duct 1 closed  Duct 1, 3, 5 closed  Duct 3, 5 closed 
	The number of pressure zones with the VUVG is only limited by the number of valve positions on the manifold rail. Note that each supply plate occupies one valve position.

Separator VABD



Note

As the separators are fitted from only one side using a slotted screwdriver, several pressure zones can be created in one profile.

Pilot air supply

Internal pilot air supply

Internal pilot air supply can be chosen with an operating pressure in the range 1.5 ... 8 bar, 2.5 ... 8 bar or 3 ... 8 bar (depending on the valve used).

The pilot air supply is branched from duct 1 (compressed air supply) using an internal connection.

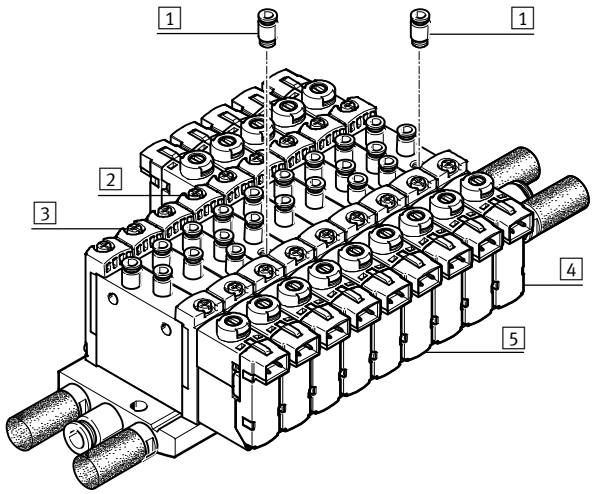
External pilot air supply

External pilot air supply is required for vacuum operation.
The port for external pilot air supply (port 12/14) is located on the valve in the case of in-line valves and on the manifold rail in the case of sub-base valves.

Pilot exhaust air

With in-line valves, the pilot exhaust air is vented via exhaust holes.
With sub-base valves, the pilot exhaust air is vented via duct 82/84 of the manifold rail.

Pilot air supply with in-line and semi in-line valves



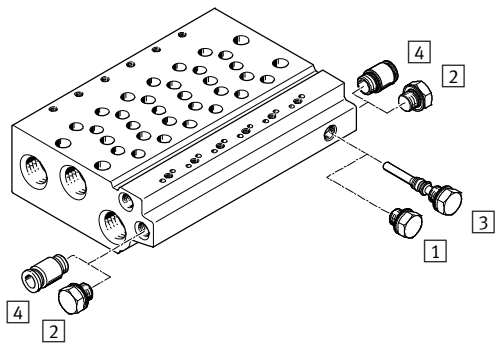
1 Push-in fitting for external pilot air supply at port 12/14
2 Single solenoid valve with external pilot air supply
3 Single solenoid valve with internal pilot air supply
4 Double solenoid valve with external pilot air supply
5 Double solenoid valve with internal pilot air supply

The internal pilot air is branched from port 1 in the valve body. The external pilot air (port 12/14) is supplied individually at each valve housing.

Note

Semi in-line valves cannot be supplied centrally with pilot air via the manifold rail.

Pilot air supply with sub-base valves



1 Blanking plug, short, with internal pilot air
2 Blanking plug for duct 12/14 with internal pilot air
3 Blanking plug, long, with external pilot air
4 Push-in fitting in duct 12/14 with external pilot air

The manifold rails for sub-base valves have an internal connection between duct 12/14 and duct 1. Internal or external pilot air supply is selected by inserting a blanking plug into this conduit.

Operation with different pressures

Vacuum operation

Points to note with 3/2-way valves

The 3/2-way valves are available in a design with two valves in one valve body and with pneumatic spring return. With these valves, the force for the return movement is supplied through port 1.

Vacuum operation is therefore only possible at port 3 and 5, not at port 1.

With external pilot air supply, vacuum can be connected at port 1, 3, 5 of the 5/2-way and 5/3-way valves.

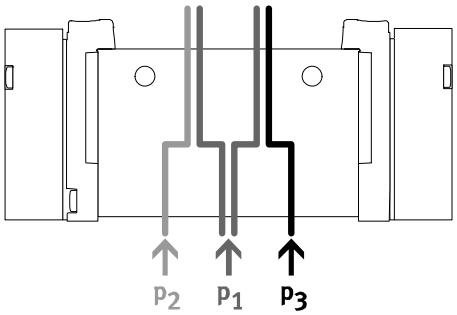
Reverse operation

The 3/2-way valves with pneumatic spring are not suitable for reverse operation, since at least the minimum pilot pressure must be present in duct 1.

- Note

Pressure must be present at port 1.

Pressure deflector (internal pilot air)



- If two different pressures are required.
- Different pressures can be supplied at duct 1, 3 and 5.

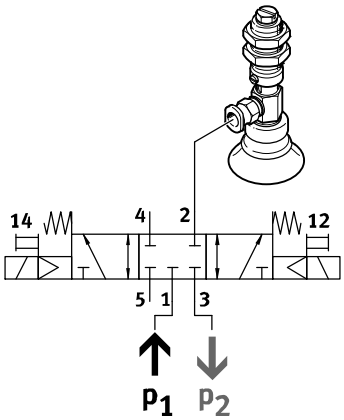
- Note

- With internal pilot air supply, the minimum pilot pressure must be adhered to in duct 1
- With 2x3/2-way valves without spring return, the minimum pilot pressure must always be adhered to in duct 1

Benefits

Any pressure or vacuum can be connected at duct 3 and 5 both with external and internal pilot air

Vacuum, ejector pulse and normal position

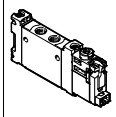
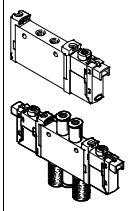
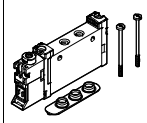


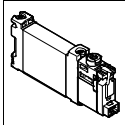
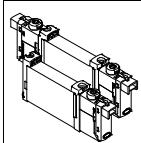
Vacuum, ejector pulse and normal position can be achieved as follows:

- Internal pilot air supply
- Vacuum in duct 3
- Pressure for the ejector pulse in duct 1

Solenoid valves VUVG

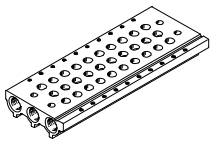
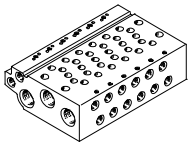
Product range overview

Design type	Working port	Size	Functions and flow rate [l/min]												➔ Page/ Internet
			T32C	T32U	T32H	T32C/M	T32U/M	T32H/M	M52	M52/M	B52	P53C	P53U	P53E	
In-line valve as individual valve, solenoid valve VUVG-LK															
	M5	10	■ 180	–	–	–	–	–	■ 195	–	■ 195	–	–	–	28
	M7	10	■ 280	–	–	–	–	–	■ 340	–	■ 340	–	–	–	32
	G1/8	14	■ 570	–	–	–	–	–	■ 660	–	■ 660	–	–	–	49
In-line valve as individual valve, solenoid valve VUVG-L															
	M3	10 A	–	–	–	–	–	–	■ 100	■ 80	■ 100	■ 90	■ 90	■ 90	20
	M5	10	■ 150	■ 150	■ 150	■ 135	■ 125	■ 125	■ 220	■ 190	■ 220	■ 210	■ 210	■ 210	36
	M7	10	■ 190	■ 190	■ 190	■ 150	■ 140	■ 140	■ 380	■ 320	■ 380	■ 320	■ 320	■ 320	40
	G1/8	14	■ 650	■ 600	■ 650	■ 550	■ 500	■ 500	■ 780	■ 780	■ 780	■ 650	■ 600	■ 600	53
	G1/4	18	■ 1000	■ 1000	■ 1000	■ 1000	■ 1000	■ 1000	■ 1300	■ 1300	■ 1380	■ 1200	■ 1000	■ 1000	63
Semi in-line valve for manifold assembly, solenoid valve VUVG-S															
	M3	10 A	–	–	–	–	–	–	■ 100	■ 80	■ 100	■ 90	■ 90	■ 90	20
	M5	10	■ 150	■ 150	■ 150	■ 135	■ 125	■ 125	■ 220	■ 190	■ 220	■ 210	■ 210	■ 210	36
	M7	10	■ 170	■ 170	■ 170	■ 140	■ 130	■ 130	■ 340	■ 290	■ 340	■ 300	■ 300	■ 300	40
	G1/8	14	■ 620	■ 580	■ 580	■ 520	■ 480	■ 480	■ 730	■ 730	■ 730	■ 620	■ 580	■ 580	53
	G1/4	18	■ 1000	■ 1000	■ 1000	■ 1000	■ 1000	■ 1000	■ 1300	■ 1300	■ 1380	■ 1200	■ 1000	■ 1000	63

Design type	Working port	size	Functions and flow rate [l/min]												➔ Page/ Internet
			T32C	T32U	T32H	T32C/M	T32U/M	T32H/M	M52	M52/M	B52	P53C	P53U	P53E	
Sub-base valve, solenoid valve VUVG-BK															
	M5	10	■ 160	–	–	–	–	–	■ 160	–	■ 160	–	–	–	79
	M7	10	■ 160	–	–	–	–	–	■ 160	–	■ 160	–	–	–	79
	G1/8	14	■ 350	–	–	–	–	–	■ 380	–	■ 380	–	–	–	92
Sub-base valve, solenoid valve VUVG-B															
	M3	10 A	–	–	–	–	–	–	■ 100	■ 80	■ 100	■ 90	■ 90	■ 90	72
	M5	10	■ 150	■ 150	■ 150	■ 130	■ 120	■ 120	■ 210	■ 180	■ 210	■ 200	■ 200	■ 200	83
	M7	10	■ 160	■ 160	■ 160	■ 140	■ 130	■ 130	■ 270	■ 230	■ 270	■ 250	■ 250	■ 250	83
	G1/8	14	■ 540	■ 510	■ 540	■ 430	■ 410	■ 410	■ 580	■ 580	■ 580	■ 540	■ 510	■ 510	92
	G1/4	18	■ 800	■ 800	■ 800	■ 800	■ 800	■ 800	■ 1000	■ 1000	■ 1000	■ 950	■ 950	■ 950	105

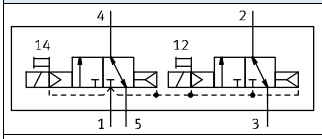
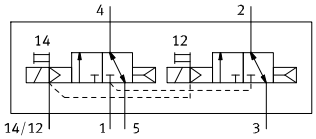
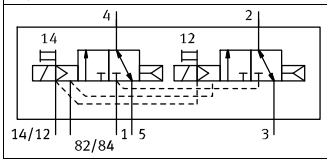
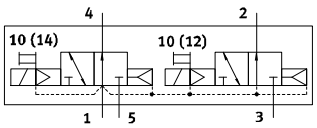
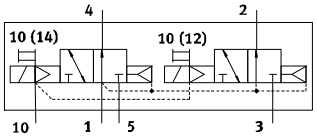
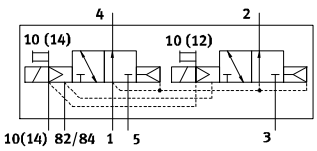
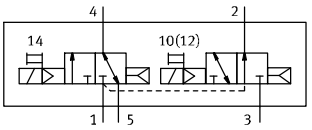
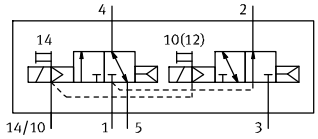
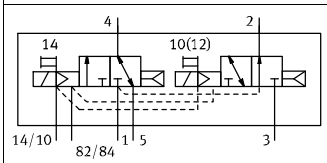
Solenoid valves VUVG

Product range overview

Design type	Size	Description	➔ Page/ Internet
Manifold rail VABM- ... -S- ..., for in-line valves (manifold assembly)			
	10AS	Size M3	26, 45, 59, 69
	10S	Size M5, M7	
	14S	Size G1/8	
	18S	Size G1/4	
Manifold rail VABM, for sub-base valves (manifold assembly)			
	10AW	Size M3	76, 89, 101, 110
	10W	Size M5	
	10HW	Size M7	
	14W	Size G1/8	
	18W	Size G1/4	

Solenoid valves VUVG

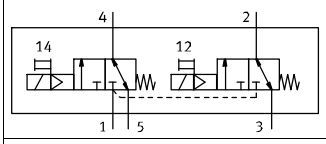
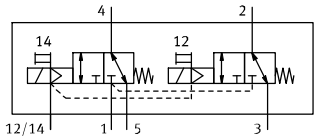
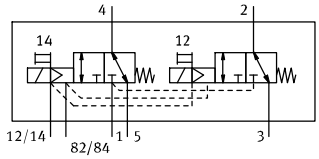
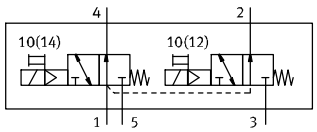
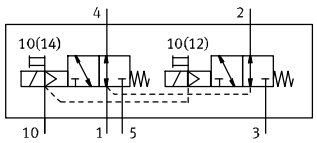
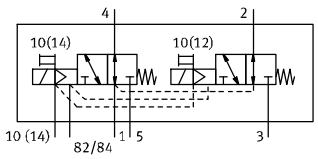
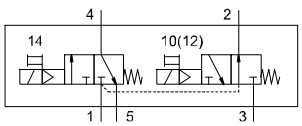
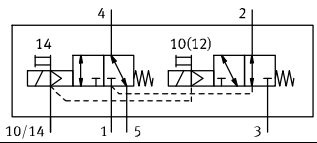
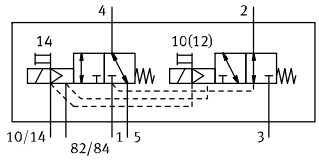
Overview of valve functions

Valve	Valve code	Description	VUVG-LK, VUVG-BK		VUVG-L, VUVG-B			
			Size		Size			
			M5/M7	G1/8	M3	M5/M7	G1/8	G1/4
2x 3/2-way valve, normally closed, pneumatic spring								
	T32C-A	In-line valve, internal pilot air supply	■	■	–	■	■	■
		In-line valve, external pilot air supply	–	–	–	■	■	–
		Sub-base valve, external pilot air supply	–	–	–	■	■	■
2x 3/2-way valve, normally open, pneumatic spring								
	T32U-A	In-line valve, internal pilot air supply	–	–	–	■	■	■
		In-line valve, external pilot air supply	–	–	–	■	■	–
		Sub-base valve, external pilot air supply	–	–	–	■	■	■
2x 3/2-way valve, 1x normally open, 1x normally closed, pneumatic spring								
	T32H-A	In-line valve, internal pilot air supply	–	–	–	■	■	■
		In-line valve, external pilot air supply	–	–	–	■	■	–
		Sub-base valve, external pilot air supply	–	–	–	■	■	■

1) Order code for valve terminal/position function

Solenoid valves VUVG

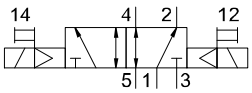
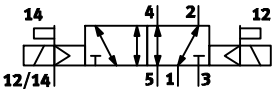
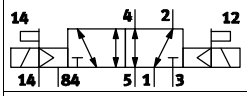
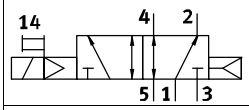
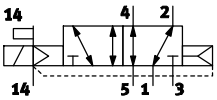
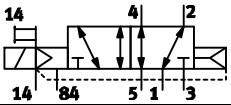
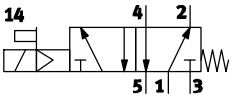
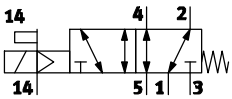
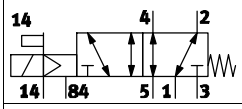
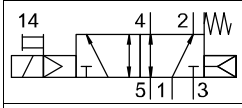
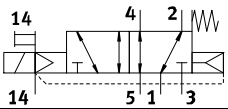
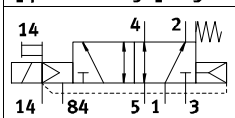
Overview of valve functions

Valve	Valve code	Description	VUVG-LK, VUVG-BK		VUVG-L, VUVG-B			
			Size		Size			
			M5/M7	G1/8	M3	M5/M7	G1/8	G1/4
2x3/2-way valve, normally closed, mechanical spring								
	T32C-M	In-line valve, internal pilot air supply	–	–	–	■	■	■
		In-line valve, external pilot air supply	–	–	–	■	■	■
		Sub-base valve, external pilot air supply	–	–	–	■	■	■
2x3/2-way valve, normally open, mechanical spring								
	T32U-M	In-line valve, internal pilot air supply	–	–	–	■	■	■
		In-line valve, external pilot air supply	–	–	–	■	■	■
		Sub-base valve, external pilot air supply	–	–	–	■	■	■
2x3/2-way valve, 1x normally open, 1x normally closed, mechanical spring								
	T32H-M	In-line valve, internal pilot air supply	–	–	–	■	■	■
		In-line valve, external pilot air supply	–	–	–	■	■	■
		Sub-base valve, external pilot air supply	–	–	–	■	■	■

1) Order code for valve terminal/position function

Solenoid valves VUVG

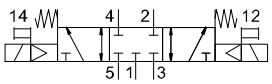
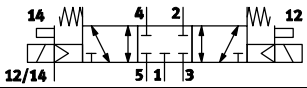
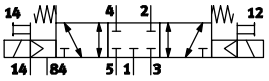
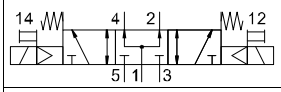
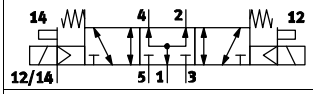
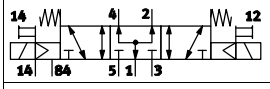
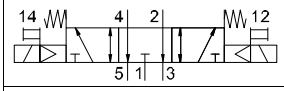
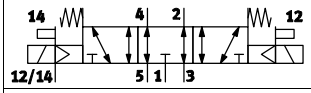
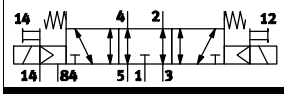
Overview of valve functions

Valve	Valve code	Description	VUVG-LK, VUVG-BK		VUVG-L, VUVG-B			
			Size		Size			
			M5/M7	G1/8	M3	M5/M7	G1/8	G1/4
5/2-way double solenoid valve								
	B52	In-line valve, internal pilot air supply	■	■	■	■	■	■
		In-line valve, external pilot air supply	–	–	■	■	■	■
		Sub-base valve, external pilot air supply	–	–	■	■	■	■
5/2-way valve, monostable, pneumatic spring								
	M52-A	In-line valve, internal pilot air supply	■	■	–	–	■	–
		In-line valve, external pilot air supply	–	–	–	–	■	–
		Sub-base valve, external pilot air supply	–	–	–	–	■	–
5/2-way valve, monostable, mechanical spring								
	M52-M	In-line valve, internal pilot air supply	–	–	■	■	■	■
		In-line valve, external pilot air supply	–	–	■	■	■	■
		Sub-base valve, external pilot air supply	–	–	■	■	■	■
5/2-way valve, single solenoid/monostable, pneumatic/mechanical spring								
	M52-R	In-line valve, internal pilot air supply	–	–	■	■	–	■
		In-line valve, external pilot air supply	–	–	■	■	–	■
		Sub-base valve, external pilot air supply	–	–	■	■	–	■

1) Order code for valve terminal/position function

Solenoid valves VUVG

Overview of valve functions

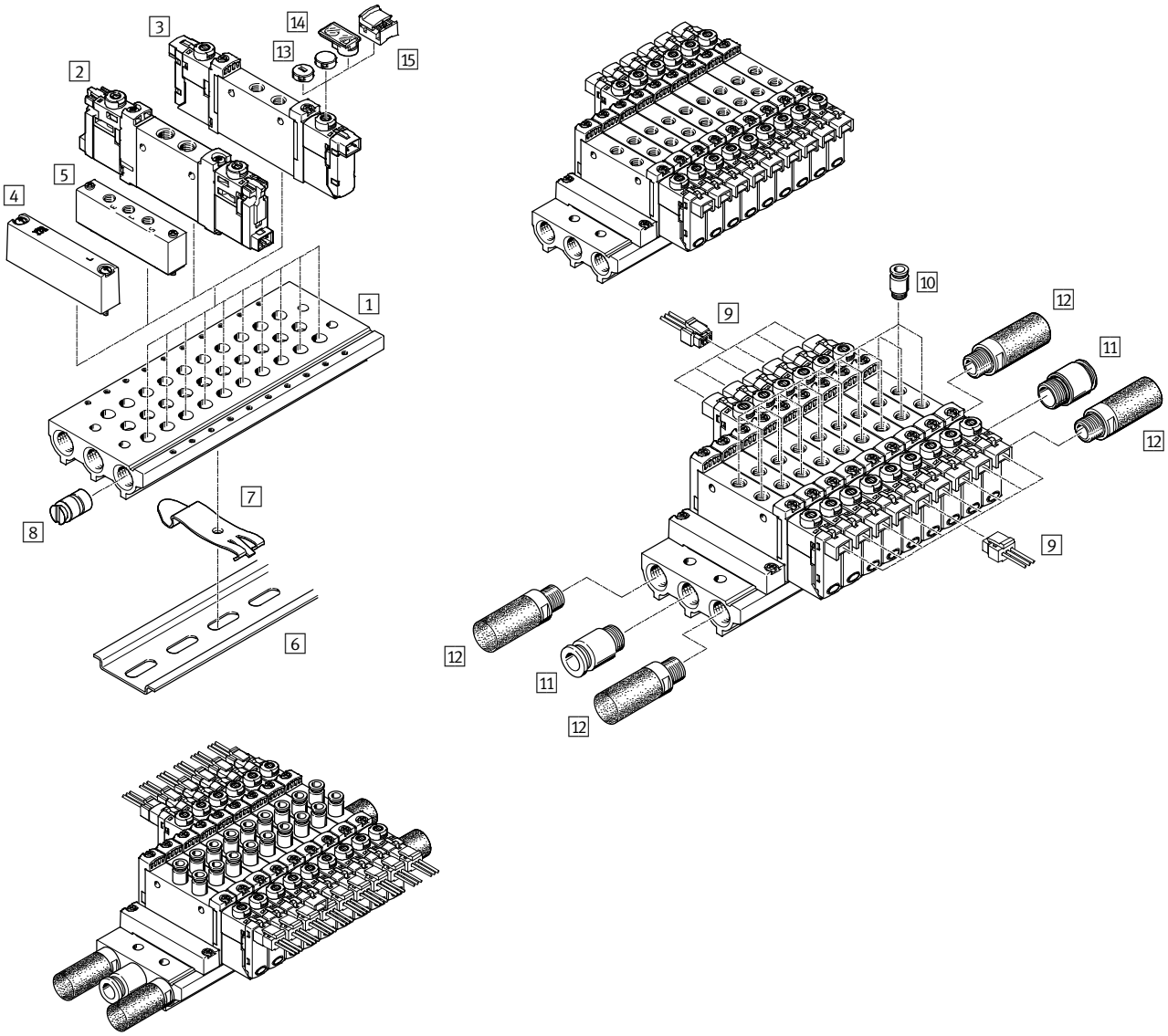
Valve	Valve code	Description	VUVG-LK, VUVG-BK		VUVG-L, VUVG-B			
			Size		Size			
			M5/M7	G1/8	M3	M5/M7	G1/8	G1/4
5/3-way valve, mid-position closed								
	P53C	In-line valve, internal pilot air supply	–	–	■	■	■	■
		In-line valve, external pilot air supply	–	–	■	■	■	■
		Sub-base valve, external pilot air supply	–	–	■	■	■	■
5/3-way valve, mid-position pressurized								
	P53U	In-line valve, internal pilot air supply	–	–	■	■	■	■
		In-line valve, external pilot air supply	–	–	■	■	■	■
		Sub-base valve, external pilot air supply	–	–	■	■	■	■
5/3-way valve, mid-position exhausted								
	P53E	In-line valve, internal pilot air supply	–	–	■	■	■	■
		In-line valve, external pilot air supply	–	–	■	■	■	■
		Sub-base valve, external pilot air supply	–	–	■	■	■	■

1) Order code for valve terminal/position function

Solenoid valves VUVG

Sample system overview In-line valves M5/M7

Manifold assembly



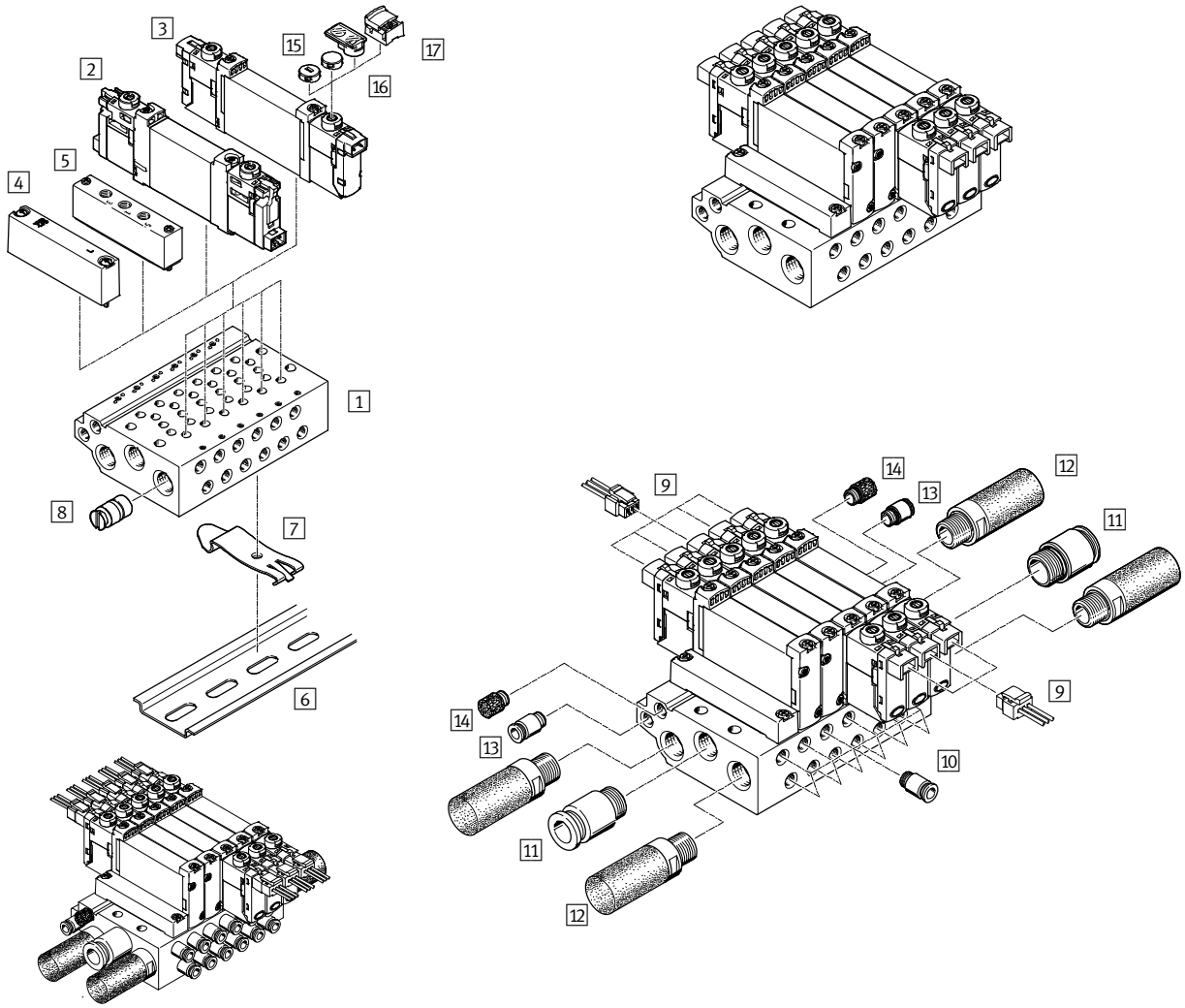
Manifold assembly and accessories

		Type	Description	➔ Page/Internet
1	Manifold rail	VABM-L1-10S-G18-...	For 2 to 10, 12, 14 and 16 valve positions	45
2	SOLENOID VALVE	VUVG-LK ...	In-line valve 2x3/2-way, 5/2-way and 5/3-way	27
3	SOLENOID VALVE	VUVG-L ...	In-line valve 2x3/2-way, 5/2-way and 5/3-way	27
4	Cover plate	VABB-L1-10-S	For covering an unused vacant position	45
5	Supply plate	VABF-L1-10-P3A4- ...	For air supply at duct 1 and duct 3 and 5	45
6	H-rail	NRH-35-2000	For mounting the valve manifold	113
7	H-rail mounting	VAME-T-M4	2 pieces for fitting the valve manifold on an H-rail	113
8	Separator	VABD-...	For creating pressure zones	45
9	Plug socket with cable	NEBV-H1G2-...-LE2	For electrical sub-base box H2 and H3	117
10	Push-in fitting	QS...	Push-in fitting for duct 2 and 4	118
11	Push-in fitting	QS...	Push-in fitting for air supply at duct 1	118
12	Pneumatic silencers	U...	For duct 3 and 5	119
13	Cover cap	VMPA-HB...-B	For manual override	113
14	Identification holder	ASLR-D	For labelling the valves, covering the retaining screw and the manual override	119
15	Cover	VAMC	For manual override	119

Solenoid valves VUVG

Sample system overview, sub-base valves M5/M7

Manifold assembly



Manifold assembly and accessories

		Type	Description	➔ Page/Internet
1	Manifold rail	VABM-L1-10 ...-G18- ...	For 2 to 10, 12, 14 and 16 valve positions	88
2	SOLENOID VALVE	VUVG-BK ...	Sub-base valve 2x3/2-way, 5/2-way and 5/3-way	78
3	SOLENOID VALVE	VUVG-B ...	Sub-base valve 2x3/2-way, 5/2-way and 5/3-way	78
4	Cover plate	VABB-L1-10-W	For covering an unused vacant position	89
5	Supply plate	VABF-L1-10-P3A4- ...	For air supply at duct 1 and duct 3 and 5	89
6	H-rail	NRH-35-2000	For mounting the valve manifold	113
7	H-rail mounting	VAME-T-M4	2 pieces for fitting the valve manifold on an H-rail	113
8	Separator	VABD- ...	For creating pressure zones	89
9	Plug socket with cable	NEBV-H1G2-KN-...-LE2	For electrical sub-base H2 and H3	117
10	Push-in fitting	QS...	Push-in fitting for duct 2 and 4	118
11	Push-in fitting	QS...	Push-in fitting for air supply at duct 1	118
12	Pneumatic silencers	U...	For duct 3 and 5	119
13	Push-in fitting	QS...	Push-in fitting for pilot air supply at duct 12/14	118
14	Pneumatic silencers	U...	Silencer for pilot air exhaust at duct 82/84	119
15	Cover cap	VMPA-HB...-B	For manual override	113
16	Identification holder	ASLR-D	For labelling the valves, covering the retaining screw and the manual override	119
17	Cover	VAMC	For manual override	119

Solenoid valves VUVG, in line valves M3

Type code

VUVG	–			10 A	–		–				–		–

Valve type	
In-line valve	**L**
Semi in-line valve	**S**

Design	
Piston slide with sealing cartridge	–

Size	
10 mm	**10 A**

Valve function	
5/2-way valve, bistable	**B52**
5/2-way valve, single solenoid	**M52**
5/3-way valve, mid-position closed	**P53C**
5/3-way valve, mid-position exhausted	**P53E**
5/3-way valve, mid-position pressurized	**P53U**

Reset method	
Mechanical spring with M52	**M**
Pneumatic/mechanical spring with M52	**R**
With B52 and P53	–

Pilot air	
Internal	**–**
External	**Z**

Manual override	
Non-detenting	**H**
Covered	**S**
Non-detenting, detenting	**T**
Detenting, without accessories	**Y**

Pneumatic connection	
M3 thread	**M3**
Push-in connector 3 mm	**Q3**
Push-in connector 4 mm	**Q4**
Push-in connector 1/8"	**T18**
Push-in connector 5/32"	**T532**

	–					L	–	

Accessories for valve/connecting cable	
C1...4	Connection pattern H: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
N1...4	M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
N5...8	M8x1, 4-pin, straight: 5 = 2.5 m, 6 = 5 m; angled: 7 = 2.5 m, 8 = 5 m
S1...4	Connection pattern S, 1 = 0.5 m, 2 = 1 m, 3 = 2.5, 4 = 5 m
W1...4	Connection pattern H, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
WS1...4	Connection pattern S with flying leads, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m

Advertisement	
L	LED

Circuitry	
–	Without holding current reduction (HCR)
R	With holding current reduction (HCR)

Electrical connection	
H2	Connection pattern H, horizontal plug connector
H3	Connection pattern H, vertical plug
K6...9	Cables: 6 = 0.5 m, 7 = 1 m, 8 = 2.5 m, 9 = 5 m
L1...4	with 2x flying leads: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
P3	Without electrical sub-base
R1	Individual plug connector M8, 4-pin
R8	Individual plug connector M8, 3-pin
S2	Connection pattern S, horizontal plug connector
S3	Connection pattern S, vertical connector

Nominal operating voltage	
1	24 V DC
4	5 V DC
5	12 V DC

Exhausting with VUVG-L	
QN	Push-in fitting
U	Pneumatic silencers
–	M3 thread

Solenoid valves VUVG-L10A and VUVG-S10A, in-line valves M3

Technical data

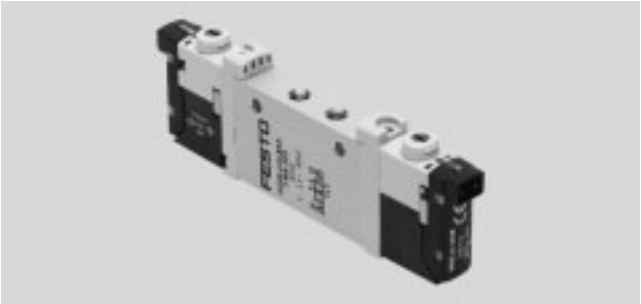
Function
5/2-way, single solenoid
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
90 ... 100 l/min

Voltage
5, 12 and 24 V DC



General Technical data VUVG-L							
Valve function	M52-R	B52	M52-M	P53		
Normal position	–	–	–	C[1]	U[2]	E[3]
Stable position	Single solenoid	Double solenoid	Single solenoid	Single solenoid		
Reset method: pneumatic spring	Yes[4]	–	None	–		
Reset method: mechanical spring	Yes[4]	–	Yes	Yes		
Vacuum operation at port 1	Only with external pilot air supply					
Design	Piston spool					
Sealing principle	Soft					
Actuation type	Electric					
Type of control	Pilot					
Pilot air supply	Internal or external					
Exhaust function	With flow control option					
Manual override	Choice of non-detenting, covered, non-detenting/detenting or detenting					
Type of mounting	Optionally via through-holes[5] or on manifold rail					
Mounting position	Optional					
Nominal width [mm]	2		1.4	2		
Standard nominal flow rate [l/min]	100		80	90		
Flow rate on manifold rail [l/min]	100		80	90		
Switching time on/off [ms]	7/15	–	7/21	8/25		
Changeover time [ms]	–	5	–	14		
Size [mm]	10					
Ports 1, 2, 3, 4, 5, 12/14	M3					
Product weight [g]	38	49	37			
Approval certificate	c UL us - Recognized(OL)					
	c CSA us (OL)					
	RCM mark					
CE marking (see declaration of conformity)[6]	To EU EMC Directive					
Corrosion resistance class CRC[7]	2					

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurized
3) E=Mid-position exhausted
4) Combined reset method
5) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.
6) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
7) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Solenoid valves VUVG-L10A and VUVG-S10A, in-line valves M3

Technical data

Operating and environmental conditions						
Valve function			M52-R[1]	B52	M52-M[2]	P53
Operating medium			Compressed air to ISO 8573-2010 [7:4:4]			
Operating pressure	Internal	[bar]	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
	External	[bar]	–0.9 ... 10			–0.9 ... 8
Pilot pressure[3)]		[bar]	2.5 ... 8	1.5 ... 8	3 ... 8	
Ambient temperature		[°C]	–5 ... +50, with holding current reduction –5 ... +60			
Temperature of medium		[°C]	–5 ... +50, with holding current reduction –5 ... +60			

1) Mixed, pneumatic/mechanical spring
2) Mechanical spring
3) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via electrical sub-base ➔ Page 112
Operating voltage	[DC V]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)

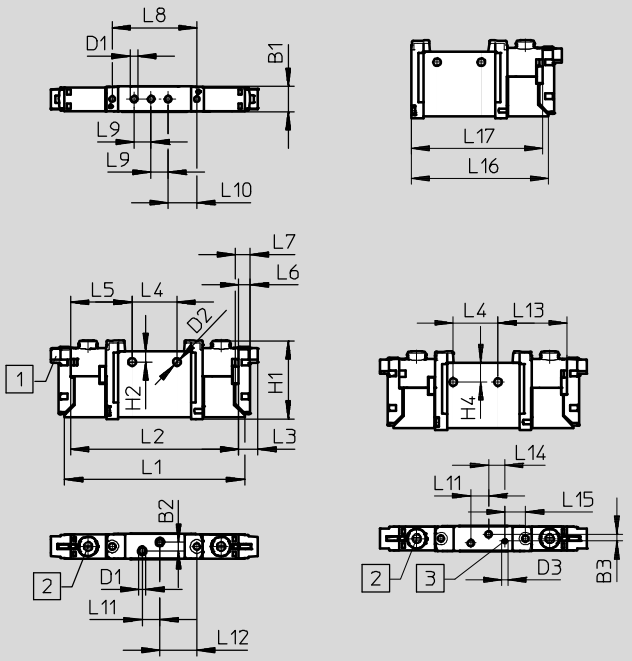
Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

Solenoid valves VUVG-L10A and VUVG-S10A, in-line valves M3

Technical data

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

5/2-way and 5/3-way valve



- Note

More dimensions
Electrical sub-bases
➔ Page 114

1 Electrical connection for solenoid valve, horizontal

2 Manual override

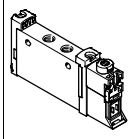
3 Connection for external pilot air supply

Type	B1	B2	B3	D1	D2	D3	H1	H2	L1	L2	L3	L4	L5
VUVG-L10A-...-M3...	10.2	3.6	2.83	M3	3.2	M3	32.5	4.4	74.3	69.3	8	18.5	25.4
VUVG-S10A-...-M3...													

Type	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17
VUVG-L10A-...-M3...	4.85	6.15	34.9	7	11.9	7.3	15.25	28.5	6.7	8.54	57.06	54.56
VUVG-S10A-...-M3...												

Solenoid valves VUVG-L10A and VUVG-S10A, in-line valves M3

Ordering data

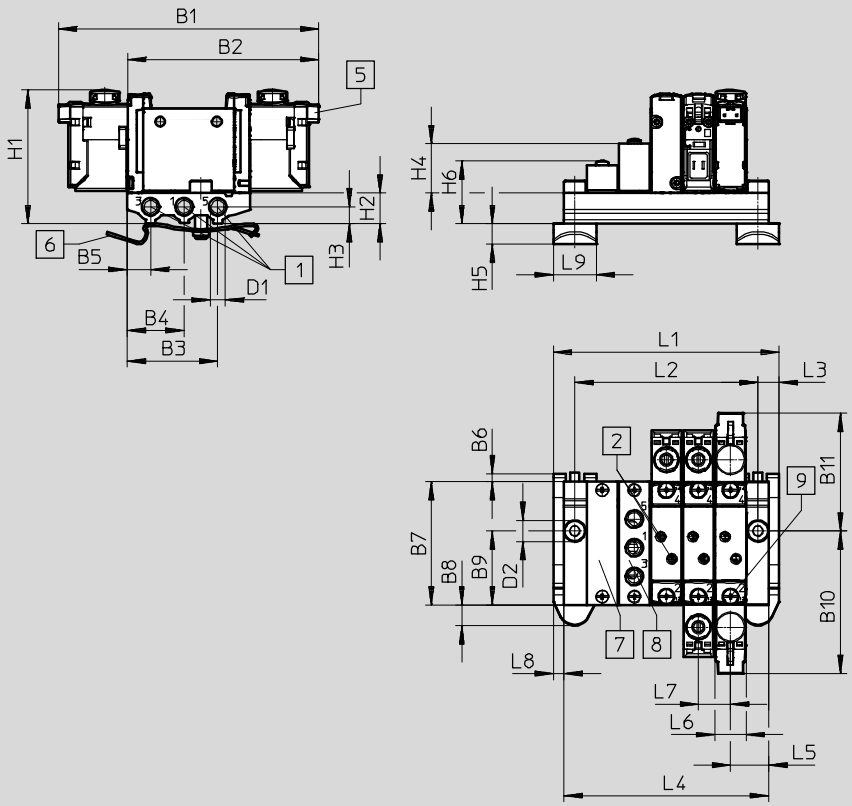
Ordering data				
	Description		Part no.	Type
In-line valve M3, without electrical sub-base				
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	**566437**	**VUVG-L10A-M52-RT-M3-1P3**
		Reset method: mechanical spring	**574345**	**VUVG-L10A-M52-MT-M3-1P3**
	External pilot air supply	Reset method: pneumatic/mechanical spring	**566443**	**VUVG-L10A-M52-RZT-M3-1P3**
		Reset method: mechanical spring	**574346**	**VUVG-L10A-M52-MZT-M3-1P3**
	5/2-way valve, double solenoid			
	Internal pilot air supply		**566438**	**VUVG-L10A-B52-T-M3-1P3**
	External pilot air supply		**566444**	**VUVG-L10A-B52-ZT-M3-1P3**
	5/3-way valve			
	Internal pilot air supply	Mid-position closed, mechanical spring reset method	**566439**	**VUVG-L10A-P53C-T-M3-1P3**
		Mid-position exhausted, mechanical spring reset method	**566440**	**VUVG-L10A-P53E-T-M3-1P3**
		Mid-position pressurized, mechanical spring reset method	**566441**	**VUVG-L10A-P53U-T-M3-1P3**
	External pilot air supply	Mid-position closed, mechanical spring reset method	**566445**	**VUVG-L10A-P53C-ZT-M3-1P3**
		Mid-position exhausted, mechanical spring reset method	**566446**	**VUVG-L10A-P53E-ZT-M3-1P3**
		Mid-position pressurized, mechanical spring reset method	**566447**	**VUVG-L10A-P53U-ZT-M3-1P3**

Solenoid valves VUVG-S10A, in-line valves M3

Manifold assembly

In-line valves for manifold assembly

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



- Note

More dimensions
Electrical sub-bases
➔ Page 114

1 Ports 1, 3, 5
2 Ports 2 and 4
5 Electrical connection for electrical sub-bases and accessories

6 H-rail mounting (two M4x16 screws are required for attachment)

7 Cover plate
8 Supply plate

9 Valves/blanking plate mounting on manifold rail

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	D1
VABM-L1-10AS-M5	85.3	62.6	29.7	18.7	7.7	3	40.3	6.8	24.2	46.7	38.6	M5

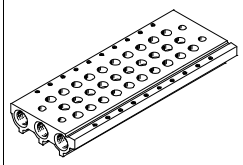
Type	D2	H1	H2	H3	H4	H5	H6	L3	L5	L6	L7	L8	L9
VABM-L1-10AS-M5	Ø 4.5	43.8	10	5.5	16.2	6.8	20.3	7	12.5	10.3	10.5	3.5	14

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1	42.5	53	63.5	74	84.5	95	105.5	116	126.5	147.5	168.5	189.5
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	133.5	154.5	175.5
L4	35.5	46	56.5	67	77.5	88	98.5	109	119.5	140.5	161.5	182.5
VABM weight [g]	26	34	42	50	58	66	74	82	90	106	122	138

Solenoid valves VUVG-S10A, in-line valves M3

Ordering data

Technical data – Manifold rails

	Ports	CRC	Material[2]	Operating pressure [bar]	Max. tightening torque for assembly [Nm]		
	1, 3, 5				Valve	H-rail	Wall
	M5	2[1]	Wrought aluminium alloy	–0.9 ... 10	0.45	1.5	3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
2) Note on materials: RoHS-compliant.

Order code – Manifold rails

VABM	–	L1	–	10A	S	–	M5	–	

Valve manifold parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

size	
10 mm	**10A**

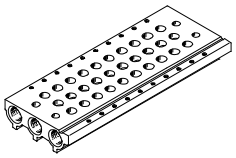
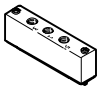
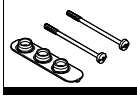
Manifold rail with port 1, 3, 5	
For in-line valves M3	**S**

Ports 1, 3, 5	
M5	M5 thread

Number of valve positions	
	2 to 10, 12, 14 and 16

Solenoid valves VUVG-S10A, in-line valves M3

Ordering data

Ordering data – Manifold rail				
	Description		Part no.	Type
Manifold rail for in-line valves (manifold assembly)				
	For size M3	2 valve positions	**566522**	**VABM-L1-10AS-M5-2**
		3 valve positions	**566523**	**VABM-L1-10AS-M5-3**
		4 valve positions	**566524**	**VABM-L1-10AS-M5-4**
		5 valve positions	**566525**	**VABM-L1-10AS-M5-5**
		6 valve positions	**566526**	**VABM-L1-10AS-M5-6**
		7 valve positions	**566527**	**VABM-L1-10AS-M5-7**
		8 valve positions	**566528**	**VABM-L1-10AS-M5-8**
		9 valve positions	**566529**	**VABM-L1-10AS-M5-9**
		10 valve positions	**566530**	**VABM-L1-10AS-M5-10**
		12 valve positions	**566531**	**VABM-L1-10AS-M5-12**
		14 valve positions	**566532**	**VABM-L1-10AS-M5-14**
		16 valve positions	**566533**	**VABM-L1-10AS-M5-16**
Cover plate				Technical data ➔ Internet: vabb
	For valve position on manifold rail, including screws and seal		**569986**	**VABB-L1-10A**
Separator				Technical data ➔ Internet: vabd
	For creating pressure zones		**570872**	**VABD-4.2-B**
Supply plate				Technical data ➔ Internet: vabf
	For valve position on manifold rail, including screws and seal		**569990**	**VABF-L1-10A-P3A4-M5**
Seals for in-line valves				Technical data ➔ Internet: vabd
	For in-line valves M3	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**566670**	**VABD-L1-10AX-S-M3**

Solenoid valves VUVG, in-line valves M5/M7

Type code

VUVG	–			10	–		–				–		–

Valve type	
In-line valve	L
Semi in-line valve	S

Design	
Piston slide with sealing cartridge	–
Piston slide with sealing ring	K

size	
10 mm	10

Valve function	
5/2-way valve, bistable	B52
5/2-way valve, single solenoid,	M52
5/3-way valve, mid-position closed	P53C
5/3-way valve, mid-position exhausted	P53E
5/3-way valve, mid-position pressurized	P53U
2x 3/2-way valve, normally closed	T32C
2x 3/2-way valve, normal position 1x normally open, 1x normally closed	T32H
2x 3/2-way valve, normally open	T32U

Reset method	
Pneumatic spring with T32 and M52	A
Mechanical spring with T32 and M52	M
Pneumatic mechanical spring with M52	R
With B52 and P53	–

Pilot air	
Internal	–
External	Z

Manual override	
Non-detenting	H
Covered	S
Non-detenting, detenting	T
Detenting, without accessories	Y

Pneumatic connection	
M5 thread	M5
M7 thread	M7
Push-in connector 3 mm/M5	Q3
Push-in connector 4 mm/M5	Q4
Push-in connector 4 mm/M7	Q4H
Push-in connector 6 mm/M5	Q6
Push-in connector 6 mm/M7	Q6H
Push-in connector 1/8"	T18
Push-in connector 5/32"	T532
Push-in connector 3/16"	T316
Push-in connector 3/16", M7	T316H
Push-in connector 1/4"	T14
Push-in connector 1/4", M7	T14H

	–				L	–		–	

Feature	
–	Extended features
S	Core features

Accessories for valve/connecting cable	
C1...4	Connection pattern H: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
N1...4	M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
N5...8	M8x1, 4-pin, straight: 5 = 2.5 m, 6 = 5 m; angled: 7 = 2.5 m, 8 = 5 m
S1...4	Connection pattern S, 1 = 0.5 m, 2 = 1 m, 3 = 2.5, 4 = 5 m
W1...4	Connection pattern H, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
WS1...4	Connection pattern S with flying leads, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m

Advertisement	
L	LED

Circuitry	
–	Without holding current reduction (HCR)
R	With holding current reduction (HCR)

Electrical connection	
H2	Connection pattern H, horizontal plug connector
H3	Connection pattern H, vertical plug
K6...9	Cables: 6 = 0.5 m, 7 = 1 m, 8 = 2.5 m, 9 = 5 m
L1...4	with 2x flying lead: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
P3	Without electrical sub-base
R1	Individual plug connector M8, 4-pin
R8	Individual plug connector M8, 3-pin
S2	Connection pattern S, horizontal plug connector
S3	Connection pattern S, vertical connector

Nominal operating voltage	
1	24 V DC
4	5 V DC
5	12 V DC

Exhausting with VUVG-L	
QN	Push-in fitting
U	Pneumatic silencers
–	M5/M7 thread

Solenoid valves VUVG-LK10, in-line valves M5

Technical data

Function
2x 3/2C
5/2-way, single solenoid
5/2-way, double solenoid valve

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
180 ... 195 l/min

Voltage
24 V DC

General Technical data VUVG-LK				
Valve function		T32-A	M52-A	B52
Normal position		C[1]	–	–
Stable position		Single solenoid		Bistable
Reset method: pneumatic spring		Yes	Yes	–
Design		Piston spool		
Sealing principle		Soft		
Actuation type		Electric		
Type of control		Pilot		
Pilot air supply		Internal		
Exhaust air function		With flow control option		
Manual override		Detenting, non-detenting		
Type of mounting		Optionally via through-holes[2] or on manifold rail		
Mounting position		Optional		
Standard nominal flow rate	[l/min]	180	195	195
Switching time on/off	[ms]	12/14	14/17	–
Changeover time	[ms]	–		7
Size	[mm]	10		
Ports 2, 4		M5		
Product weight	[g]	55	45	57
Corrosion resistance class CRC[3]		2		

1) C=Normally closed
2) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.
3) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

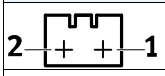
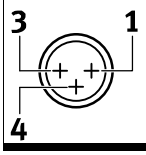
Safety data		
Max. positive test pulse with logic 0	[µs]	1600
Max. negative test pulse with logic 1	[µs]	3000
Shock resistance		Shock test with severity level 1 in accordance with FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6

Operating and environmental conditions				
Valve function		T32-A[1]	M52-A[1]	B52
Operating medium		Compressed air to ISO 8573-2010 [7:4:4]		
Note about the operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	1.5 ... 7	2.5 ... 7	1.5 ... 7
Ambient temperature	[°C]	–5 ... +50		
Temperature of medium	[°C]	–5 ... +50		

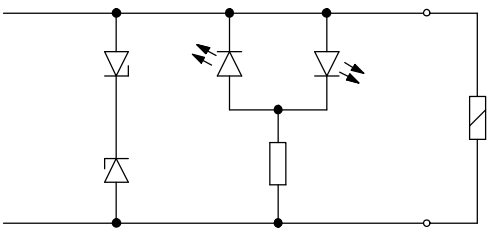
1) Pneumatic spring.

Electrical data		
Electrical connection		Via electrical sub-base ➔ Page 112
Operating voltage	[V DC]	24 ±10%
Power	[W]	0.7
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)
Signal status display		LED
Maximum switching frequency	[Hz]	2

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant
	Contains paint-wetting impairment substances

Pin allocation for electrical sub-base			
	Pin		Description
Rectangular plug connector, plug pattern H			
	1	+ or –	Protective circuit without holding current reduction
	2	+ or –	
Round plug, M8, 3-pin			
	1	Not used	Protective circuit without holding current reduction
	3	+ or –	
	4	+ or –	

Protective circuit without holding current reduction



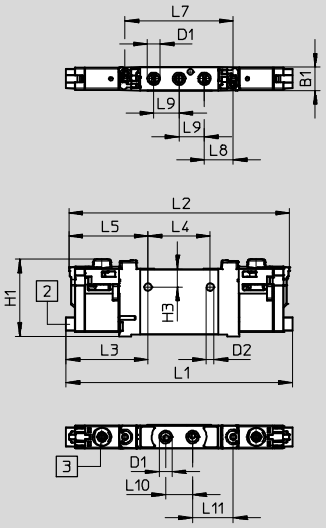
The solenoid coils are equipped with a protective circuit to arrest sparks and protect against polarity reversal.

Solenoid valves VUVG-LK10, in-line valves M5

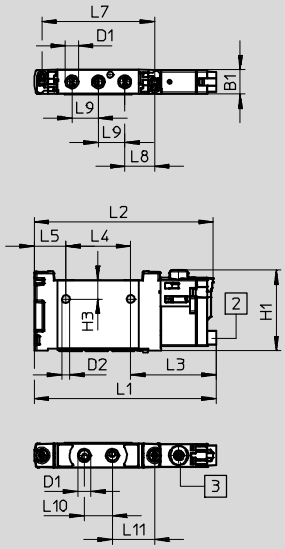
Technical data

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

2x 3/2-way, 5/2-way valve, double solenoid



5/2-way valve, single solenoid



Note

More dimensions
Electrical sub-bases
➔ Page 114

2 Horizontal electrical connection

3 Manual override

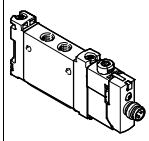
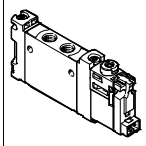
Type	B1	D1	D2	H1	H3	L1	L2	L3	L4
VUVG-LK10-T32C-...-M5...	10.2	M5	3.3	33.6	7.8	98.3	95.8	35.7	27
VUVG-LK10-B52-...-M5...									
VUVG-LK10-M52-...-M5...						75.9	74.6		

Type	L5	L7	L8	L9	L10	L11
VUVG-LK10-T32C-...-M5...	34.4	47	12.5	11	11.7	17.7
VUVG-LK10-B52-...-M5...						
VUVG-LK10-M52-...-M5...	13.2					

Solenoid valves VUVG-LK10, in-line valves M5

Ordering data

★ Core product range

Ordering data				
	Description		Part no.	Type
In-line valve M5, with electrical sub-base R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ 8042542	VUVG-LK10-T32C-AT-M5-1R8L-S
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	★ 8042543	VUVG-LK10-M52-AT-M5-1R8L-S
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ 8042544	VUVG-LK10-B52-T-M5-1R8L-S
In-line valve M5, with electrical sub-base H2				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ 8042538	VUVG-LK10-T32C-AT-M5-1H2L-S
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	★ 8042539	VUVG-LK10-M52-AT-M5-1H2L-S
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ 8042540	VUVG-LK10-B52-T-M5-1H2L-S

Festo core product range

★ Generally ready for shipping ex works in 24 hours

☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-LK10, in-line valves M7

Technical data

Function
2x 3/2C
5/2-way, single solenoid
5/2-way, double solenoid valve

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
280 ... 340 l/min

Voltage
24 V DC

General Technical data VUVG-LK				
Valve function		T32-A	M52-A	B52
Normal position		C[1]	–	–
Stable position		Single solenoid		Bistable
Reset method: pneumatic spring		Yes	Yes	–
Design		Piston spool		
Sealing principle		Soft		
Actuation type		Electric		
Type of control		Pilot		
Pilot air supply		Internal		
Exhaust air function		With flow control option		
Manual override		Detenting, non-detenting		
Type of mounting		Optionally via through-holes[2] or on manifold rail		
Mounting position		Optional		
Standard nominal flow rate	[l/min]	280	340	340
Switching time on/off	[ms]	12/14	14/17	–
Changeover time	[ms]	–		7
Size	[mm]	10		
Ports 2, 4		M7		
Product weight	[g]	55	45	57
Corrosion resistance class CRC[3]		2		

1) C=Normally closed
2) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.
3) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Safety data		
Max. positive test pulse with logic 0	[µs]	1600
Max. negative test pulse with logic 1	[µs]	3000
Shock resistance		Shock test with severity level 1 in accordance with FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6

Solenoid valves VUVG-LK10, in-line valves M7

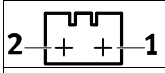
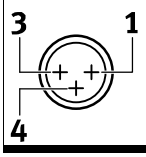
Technical data

Operating and environmental conditions				
Valve function		T32-A[1]	M52-A[1]	B52
Operating medium		Compressed air to ISO 8573-2010 [7:4:4]		
Note about the operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	1.5 ... 7	2.5 ... 7	1.5 ... 7
Ambient temperature	[°C]	–5 ... +50		
Temperature of medium	[°C]	–5 ... +50		

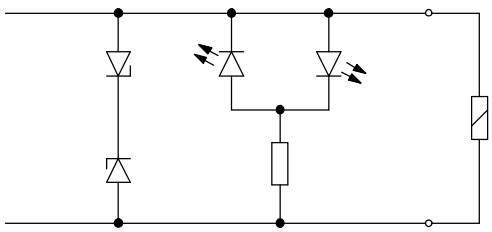
1) Pneumatic spring.

Electrical data		
Electrical connection		Via electrical sub-base ➔ Page 112
Operating voltage	[DC V]	24 ±10%
Power	[W]	0.7
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)
Signal status display		LED
Maximum switching frequency	[Hz]	2

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant
	Contains paint-wetting impairment substances

Pin allocation for electrical sub-base			
	Pin		Description
Rectangular plug connector, plug pattern H			
	1	+ or –	Protective circuit without holding current reduction
	2	+ or –	
Round plug, M8, 3-pin			
	1	Not used	Protective circuit without holding current reduction
	3	+ or –	
	4	+ or –	

Protective circuit without holding current reduction



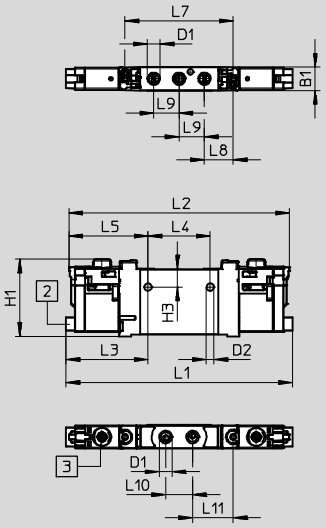
The solenoid coils are equipped with a protective circuit to arrest sparks and protect against polarity reversal.

Solenoid valves VUVG-LK10, in-line valves M7

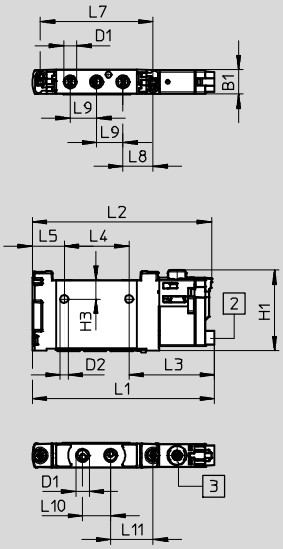
Technical data

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

2x 3/2-way, 5/2-way valve, double solenoid



5/2-way valve, single solenoid



Note

More dimensions
Electrical sub-bases
➔ Page 114

2 Horizontal electrical connection

3 Manual override

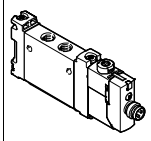
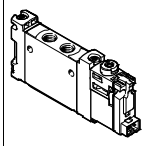
Type	B1	D1	D2	H1	H3	L1	L2	L3	L4
VUVG-LK10-T32C-...-M7...	10.2	M7	3.3	33.6	7.8	98.3	95.8	35.7	27
VUVG-LK10-B52-...-M7...									
VUVG-LK10-M52-...-M7...						75.9	74.6	35.7	

Type	L5	L7	L8	L9	L10	L11
VUVG-LK10-T32C-...-M7...	34.4	47	12.5	11	11.7	17.7
VUVG-LK10-B52-...-M7...						
VUVG-LK10-M52-...-M7...	13.2					

Solenoid valves VUVG-LK10, in-line valves M7

Ordering data

★ Core product range

Ordering data				
	Description		Part no.	Type
In-line valve M7, with electrical sub-base R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ **8042550**	**VUVG-LK10-T32C-AT-M7-1R8L-S**
	5/2-way valve, single solenoid,			
	Internal pilot air supply	Reset method: pneumatic spring	★ **8042551**	**VUVG-LK10-M52-AT-M7-1R8L-S**
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ **8042552**	**VUVG-LK10-B52-T-M7-1R8L-S**
In-line valve M7, with electrical sub-base H2				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ **8042546**	**VUVG-LK10-T32C-AT-M7-1H2L-S**
	5/2-way valve, single solenoid,			
	Internal pilot air supply	Reset method: pneumatic spring	★ **8042547**	**VUVG-LK10-M52-AT-M7-1H2L-S**
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ **8042548**	**VUVG-LK10-B52-T-M7-1H2L-S**

Festo core product range

★ Generally ready for shipping ex works in 24 hours

☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M5

Technical data

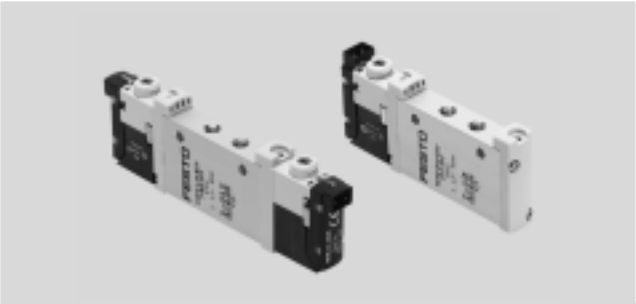
Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
125 ... 220 l/min

Voltage
5, 12 and 24 V DC



General technical data, VUVG-L M5												
Valve function		T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position		C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position		Single pilot							Double solenoid	One position	One position		
Reset method: pneumatic spring		Yes			None			Yes[5]	–	None	–		
Reset method: mechanical spring		None			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1		None			Only with external pilot air supply								
Design		Piston spool											
Sealing principle		Soft											
Type of control		Electric											
Type of control		Pilot											
Pilot air supply		Internal or external											
Exhaust function		With flow control option											
Manual override		Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting		Optionally via through-holes[6] or on manifold rail											
Mounting position		Optional											
Nominal size	[mm]	2.7			1.9	1.8		3.2		2.2	3.2		
Standard nominal flow rate	[l/min]	150			135	125	125	220		190	210		
Flow rate on manifold rail	[l/min]	150			135	125	125	220		190	210		
Switching time on/off	[ms]	6/16			8/11			7/19	–	8/24	10/30		
Changeover time	[ms]	–							7	–	15		
Size	[mm]	10											
Ports	1, 2, 3, 4, 5	M5											
	12/14	M3											
Product weight	[g]	55			54			45	55	44	55		
Approval certificate		c UL us - Recognized(OL)											
		c CSA us (OL)											
		RCM mark											
CE marking (see declaration of conformity)[7]		To EU EMC Directive											
Corrosion resistance class CRC[8]		2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
6) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.
7) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
8) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M5

Technical data

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[3]	M52-R[2]	B52	M52-M[3]	P53
Operating medium			Compressed air to ISO 8573-2010 [7:4:4]					
Operating pressure	Internal	[bar]	1.5 ... 8	2.5 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
	External	[bar]	1.5 ... 10	–0.9 ... 10			–0.9 ...8	–0.9 ... 10
Pilot pressure[4)]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
Ambient temperature		[°C]	–5 ... +50, with holding current reduction –5 ... +60					
Temperature of medium		[°C]	–5 ... +50, with holding current reduction –5 ... +60					

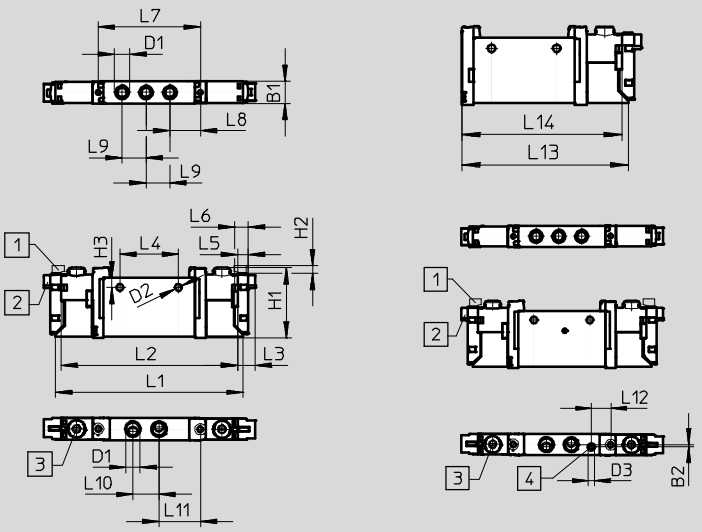
1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[DC V]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

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

2x 3/2-way, 5/2-way and 5/3-way valve



- Note

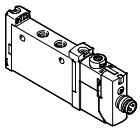
More dimensions
Electrical connection boxes
➔ Page 114

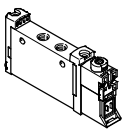
1 Vertical electrical connection
2 Horizontal electrical connection
3 Manual override
4 Port for external pilot air supply

Type	B1	B2	D1	D2	D3	H1	H2	H3	L1	L2	L3	L4
VUVG-L-10 -...-M5...	10.2	–	M5	3.2	M3	32.5	3.6	4.4	86.5	81.5	8	27
VUVG-S-10 -...-M5...												

Type	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14
VUVG-L-10 -...-M5...	4.85	6.15	47	14	11	12	19	–	69.2	66.7
VUVG-S-10 -...-M5...										

★ Core product range

Ordering data				
	Description		Part no.	Type
In-line valve M5, with E-box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ **577347**	**VUVG-L10-T32C-AT-M5-1R8L**
	5/2-way valve, single solenoid,			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	★ **572634**	**VUVG-L10-M52-RT-M5-1R8L**
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ **576664**	**VUVG-L10-B52-T-M5-1R8L**
	5/3-way valve			
	Internal pilot air supply	Mid-position closed, mechanical spring reset method	★ **577346**	**VUVG-L10-P53C-T-M5-1R8L**

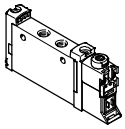
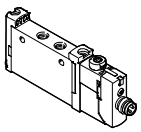
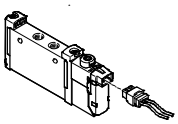
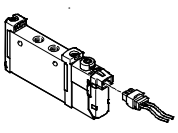
Ordering data				
	Description		Part no.	Type
In-line valve M5, without electrical connection box				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	**566454**	**VUVG-L10-T32C-AT-M5-1P3**
		Normally open, reset method: pneumatic spring	**566455**	**VUVG-L10-T32U-AT-M5-1P3**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**566456**	**VUVG-L10-T32H-AT-M5-1P3**
		Normally closed, reset method: mechanical spring	**574348**	**VUVG-L10-T32C-MT-M5-1P3**
		Normally open, reset method: mechanical spring	**574349**	**VUVG-L10-T32U-MT-M5-1P3**
		1x normally open, 1x normally closed, reset method: mechanical spring	**574350**	**VUVG-L10-T32H-MT-M5-1P3**
	External pilot air supply	Normally closed, reset method: pneumatic spring	**566463**	**VUVG-L10-T32C-AZT-M5-1P3**
		Normally open, reset method: pneumatic spring	**566464**	**VUVG-L10-T32U-AZT-M5-1P3**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**566465**	**VUVG-L10-T32H-AZT-M5-1P3**
		Normally closed, reset method: mechanical spring	**574352**	**VUVG-L10-T32C-MZT-M5-1P3**
		Normally open, reset method: mechanical spring	**574353**	**VUVG-L10-T32U-MZT-M5-1P3**
		1x normally open, 1x normally closed, reset method: mechanical spring	**574354**	**VUVG-L10-T32H-MZT-M5-1P3**
	5/2-way valve, single solenoid,			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	**566457**	**VUVG-L10-M52-RT-M5-1P3**
		Reset method: mechanical spring	**574351**	**VUVG-L10-M52-MT-M5-1P3**
	External pilot air supply	Reset method: pneumatic/mechanical spring	**566466**	**VUVG-L10-M52-RZT-M5-1P3**
		Reset method: mechanical spring	**574355**	**VUVG-L10-M52-MZT-M5-1P3**

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M5

Ordering data

Ordering data				
	Description		Part no.	Type
In-line valve M5, without electrical connection box				
	5/2-way valve, double solenoid			
	Internal pilot air supply		**566458**	**VUVG-L10-B52-T-M5-1P3**
	External pilot air supply		**566467**	**VUVG-L10-B52-ZT-M5-1P3**
	5/3-way valve			
	Internal pilot air supply	Mid-position closed, mechanical spring reset method	**566459**	**VUVG-L10-P53C-T-M5-1P3**
		Mid-position exhausted, mechanical spring reset method	**566460**	**VUVG-L10-P53E-T-M5-1P3**
		Mid-position pressurized, mechanical spring reset method	**566461**	**VUVG-L10-P53U-T-M5-1P3**
	External pilot air supply	Mid-position closed, mechanical spring reset method	**566468**	**VUVG-L10-P53C-ZT-M5-1P3**
		Mid-position exhausted, mechanical spring reset method	**566469**	**VUVG-L10-P53E-ZT-M5-1P3**
		Mid-position pressurized, mechanical spring reset method	**566470**	**VUVG-L10-P53U-ZT-M5-1P3**
In-line valve M5, with electrical connection box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally open, reset method: pneumatic spring	**8031466**	**VUVG-L10-T32U-AT-M5-1R8L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**8031467**	**VUVG-L10-T32H-AT-M5-1R8L**
		Normally closed, reset method: mechanical spring	**8031468**	**VUVG-L10-T32C-MT-M5-1R8L**
		Normally open, reset method: mechanical spring	**8031469**	**VUVG-L10-T32U-MT-M5-1R8L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8031470**	**VUVG-L10-T32H-MT-M5-1R8L**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: mechanical spring	**8031472**	**VUVG-L10-M52-MT-M5-1R8L**
	5/3-way valve			
	Internal pilot air supply	Mid-position exhausted, mechanical spring reset method	**8031475**	**VUVG-L10-P53E-T-M5-1R8L**
		Mid-position pressurized, mechanical spring reset method	**8031476**	**VUVG-L10-P53U-T-M5-1R8L**
In-line valve M5, with electrical connection box H2				
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	**577316**	**VUVG-L10-M52-RT-M5-1H2L-W1**
		Reset method: mechanical spring	**578162**	**VUVG-L10-M52-MT-M5-1H2L-W1**
	5/2-way valve, double solenoid			
	Internal pilot air supply		**577317**	**VUVG-L10-B52-T-M5-1H2L-W1**
Semi in-line valve M5, with electrical connection box H2				
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	**577324**	**VUVG-S10-M52-RT-M5-1H2L-W1**

Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M7

Technical data

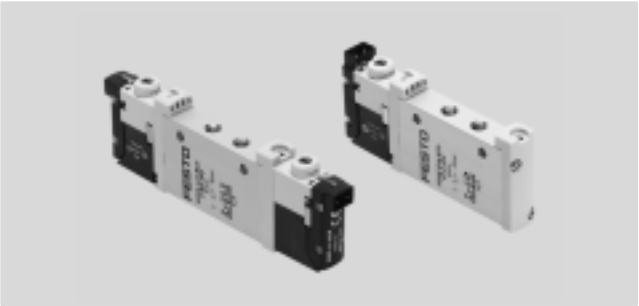
Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
170 ... 340 l/min

Voltage
5, 12 and 24 V DC



General technical data, VUVG-L M7													
Valve function			T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position			C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position			Single pilot							Double solenoid	One position	One position		
Reset method: pneumatic spring			Yes			None			Yes[5]	–	None	–		
Reset method: mechanical spring			None			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1			None			Only with external pilot air supply								
Design			Piston spool											
Sealing principle			Soft											
Type of control			Electric											
Type of control			Pilot											
Pilot air supply			Internal or external											
Exhaust function			With flow control option											
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting			Optionally via through-holes[6] or on manifold rail											
Mounting position			Optional											
Nominal size		[mm]	2.7			2.0	1.9	1.9	4.0		2.8	3.5		
Standard nominal flow rate		[l/min]	190			150	140	140	330	380	220	320		
Flow rate on manifold rail		[l/min]	170			140	130	130	330	340	220	300		
Switching time on/off		[ms]	6/16			8/11			7/19	–	8/24	10/30		
Changeover time		[ms]	–							7		15		
Size		[mm]	10											
Ports	1, 2, 3, 4, 5		M7											
	12/14		M3											
Product weight		[g]	55			54			45	55	44	55		
Approval certificate			c UL us - Recognized(OL)											
			c CSA us (OL)											
			RCM mark											
CE marking (see declaration of conformity)[7]			To EU EMC Directive											
Corrosion resistance class CRC[8]			2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
6) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.
7) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
8) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M7

Technical data

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[3]	M52-R[2]	B52	M52-M[3]	P53
Operating medium			Compressed air to ISO 8573-2010 [7:4:4]					
Operating pressure	Internal	[bar]	1.5 … 8	2.5 … 8	2.5 … 8	1.5 … 8	3 … 8	
	External	[bar]	1.5 … 10	-0.9 … 10			–0.9 … 8	–0.9 … 10
Pilot pressure[4)]		[bar]	1.5 … 8	2 …8	2.5 … 8	1.5 … 8	3 …8	3 … 8
Ambient temperature		[°C]	–5 … +50, with holding current reduction –5 … +60					
Temperature of medium		[°C]	–5 … +50, with holding current reduction –5 … +60					

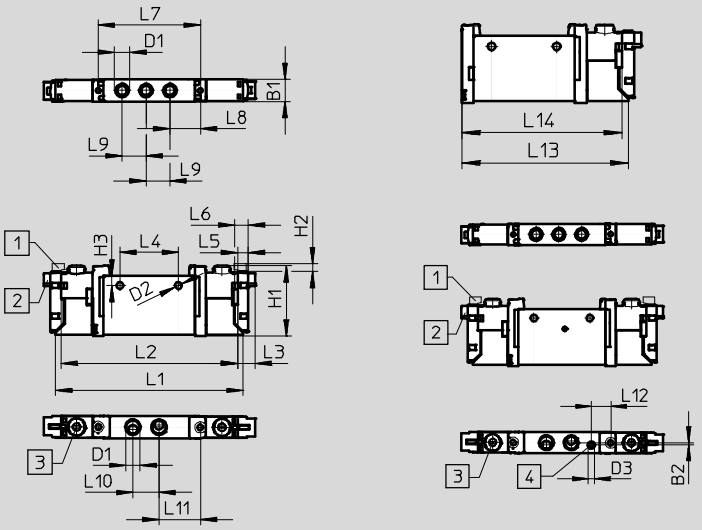
1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[DC V]	5, 12, 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

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

2x 3/2-way, 5/2-way and 5/3-way valve



- Note

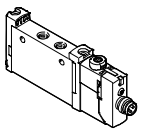
More dimensions
Electrical connection boxes
➔ Page 114

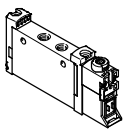
1 Vertical electrical connection
2 Horizontal electrical connection
3 Manual override
4 Port for external pilot air supply

Type	B1	B2	D1	D2	D3	H1	H2	H3	L1	L2	L3	L4
VUVG-L-10 -...-M7...	10.2	–	M7	3.2	M3	32.5	3.6	4.4	86.5	81.5	8	27
VUVG-S-10 -...-M7...												

Type	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14
VUVG-L-10 -...-M7...	4.85	6.15	47	14	11	12	19	–	69.2	66.7
VUVG-S-10 -...-M7...										

★ Core product range

Ordering data				
	Description		Part no.	Type
In-line valve M7, with E-box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ **574218**	**VUVG-L10-T32C-AT-M7-1R8L**
	5/2-way valve, single solenoid,			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	★ **574221**	**VUVG-L10-M52-RT-M7-1R8L**
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ **574222**	**VUVG-L10-B52-T-M7-1R8L**
	5/3-way valve			
	Internal pilot air supply	Mid-position closed, mechanical spring reset method	★ **574223**	**VUVG-L10-P53C-T-M7-1R8L**

Ordering data				
	Description		Part no.	Type
In-line valve M7, without electrical connection box				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	**566471**	**VUVG-L10-T32C-AT-M7-1P3**
		Normally open, reset method: pneumatic spring	**566472**	**VUVG-L10-T32U-AT-M7-1P3**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**566473**	**VUVG-L10-T32H-AT-M7-1P3**
		Normally closed, reset method: mechanical spring	**574356**	**VUVG-L10-T32C-MT-M7-1P3**
		Normally open, reset method: mechanical spring	**574357**	**VUVG-L10-T32U-MT-M7-1P3**
		1x normally open, 1x normally closed, reset method: mechanical spring	**574358**	**VUVG-L10-T32H-MT-M7-1P3**
	External pilot air supply	Normally closed, reset method: pneumatic spring	**566479**	**VUVG-L10-T32C-AZT-M7-1P3**
		Normally open, reset method: pneumatic spring	**566480**	**VUVG-L10-T32U-AZT-M7-1P3**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**566481**	**VUVG-L10-T32H-AZT-M7-1P3**
		Normally closed, reset method: mechanical spring	**574360**	**VUVG-L10-T32C-MZT-M7-1P3**
		Normally open, reset method: mechanical spring	**574361**	**VUVG-L10-T32U-MZT-M7-1P3**
		Normally closed, reset method: mechanical spring	**574362**	**VUVG-L10-T32H-MZT-M7-1P3**

Festo core product range

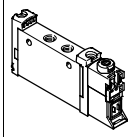
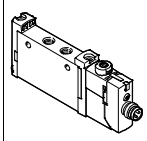
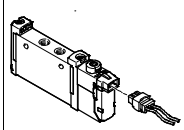
★ Generally ready for shipping ex works in 24 hours

☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M7

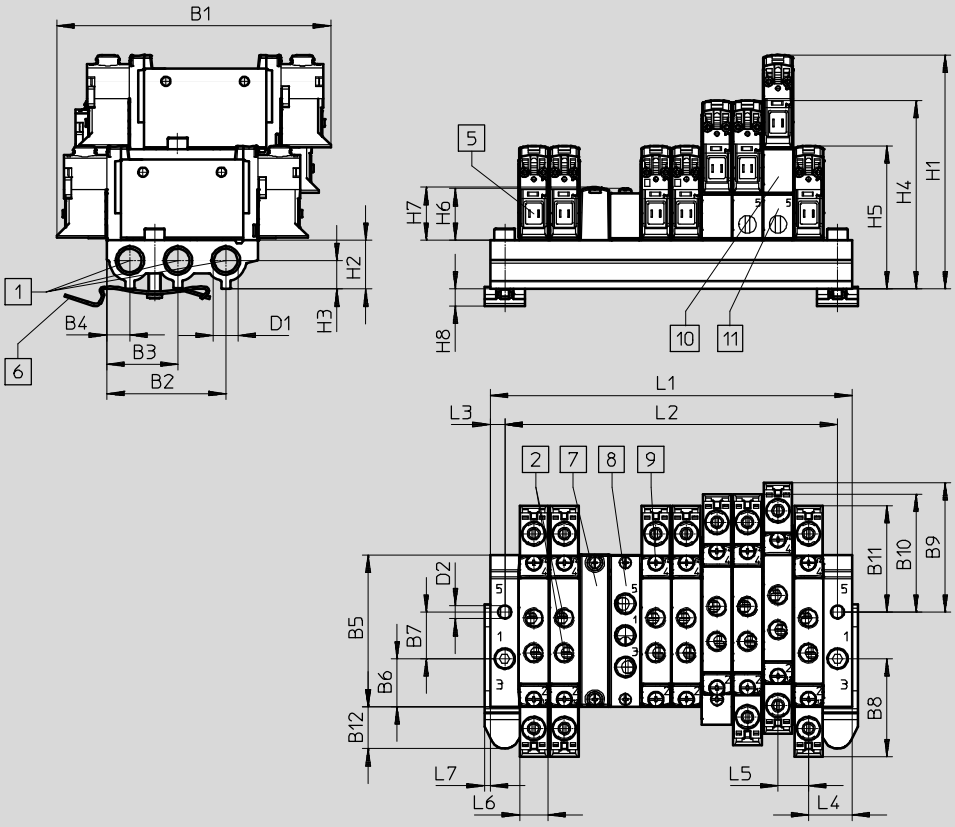
Ordering data

Ordering data

	Description		Part no.	Type
In-line valve M7, without electrical connection box				
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: mechanical spring	**574359**	**VUVG-L10-M52-MT-M7-1P3**
		Reset method: pneumatic/mechanical spring	**566474**	**VUVG-L10-M52-RT-M7-1P3**
	External pilot air supply	Reset method: mechanical spring	**574363**	**VUVG-L10-M52-MZT-M7-1P3**
		Reset method: pneumatic/mechanical spring	**566482**	**VUVG-L10-M52-RZT-M7-1P3**
	5/2-way valve, double solenoid			
	Internal pilot air supply		**566475**	**VUVG-L10-B52-T-M7-1P3**
	External pilot air supply		**566483**	**VUVG-L10-B52-ZT-M7-1P3**
	5/3-way valve			
	Internal pilot air supply	Mid-position closed, mechanical spring reset method	**566476**	**VUVG-L10-P53C-T-M7-1P3**
		Mid-position exhausted, mechanical spring reset method	**566477**	**VUVG-L10-P53E-T-M7-1P3**
		Mid-position pressurized, mechanical spring reset method	**566478**	**VUVG-L10-P53U-T-M7-1P3**
	External pilot air supply	Mid-position closed, mechanical spring reset method	**566484**	**VUVG-L10-P53C-ZT-M7-1P3**
		Mid-position exhausted, mechanical spring reset method	**566485**	**VUVG-L10-P53E-ZT-M7-1P3**
		Mid-position pressurized, mechanical spring reset method	**566486**	**VUVG-L10-P53U-ZT-M7-1P3**
In-line valve M7, with electrical connection box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally open, reset method: pneumatic spring	**574219**	**VUVG-L10-T32U-AT-M7-1R8L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**574220**	**VUVG-L10-T32H-AT-M7-1R8L**
		Normally closed, reset method: mechanical spring	**8031480**	**VUVG-L10-T32C-MT-M7-1R8L**
		Normally open, reset method: mechanical spring	**8031481**	**VUVG-L10-T32U-MT-M7-1R8L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8031482**	**VUVG-L10-T32H-MT-M7-1R8L**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: mechanical spring	**8031485**	**VUVG-L10-M52-MT-M7-1R8L**
	5/3-way valve			
	Internal pilot air supply	Mid-position exhausted, mechanical spring reset method	**574225**	**VUVG-L10-P53E-T-M7-1R8L**
		Mid-position pressurized, mechanical spring reset method	**574224**	**VUVG-L10-P53U-T-M7-1R8L**
In-line valve M7, with electrical connection box H2				
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	**577333**	**VUVG-L10-M52-RT-M7-1H2L-W1**
		Reset method: mechanical spring	**578163**	**VUVG-L10-M52-MT-M7-1H2L-W1**
	5/2-way valve, double solenoid			
	Internal pilot air supply		**577332**	**VUVG-L10-B52-T-M7-1H2L-W1**

In-line valves for manifold assembly

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



- Note

More dimensions
Electrical connection boxes
➔ Page 114

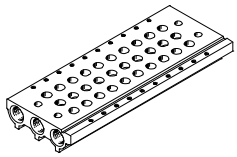
1 Ports 1, 3 and 5
2 Ports 2 and 4
5 Electrical connection for electrical sub-bases and accessories
6 H-rail mounting (two M4x20 screws are required for attachment)
7 Cover plate
8 Supply plate
9 Valves/blanking plate mounting on manifold rail
10 Vertical pressure supply plate
11 Vertical pressure exhaust plate

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
VABML-L1-10S-G18	94.3	41	24.5	8	52.1	16.5	16	33.7	44.6	40.7	36.7	14.4

Type	D1	D2	D5	H1	H2	H3	H4	H5	H6	H7	H8	L3	L4	L5	L6	L7
VABML-L1-10S-G18	G1/8	4.5	8	80.6	16.8	9.8	64.9	49.3	17.8	18	5.9	5	15	10.5	10.3	2

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16	22
L1	40.5	51	61.5	72	82.5	93	103.5	114	124.5	145.5	166.5	187.5	250.5
L2	30.5	41	51.5	62	72.5	83	93.5	104	114.5	135.5	156.5	177.5	240.5
VABM weight [g]	63	78	93	108	123	138	153	168	183	213	243	273	363

Technical data – Manifold rails

	Ports	CRC	Material[2]	Operating pressure	Max. tightening torque for assembly [Nm]		
	1, 3, 5			[bar]	Valve	H-rail	Wall
	G1/8	2[1]	Wrought aluminium alloy	–0.9 ... 10	0.45	1.5	3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
2) Note on materials: RoHS-compliant.

Order code – Manifold rails

VABM	–	L1	–	10	S	–	G18	–	

Valve manifold parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

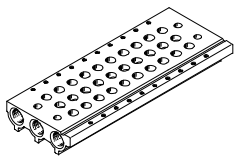
Size	
10 mm	**10**

Manifold rail with port 1, 3, 5	
For M5 and M7 in-line valves	**S**

Ports 1, 3, 5	
G18	G1/8 thread

Number of valve positions	
	2 to 10, 12, 14 and 16

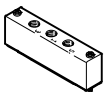
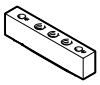
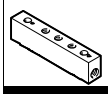
Ordering data – Manifold rail

	Description		Part no.	Type
Manifold rail for in-line valve (manifold assembly)				
	For size M5/M7	2 valve positions	★ **566558**	**VABM-L1-10S-G18-2**
		3 valve positions	★ **566559**	**VABM-L1-10S-G18-3**
		4 valve positions	★ **566560**	**VABM-L1-10S-G18-4**
		5 valve positions	**566561**	**VABM-L1-10S-G18-5**
		6 valve positions	★ **566562**	**VABM-L1-10S-G18-6**
		7 valve positions	**566563**	**VABM-L1-10S-G18-7**
		8 valve positions	★ **566564**	**VABM-L1-10S-G18-8**
		9 valve positions	**566565**	**VABM-L1-10S-G18-9**
		10 valve positions	★ **566566**	**VABM-L1-10S-G18-10**
		12 valve positions	**566567**	**VABM-L1-10S-G18-12**
		14 valve positions	**566568**	**VABM-L1-10S-G18-14**
		16 valve positions	**566569**	**VABM-L1-10S-G18-16**

Festo core product range
★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-S10, in-line valves M5/M7

Ordering data

Ordering data – Accessories				
	Description		Part no.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For valve position on manifold rail, including screws and seal		★ 566462	VABB-L1-10-S
Separator				Technical data ➔ Internet: vabd
	For creating pressure zones		569995	VABD-8-B
Supply plate				Technical data ➔ Internet: vabf
	For valve position (in-line valves M5) on manifold rail, including screws and seal		569991	VABF-L1-10-P3A4-M5
	For valve position (in-line valves M7) on manifold rail, including screws and seal		569992	VABF-L1-10-P3A4-M7
Seals				Technical data ➔ Internet: vabd
	In-line valves VUVG-LK			
	For in-line valves M5	Delivery unit: 10 sets (each with 2 screws and 1 seal)	★ 8043718	VABD-L1-10XK-S-M5-S
	For in-line valves M7		★ 8043719	VABD-L1-10XK-S-M7-S
	In-line valves VUVG-L			
	For in-line valves M5	Delivery unit: 10 sets (each with 2 screws and 1 seal)	★ 566672	VABD-L1-10X-S-M5
	For M7 in-line valves		★ 566673	VABD-L1-10X-S-M7
Vertical pressure supply plate				
	Pneumatic connection 1: M7	Terminal code CP	574592	VABF-L1-P3A3-M7
Vertical exhaust plate				
	Pneumatic connection 3, 5: M7	Terminal code CR	574594	VABF-L1-P7A13-M7

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG, in-line valve G1/8

Type code

VUVG	–			14	–		–				–		–		→

Valve type	
In-line valve	**L**
Semi in-line valve	**S**

Design	
Piston spool with sealing cartridge	–
Piston spool with sealing ring	**K**

Size	
14 mm	**14**

Valve function	
5/2-way valve, bistable	**B52**
5/2-way valve, single solenoid,	**M52**
5/3-way valve, mid-position closed	**P53C**
5/3-way valve, mid-position exhausted	**P53E**
5/3-way valve, mid-position pressurised	**P53U**
2x 3/2-way valve, normally closed	**T32C**
2x 3/2-way valve, 1x normally open, 1x normally closed	**T32H**
2x 3/2-way valve, normally open	**T32U**

Reset method	
Pneumatic spring with T32 and M52	**A**
Mechanical spring with T32 and M52	**M**
With B52 and P53	–

Pilot air	
Internal	**–**
External	**Z**

Manual override	
Non-detenting	**H**
Covered	**S**
Non-detenting, detenting	**T**
Detenting, without accessories	**Y**

Pneumatic connection	
G1/8 thread	**G18**
Push-in connector 4 mm	**Q4**
Push-in connector 6 mm	**Q6**
Push-in connector 8 mm	**Q8**
Push-in connector 1/4"	**T14**
Push-in connector 5/16"	**T516**

Exhausting with VUVG-L	
Push-in fitting	**QN**
Pneumatic silencers	**U**
G1/8 thread	**–**

Solenoid valves VUVG, in-line valve G1/8

Type code

–				L	–		–	

Feature	
–	Extended features
S	Core features

Accessories for valve/connecting cable	
C1...4	Connection pattern H: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
N1...4	M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
N5...8	M8x1, 4-pin, straight: 5 = 2.5 m, 6 = 5 m; angled: 7 = 2.5 m, 8 = 5 m
S1...4	Connection pattern S, 1 = 0.5 m, 2 = 1 m, 3 = 2.5, 4 = 5 m
W1...4	Connection pattern H, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
WS1...4	Connection pattern S with flying leads, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m

Advertisement	
L	LED

Circuitry	
–	Without holding current reduction (HCR)
R	With holding current reduction (HCR)

Electrical connection	
H2	Connection pattern H, horizontal plug connector
H3	Connection pattern H, vertical plug
K6...9	Cables: 6 = 0.5 m, 7 = 1 m, 8 = 2.5 m, 9 = 5 m
L1...4	with 2x flying lead: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
P3	Without E-box
R1	Individual plug connector M8, 4-pin
R8	Individual plug connector M8, 3-pin
S2	Connection pattern S, horizontal plug connector
S3	Connection pattern S, vertical connector

Nominal operating voltage	
1	24 V DC
4	5 V DC
5	12 V DC

Solenoid valves VUVG-LK14, in-line valves G1/8

Technical data

Function
2x 3/2C
5/2-way, single solenoid
5/2-way valve, bistable

Circuit symbol ➔ Page 13

Size 14 mm

Flow rate
570 ... 660 l/min

Voltage
24 V DC

General Technical data VUVG-LK				
Valve function		T32-A	M52-A	B52
Normal position		C[1]	–	–
Stable position		Single pilot		Bistable
Reset method: pneumatic spring		Yes	Yes	–
Design		Piston spool		
Sealing principle		Soft		
Type of control		Electric		
Type of control		Pilot		
Pilot air supply		Internal		
Exhaust air function		With flow control option		
Manual override		Non-detenting, detenting		
Type of mounting		Optionally via through-holes[2] or on manifold rail		
Mounting position		Optional		
Standard nominal flow rate	[l/min]	570	660	660
Switching time on/off	[ms]	13/20	14/24	–
Changeover time	[ms]	–		8
Size	[mm]	14		
Ports 2, 4		G1/8		
Product weight	[g]	75	65	85
Corrosion resistance class CRC[3]		2		

1) C=Normally closed
2) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.
3) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Safety data		
Max. positive test pulse with 0 signal	[µs]	1600
Max. negative test pulse with 1 signal	[µs]	3000
Shock resistance		Shock test with severity level 1 in accordance with FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6

Solenoid valves VUVG-LK14, in-line valves G1/8

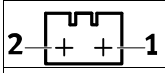
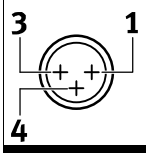
Technical data

Operating and environmental conditions				
Valve function		T32-A[1]	M52-A[1]	B52
Operating medium		Compressed air to ISO 8573-2010 [7:4:4]		
Note about the operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	1.5 ... 7	2.5 ... 7	1.5 ... 7
Ambient temperature	[°C]	–5 ... +50		
Temperature of medium	[°C]	–5 ... +50		

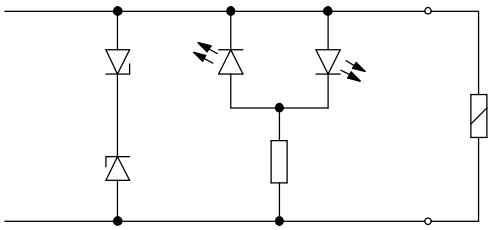
1) Pneumatic spring.

Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[DC V]	24 ±10%
Power	[W]	0.7
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)
Signal status display		LED
Maximum switching frequency	[Hz]	2

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant
	Contains paint-wetting impairment substances

Pin allocation for electrical connection box			
	Pin		Description
Rectangular plug connector, plug pattern H			
	1	+ or –	Protective circuit without holding current reduction
	2	+ or –	
Round plug, M8, 3-pin			
	1	Not used	Protective circuit without holding current reduction
	3	+ or –	
	4	+ or –	

Protective circuit without holding current reduction



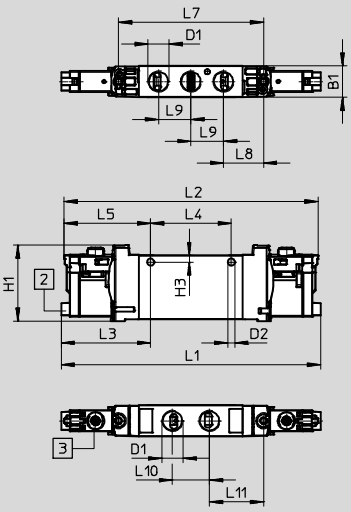
The solenoid coils are equipped with a protective circuit to arrest sparks and protect against polarity reversal.

Solenoid valves VUVG-LK14, in-line valves G1/8

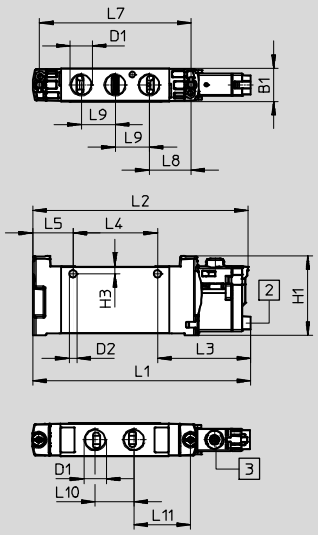
Technical data

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

2x 3/2-way, 5/2-way valve, double solenoid



5/2-way valve, single solenoid



- Note

More dimensions
Electrical connection boxes
➔ Page 114

2 Horizontal electrical connection

3 Manual override

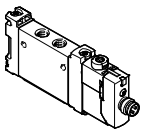
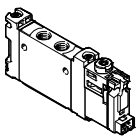
Type	B1	D1	D2	H1	H3	L1	L2	L3	L4	L5
VUVG-LK14-T32C...-G18...	14.4	G1/8	3.3	34.8	3.2	118.9	116.4	41	37	39.7
VUVG-LK14-B52...-G18...										
VUVG-LK14-M52...-G18...						95.6	94.4			17.7

Type	L7	L8	L9	L10	L11
VUVG-LK14-T32C...-G18...	66.5	18.4	14.9	17	24.8
VUVG-LK14-B52...-G18...					
VUVG-LK14-M52...-G18...					

Solenoid valves VUVG-LK14, in-line valves G1/8

Ordering data

★ Core product range

Ordering data				
	Description		Part no.	Type
In-line valve G1/8, with electrical connection box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ **8042566**	**VUVG-LK14-T32C-AT-G18-1R8L-S**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	★ **8042567**	**VUVG-LK14-M52-AT-G18-1R8L-S**
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ **8042568**	**VUVG-LK14-B52-T-G18-1R8L-S**
In-line valve G1/8, with electrical connection box H2				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ **8042562**	**VUVG-LK14-T32C-AT-G18-1H2L-S**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	★ **8042563**	**VUVG-LK14-M52-AT-G18-1H2L-S**
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ **8042564**	**VUVG-LK14-B52-T-G18-1H2L-S**

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-L14 and VUVG-S14, in-line valves G1/8

Technical data

Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 14 mm

Flow rate
480 ... 780 l/min

Voltage
5, 12 and 24 V DC

General Technical data VUVG-L														
Valve function			T32-A			T32-M			M52-A	B52	M52-M	P53		
Normal position			C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position			Single pilot							Double solenoid	One position			
Reset method: pneumatic spring			Yes			None			Yes	–	None	–		
Reset method: mechanical spring			None			Yes			None	–	Yes	Yes		
Vacuum operation at port 1			None			Only with external pilot air supply								
Size		[mm]	14											
Design			Piston spool											
Sealing principle			Soft											
Type of control			Electric											
Type of control			Pilot											
Pilot air supply			Internal or external											
Exhaust function			With flow control option											
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting			Optionally via through-holes[5] or on manifold rail											
Mounting position			Optional											
Nominal size		[mm]	4.6			4.3			5.6	5.6	5.6	5.6		
Standard nominal flow rate		[l/min]	560	600	590	550	500	500	780	780	780	650	560	
Flow rate on manifold rail		[l/min]	560	580		520	480	480	680	700	700	620	560	
Switching time	On/off	[ms]	8/23			15/11			14/22	–	13/40	12/40		
	Changeover	[ms]	–							8	–	20		
Pneumatic connection	1, 2, 3, 4, 5		G1/8											
	12/14		M5											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.

Solenoid valves VUVG-L14 and VUVG-S14, in-line valves G1/8

Technical data

General technical data VUVG-L							
Valve function		T32-A	T32-M	M52-A	B52	M52-M	P53
Product weight	[g]	89	80	78	89	70	89
Certification		c UL us - Recognized (OL)					
		c CSA us (OL)					
		RCM mark					
CE mark (see declaration of conformity)[1)]		To EU EMC Directive					
Corrosion resistance class CRC[2)]		2					

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[2]	M52-A[1]	B52	M52-M[2]	P53
Operating medium			Compressed air to ISO 8573-2010 [7:4:4]					
Operating pressure	Internal	[bar]	1.5 ... 8	3 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
	External	[bar]	1.5... 10	–0.9... 10			–0.9... 8	–0.9... 10
Pilot pressure[3)]		[bar]	1.5 ... 8	3.5 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
Ambient temperature		[°C]	–5 ... +50, with holding current reduction –5 ... +60					
Temperature of medium		[°C]	–5 ... +50, with holding current reduction –5 ... +60					

1) Pneumatic spring.
2) Mechanical spring.
3) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)

Safety data		
Max. positive test pulse with 0 signal	[µs]	700
Max. negative test pulse with 1 signal	[µs]	900
Shock resistance		Shock test with severity level 2 in accordance with FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6

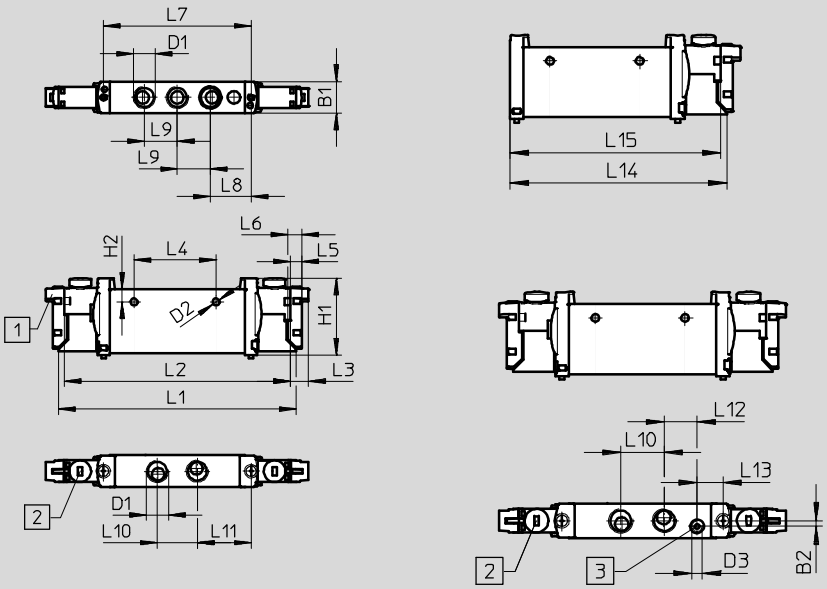
Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

Solenoid valves VUVG-L14 and VUVG-S14, in-line valves G1/8

Technical data

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

2x 3/2-way, 5/2-way and 5/3-way valve



- Note

More dimensions
Electrical connection boxes
➔ Page 114

1 Horizontal electrical connection

2 Manual override

3 Connection for external pilot air supply

Type	B1	B2	D1	D2 Ø	D3	H1	H2	L1	L2	L3	L4	L5	L6
VUVG-L14 -...-G18...	14.4	2.3	G1/8	3.2	–	34.8	5.8	107	102	8	37	4.85	6.2
VUVG-S14 -...-G18...													

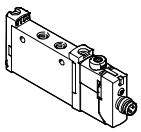
Type	L7	L8	L9	L10	L11	L12	L13	L14	L15
VUVG-L14 -...-G18...	66.5	18.35	14.9	18	24.3	13.5	10.8	89.4	87
VUVG-S14 -...-G18...									

Solenoid valves VUVG-L14 and VUVG-S14, in-line valves G1/8

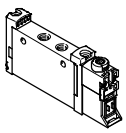
Ordering data

★ Core product range

Ordering data

	Description		Part no.	Type
In-line valve G1/8, with electrical connection box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ 574226	VUVG-L14-T32C-AT-G18-1R8L
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	★ 574229	VUVG-L14-M52-AT-G18-1R8L
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ 574230	VUVG-L14-B52-T-G18-1R8L
	5/3-way valve			
	Internal pilot air supply	Mid-position closed, mechanical spring reset method	★ 574231	VUVG-L14-P53C-T-G18-1R8L

Ordering data

	Description		Part no.	Type
In-line valve G1/8, without electrical connection box				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	566496	VUVG-L14-T32C-AT-G18-1P3
		Normally open, reset method: pneumatic spring	566497	VUVG-L14-T32U-AT-G18-1P3
		1x normally open, 1x normally closed, reset method: pneumatic spring	566498	VUVG-L14-T32H-AT-G18-1P3
		Normally closed, reset method: mechanical spring	574368	VUVG-L14-T32C-MT-G18-1P3
		Normally open, reset method: mechanical spring	574369	VUVG-L14-T32U-MT-G18-1P3
		1x normally open, 1x normally closed, reset method: mechanical spring	574370	VUVG-L14-T32H-MT-G18-1P3
	External pilot air supply	Normally closed, reset method: pneumatic spring	566505	VUVG-L14-T32C-AZT-G18-1P3
		Normally open, reset method: pneumatic spring	566506	VUVG-L14-T32U-AZT-G18-1P3
		1x normally open, 1x normally closed, reset method: pneumatic spring	566507	VUVG-L14-T32H-AZT-G18-1P3
		Normally closed, reset method: mechanical spring	574372	VUVG-L14-T32C-MZT-G18-1P3
		Normally open, reset method: mechanical spring	574373	VUVG-L14-T32U-MZT-G18-1P3
		Normally closed, reset method: mechanical spring	574374	VUVG-L14-T32H-MZT-G18-1P3
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	566499	VUVG-L14-M52-AT-G18-1P3
		Reset method: mechanical spring	574371	VUVG-L14-M52-MT-G18-1P3
	External pilot air supply	Reset via pneumatic spring	566508	VUVG-L14-M52-AZT-G18-1P3
		Reset method: mechanical spring	574375	VUVG-L14-M52-MZT-G18-1P3
	5/2-way valve, double solenoid			
	Internal pilot air supply		566500	VUVG-L14-B52-T-G18-1P3
	External pilot air supply		566509	VUVG-L14-B52-ZT-G18-1P3

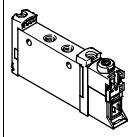
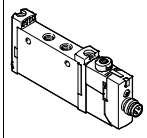
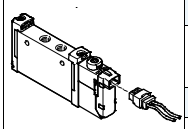
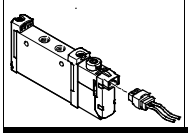
Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-L14 and VUVG-S14, in-line valves G1/8

Ordering data

Ordering data

	Description		Part no.	Type
In-line valve G1/8, without electrical connection box				
	5/3-way valve			
	Internal pilot air supply	Mid-position closed, mechanical spring reset method	**566501**	**VUVG-L14-P53C-T-G18-1P3**
		Mid-position exhausted, mechanical spring reset method	**566502**	**VUVG-L14-P53E-T-G18-1P3**
		Mid-position pressurized, mechanical spring reset method	**566503**	**VUVG-L14-P53U-T-G18-1P3**
	External pilot air supply	Mid-position closed, mechanical spring reset method	**566510**	**VUVG-L14-P53C-ZT-G18-1P3**
		Mid-position exhausted, mechanical spring reset method	**566511**	**VUVG-L14-P53E-ZT-G18-1P3**
		Mid-position pressurized, mechanical spring reset method	**566512**	**VUVG-L14-P53U-ZT-G18-1P3**
In-line valve G1/8, with electrical connection box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally open, reset method: pneumatic spring	**574227**	**VUVG-L14-T32U-AT-G18-1R8L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**574228**	**VUVG-L14-T32H-AT-G18-1R8L**
		Normally closed, reset method: mechanical spring	**8031504**	**VUVG-L14-T32C-MT-G18-1R8L**
		Normally open, reset method: mechanical spring	**8031505**	**VUVG-L14-T32U-MT-G18-1R8L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8031506**	**VUVG-L14-T32H-MT-G18-1R8L**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: mechanical spring	**8031508**	**VUVG-L14-M52-MT-G18-1R8L**
	5/3-way valve			
	Internal pilot air supply	Mid-position exhausted, mechanical spring reset method	**574233**	**VUVG-L14-P53E-T-G18-1R8L**
		Mid-position pressurized, mechanical spring reset method	**574232**	**VUVG-L14-P53U-T-G18-1R8L**
In-line valve G1/8, with electrical connection box H2				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	**577321**	**VUVG-L14-T32C-AT-G18-1H2L-W1**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	**576256**	**VUVG-L14-M52-AT-G18-1H2L-W1**
		Reset method: mechanical spring	**578164**	**VUVG-L14-M52-MT-G18-1H2L-W1**
	5/2-way valve, double solenoid			
	Internal pilot air supply		**577319**	**VUVG-L14-B52-T-G18-1H2L-W1**
Semi in-line valve G1/8, with electrical connection box H2				
5/2-way valve, single solenoid				
	Internal pilot air supply	Reset method: pneumatic spring	**577325**	**VUVG-S14-M52-AT-G18-1H2L-W1**

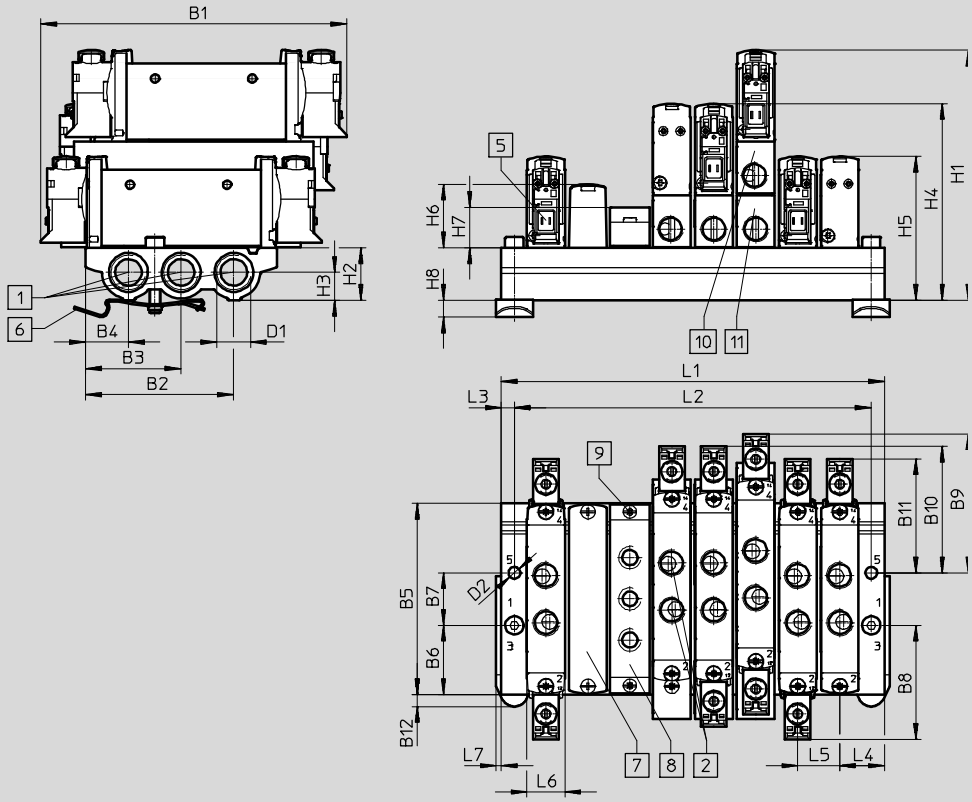
Solenoid valves VUVG-S14, in-line valves G1/8

Manifold assembly

In-line valves for manifold assembly

Dimensions

Download CAD data ➔ **www.festo.com**



Note

More dimensions
Electrical connection boxes
➔ Page 114

1 Ports 1, 3 and 5
2 Ports 2 and 4
5 Electrical connection for electrical sub-bases and accessories
6 H-rail mounting (two M4x25 screws are required for attachment)
7 Cover plate
8 Supply plate
9 Valves/blanking plate mounting on manifold rail
10 Vertical pressure supply plate
11 Vertical pressure exhaust plate

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	D1	D2
VABM-L1-14S-G14	116.6	56.6	36.5	16.4	72.9	26.5	20	43.5	53.1	48.3	43.5	4.5	G1/4	4.5

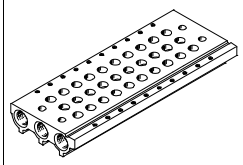
Type	H1	H2	H3	H4	H5	H6	H7	H8	L3	L4	L5	L6	L7
VABM-L1-14S-G14	95.3	20	10.6	74.9	54.8	23.9	15.4	6.5	5	17	16	14.5	2

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16	22
L1	50	66	82	98	114	130	146	162	178	210	242	274	306
L2	40	56	72	88	104	120	136	152	168	200	232	264	296
VABM weight [g]	118	159	200	241	282	323	364	405	446	528	610	692	938

Solenoid valves VUVG-S14, in-line valves G1/8

Ordering data

Technical data – Manifold rails

	Ports	CRC	Material[2]	Operating pressure [bar]	Max. tightening torque for assembly [Nm]		
	1, 3, 5				Valve	H-rail	Wall
	G1/4	2[1]	Wrought aluminium alloy	–0.9 ... 10	0.65	1.5	3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
2) Note on materials: RoHS-compliant.

Order code – Manifold rails

VABM	–	L1	–	14	S	–	G14	–	

Valve manifold parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

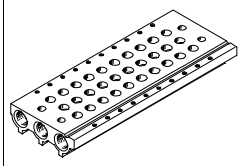
Size	
14 mm	**14**

Manifold rail with port 1, 3, 5	
For G1/8 in-line valves	**S**

Ports 1, 3, 5	
G14	G1/4 thread

Number of valve positions	
	2 to 10, 12, 14 and 16

Ordering data – Manifold rail

	Description		Part no.	Type
Manifold rail for in-line valves (manifold assembly)				
	For size G1/8	2 valve positions	★ **566618**	**VABM-L1-14S-G14-2**
		3 valve positions	★ **566619**	**VABM-L1-14S-G14-3**
		4 valve positions	★ **566620**	**VABM-L1-14S-G14-4**
		5 valve positions	**566621**	**VABM-L1-14S-G14-5**
		6 valve positions	★ **566622**	**VABM-L1-14S-G14-6**
		7 valve positions	**566623**	**VABM-L1-14S-G14-7**
		8 valve positions	★ **566624**	**VABM-L1-14S-G14-8**
		9 valve positions	**566625**	**VABM-L1-14S-G14-9**
		10 valve positions	★ **566626**	**VABM-L1-14S-G14-10**
		12 valve positions	**566627**	**VABM-L1-14S-G14-12**
		14 valve positions	**566628**	**VABM-L1-14S-G14-14**
		16 valve positions	**566629**	**VABM-L1-14S-G14-16**

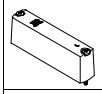
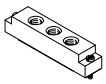
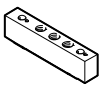
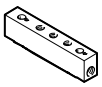
Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-S14, in-line valves G1/8

Ordering data

Ordering data – Accessories

	Description		Part no.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For valve position on manifold rail, including screws and seal		★ **569989**	**VABB-L1-14**
Separator				Technical data ➔ Internet: vabd
	For creating pressure zones		**569996**	**VABD-10-B**
Supply plate				Technical data ➔ Internet: vabf
	For valve position on manifold rail, including screws and seal		**569993**	**VABF-L1-14-P3A4-G18**
Seals for in-line valves				Technical data ➔ Internet: vabd
	In-line valves VUVG-LK			
	For G1/8 in-line valves	Delivery unit: 10 sets (each with 2 screws and 1 seal)	★ **8043720**	**VABD-L1-14XK-S-G18-S**
	In-line valves VUVG-L			
	For G1/8 in-line valves	Delivery unit: 10 sets (each with 2 screws and 1 seal)	★ **566675**	**VABD-L1-14X-S-G18**
Vertical pressure supply plate				
	Pneumatic connection 1: G1/8	Terminal code CP	**574593**	**VABF-L1-P3A3-G18**
Vertical exhaust plate				
	Pneumatic connection 3, 5: G1/8	Terminal code CR	**574595**	**VABF-L1-P7A13-G18**

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG, in-line valves G1/4

Type code

VUVG	–			18	–		–				–		➔

Valve type	
In-line valve	**L**
Semi in-line valve	**S**

Design	
Piston spool with sealing cartridge	–

Size	
18 mm	**18**

Valve function	
5/2-way valve, bistable	**B52**
5/2-way valve, single solenoid	**M52**
5/3-way valve, mid-position closed	**P53C**
5/3-way valve, mid-position exhausted	**P53E**
5/3-way valve, mid-position pressurised	**P53U**
2x 3/2-way valve, normally closed	**T32C**
2x 3/2-way valve, 1x normally open, 1x normally closed	**T32H**
2x 3/2-way valve, normally open	**T32U**

Reset method	
Pneumatic spring with T32 and M52	**A**
Mechanical spring with T32 and M52	**M**
Pneumatic/mechanical spring with M52	**R**
With B52 and P53	–

Pilot air	
Internal	**–**
External	**Z**

Manual override	
Non-detenting	**H**
Covered	**S**
Non-detenting, detenting	**T**
Detenting, without accessories	**Y**

Pneumatic connection	
G1/4 thread	**G14**
Push-in connector 6 mm	**Q6**
Push-in connector 8 mm	**Q8**
Push-in connector 10 mm	**Q10**
Push-in connector 1/4"	**T14**
Push-in connector 3/8"	**T38**
Push-in connector 5/16"	**T516**

Solenoid valves VUVG, in-line valves G1/4

Type code

–		–				L	–	

Accessories for valve/connecting cable	
C1...4	Connection pattern H: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
N1...4	M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
N5...8	M8x1, 4-pin, straight: 5 = 2.5 m, 6 = 5 m; angled: 7 = 2.5 m, 8 = 5 m
S1...4	Connection pattern S, 1 = 0.5 m, 2 = 1 m, 3 = 2.5, 4 = 5 m
W1...4	Connection pattern H, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
WS1...4	Connection pattern S with flying leads, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m

Advertisement	
L	LED

Circuitry	
–	Without holding current reduction (HCR)
R	With holding current reduction (HCR)

Electrical connection	
H2	Connection pattern H, horizontal plug connector
H3	Connection pattern H, vertical plug
K6...9	Cables: 6 = 0.5 m, 7 = 1 m, 8 = 2.5 m, 9 = 5 m
L1...4	With 2x flying lead: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
P3	Without E-box
R1	Individual plug connector M8, 4-pin
R8	Individual plug connector M8, 3-pin
S2	Connection pattern S, horizontal plug connector
S3	Connection pattern S, vertical connector

Nominal operating voltage	
1	24 V DC
4	5 V DC
5	12 V DC

Exhausting with VUVG-L	
QN	Push-in fitting
U	Pneumatic silencers
–	G1/4 thread

Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G1/4

Technical data

Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 18 mm

Flow rate
1000 ... 1380 l/min

Voltage
5, 12 and 24 V DC

General Technical data VUVG-L														
Valve function			T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position			C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position			Single pilot							Double solenoid	One position			
Reset method: pneumatic spring			Yes			None			Yes[5]	–	None	–		
Reset method: mechanical spring			None			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1			None			Only with external pilot air supply								
Size		[mm]	18											
Design			Piston spool											
Sealing principle			Soft											
Type of control			Electric											
Type of control			Pilot											
Pilot air supply			Internal/external											
Exhaust function			With flow control option											
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting			Optionally via through-holes[6] or on manifold rail											
Mounting position			Optional											
Nominal size		[mm]	5.7						6.9	7.3	6.9	6.5	6.3	
Standard nominal flow rate		[l/min]	880	970	950	870	990	920	1300	1380	1300	1200	1000	910
Flow rate on manifold rail			780	980	820	780	960	820	1300	1370	1300	1180	1220	1050
Switching time	On/off	[ms]	13/25			15/22			15/31	–	10/45	15/48		
	Changeover	[ms]	–			–			–	11	–	29		
Pneumatic connection	1, 2, 3, 4, 5		G1/4											
	12/14		M5											
Product weight		[g]	164			164			154	164	154	160		
Approval certificate			c UL us - Recognized (OL)											
			c CSA us (OL)											
			RCM mark											
CE marking (see declaration of conformity)[7]			To EU EMC Directive											
Corrosion resistance class CRC[8]			2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
6) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.
7) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
8) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G1/4

Technical data

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[3]	M52-R[2]	B52	M52-M[3]	P53
Operating medium			Compressed air to ISO 8573-2010 [7:4:4]					
Note about the operating/pilot medium			Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure	Internal	[bar]	1.5 ... 8	3 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
	External	[bar]	1.5 ... 10	–0.9 ... 10				
Pilot pressure[4]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
Ambient temperature		[°C]	–5 ... +50, with holding current reduction –5 ... +60					
Temperature of medium		[°C]	–5 ... +50, with holding current reduction –5 ... +60					

1) Pneumatic spring.
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

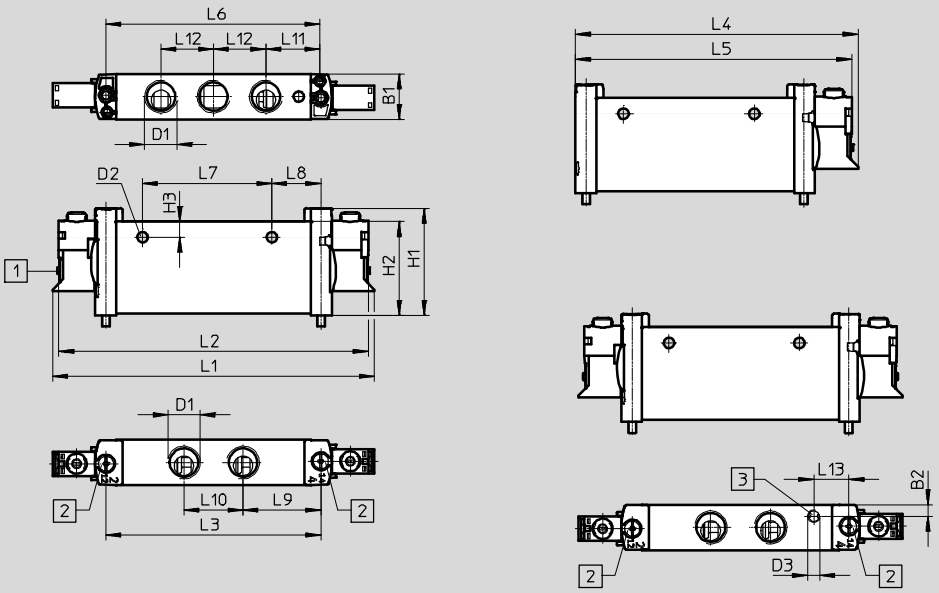
Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)

Safety data		
Max. positive test pulse with 0 signal	[µs]	700
Max. negative test pulse with 1 signal	[µs]	900
Shock resistance		Shock test with severity level 2 in accordance with FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

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

2x 3/2-way, 5/2-way and 5/3-way valve



1 Electrical connection without electrical connection box

2 Mounting screw

3 Connection for external pilot air supply

- Note

More dimensions
Electrical connection boxes
➔ Page 114

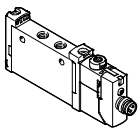
Type	B1	B2	D1	D2	D3	H1	H2	H3	L1	L2	L3	L4	L5
VUVG-L18-...	18.3	4.5	G1/4	∅ 4.2	M5	43.1	37.8	6.4	129.4	124.4	86.4	112.2	109.7
VUVG-S18-...													

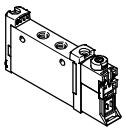
Type	L6	L7	L8	L9	L10	L11	L12	L13
VUVG-L18-...	86	52	19.7	31.3	23.8	21.7	21.1	14
VUVG-S18-...								

Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G1/4

Ordering data

★ Core product range

Ordering data				
	Description		Part no.	Type
In-line valve G1/4, with electrical connection box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ **8031525**	**VUVG-L18-T32C-AT-G14-1R8L**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	★ **8031531**	**VUVG-L18-M52-RT-G14-1R8L**
		Reset method: mechanical spring	★ **8031532**	**VUVG-L18-M52-MT-G14-1R8L**
	5/3-way valve			
	Internal pilot air supply	Mid-position closed, mechanical spring reset method	★ **8031534**	**VUVG-L18-P53C-T-G14-1R8L**

Ordering data				
	Description		Part no.	Type
In-line valve G1/4, without electrical connection box				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	**574422**	**VUVG-L18-T32C-AT-G14-1P3**
		Normally open, reset method: pneumatic spring	**574423**	**VUVG-L18-T32U-AT-G14-1P3**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**574424**	**VUVG-L18-T32H-AT-G14-1P3**
		Normally closed, reset method: mechanical spring	**574425**	**VUVG-L18-T32C-MT-G14-1P3**
		Normally open, reset method: mechanical spring	**574426**	**VUVG-L18-T32U-MT-G14-1P3**
		1x normally open, 1x normally closed, reset method: mechanical spring	**574427**	**VUVG-L18-T32H-MT-G14-1P3**
	External pilot air supply	Normally closed, reset method: mechanical spring	**574434**	**VUVG-L18-T32C-MZT-G14-1P3**
		Normally open, reset method: mechanical spring	**574435**	**VUVG-L18-T32U-MZT-G14-1P3**
		1x normally open, 1x normally closed, reset method: mechanical spring	**574436**	**VUVG-L18-T32H-MZT-G14-1P3**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	**574428**	**VUVG-L18-M52-RT-G14-1P3**
		Reset method: mechanical spring	**574429**	**VUVG-L18-M52-MT-G14-1P3**
	External pilot air supply	Reset method: mechanical spring	**574438**	**VUVG-L18-M52-MZT-G14-1P3**
		Reset method: pneumatic/mechanical spring	**574437**	**VUVG-L18-M52-RZT-G14-1P3**
	5/2-way valve, double solenoid			
	Internal pilot air supply		**574430**	**VUVG-L18-B52-T-G14-1P3**
	External pilot air supply		**574439**	**VUVG-L18-B52-ZT-G14-1P3**

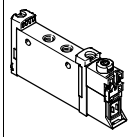
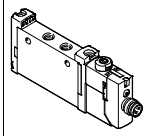
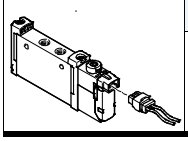
Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G1/4

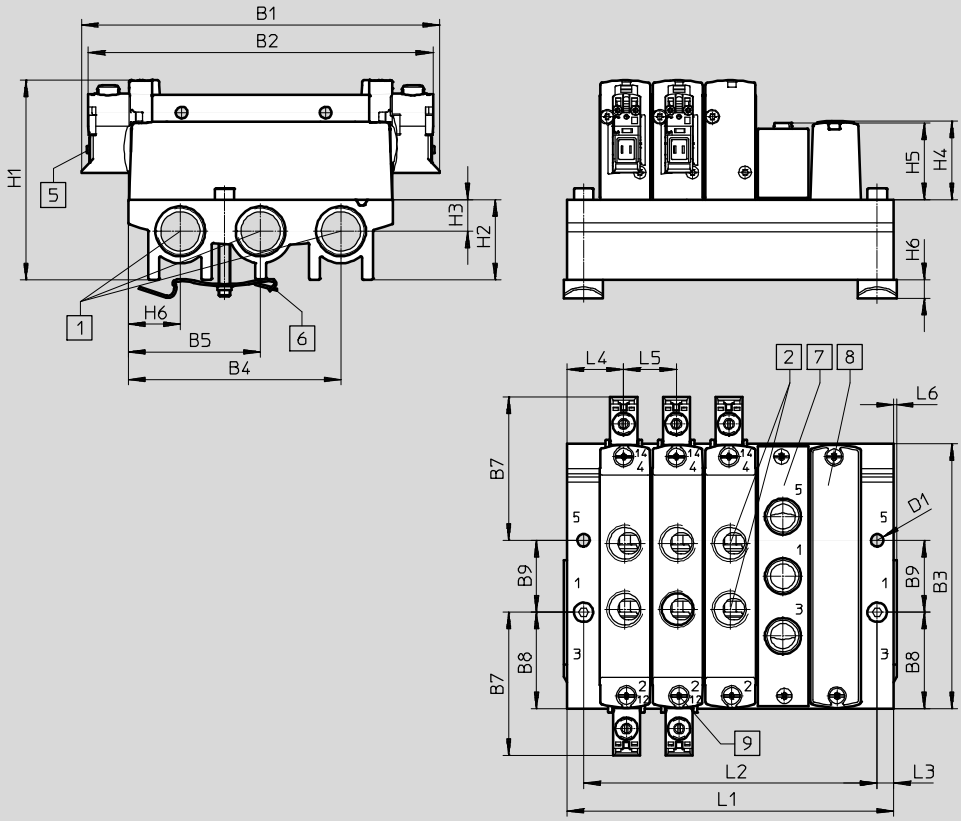
Ordering data

Ordering data

	Description		Part no.	Type
In-line valve G1/4, without electrical connection box				
	5/3-way valve			
	Internal pilot air supply	Mid-position closed, mechanical spring reset method	**574431**	**VUVG-L18-P53C-T-G14-1P3**
		Mid-position exhausted, mechanical spring reset method	**574432**	**VUVG-L18-P53E-T-G14-1P3**
		Mid-position pressurized, mechanical spring reset method	**574433**	**VUVG-L18-P53U-T-G14-1P3**
	External pilot air supply	Mid-position closed, mechanical spring reset method	**574440**	**VUVG-L18-P53C-ZT-G14-1P3**
		Mid-position exhausted, mechanical spring reset method	**574441**	**VUVG-L18-P53E-ZT-G14-1P3**
		Mid-position pressurized, mechanical spring reset method	**574442**	**VUVG-L18-P53U-ZT-G14-1P3**
In-line valve G1/4, with electrical connection box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally open, reset method: pneumatic spring	**8031526**	**VUVG-L18-T32U-AT-G14-1R8L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**8031527**	**VUVG-L18-T32H-AT-G14-1R8L**
		Normally closed, reset method: mechanical spring	**8031528**	**VUVG-L18-T32C-MT-G14-1R8L**
		Normally open, reset method: mechanical spring	**8031529**	**VUVG-L18-T32U-MT-G14-1R8L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8031530**	**VUVG-L18-T32H-MT-G14-1R8L**
	5/2-way valve, double solenoid			
	Internal pilot air supply		**8031533**	**VUVG-L18-B52-T-G14-1R8L**
	5/3-way valve			
	Internal pilot air supply	Mid-position exhausted, mechanical spring reset method	**8031535**	**VUVG-L18-P53E-T-G14-1R8L**
		Mid-position pressurized, mechanical spring reset method	**8031536**	**VUVG-L18-P53U-T-G14-1R8L**
In-line valve G1/4, with electrical connection box H2				
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic/mechanical spring	**578823**	**VUVG-L18-M52-RT-G14-1H2L-W1**

In-line valves for manifold assembly

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



- Note

More dimensions
Electrical connection boxes
➔ Page 114

1 Ports 1, 3 and 5
2 Ports 2 and 4
5 Electrical connection for electrical sub-bases and accessories
6 H-rail mounting (two M4x35 screws are required for attachment)
7 Cover plate
8 Supply plate
9 Valves/blanking plate mounting on manifold rail

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1
VABM-L1-18S-G38	129.4	124.4	95.6	76.8	47.8	18.8	51.7	34.8	26	4.5

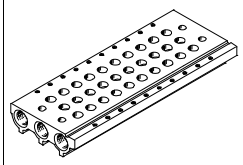
Type	H1	H2	H3	H4	H5	H6	L3	L4	L5	L6
VABM-L1-18S-G38	72.1	29	11.5	28.4	27.6	6.5	6	20.5	19	1

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1	61	80	99	118	137	156	175	194	213	251	289	327
L2	49	68	87	106	125	144	163	182	201	239	277	315
VABM weight [g]	118	159	200	241	282	323	364	405	446	528	610	692

Solenoid valves VUVG-S18, in-line valves G1/4

Ordering data

Technical data – Manifold rails

	Ports	CRC	Material[2]	Operating pressure [bar]	Max. tightening torque for assembly [Nm]		
	1, 3, 5				Valve	H-rail	Wall
	G3/8	2[1]	Wrought aluminium alloy	–0.9 ... 10	1.18	1.5	3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
2) Note on materials: RoHS-compliant.

Order code – Manifold rails

VABM	–	L1	–	18	S	–	G38	–	

Valve manifold parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

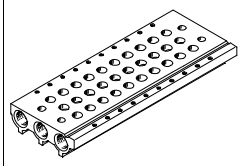
Size	
18 mm	**18**

Manifold rail with port 1, 3, 5	
For G1/4 in-line valves	**S**

Ports 1, 3, 5	
G38	G3/8 thread

Number of valve positions	
	2 to 10, 12, 14 and 16

Ordering data – Manifold rail

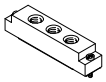
	Description		Part no.	Type
Manifold rail for in-line valve				
	For size G1/4	2 valve positions	★ **574455**	**VABM-L1-18S-G38-2**
		3 valve positions	★ **574456**	**VABM-L1-18S-G38-3**
		4 valve positions	★ **574457**	**VABM-L1-18S-G38-4**
		5 valve positions	**574458**	**VABM-L1-18S-G38-5**
		6 valve positions	★ **574459**	**VABM-L1-18S-G38-6**
		7 valve positions	**574460**	**VABM-L1-18S-G38-7**
		8 valve positions	★ **574461**	**VABM-L1-18S-G38-8**
		9 valve positions	**574462**	**VABM-L1-18S-G38-9**
		10 valve positions	★ **574463**	**VABM-L1-18S-G38-10**
		12 valve positions	**574464**	**VABM-L1-18S-G38-12**
		14 valve positions	**574465**	**VABM-L1-18S-G38-14**
		16 valve positions	**574466**	**VABM-L1-18S-G38-16**

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-S18, in-line valves G1/4

Ordering data

Ordering data – Accessories				
	Description		Part no.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For valve position on manifold rail, including screws and seal		★ 574482	VABB-L1-18
Separator				Technical data ➔ Internet: vabd
	For creating pressure zones		574483	VABD-14-B
Supply plate				Technical data ➔ Internet: vabf
	For valve position on manifold rail, including screws and seal		574481	VABF-L1-18-P3A4-G14
Seals for in-line valves				Technical data ➔ Internet: vabd
	For G1/4 in-line valves	Delivery unit: 10 sets (each with 2 screws and 1 seal)	★ 574479	VABD-L1-18X-S-G14

Note

Connect supply plate at port 1 with compressed air. Reverse operation (pressure at port 3, 5) is not permissible.

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG, sub-base valves M3

Type code

VUVG	–	B		10A	–		–		Z		–

Valve type	
Sub-base valve	B

Design	
Piston spool with sealing cartridge	–

Size	
10 mm	10A

Valve function	
5/2-way valve, bistable	B52
5/2-way valve, single solenoid,	M52
5/3-way valve, mid-position closed	P53C
5/3-way valve, mid-position exhausted	P53E
5/3-way valve, mid-position pressurised	P53U

Reset method	
Mechanical spring with M52	M
Pneumatic/mechanical spring with M52	R
With B52 and P53	–

Pilot air	
External	Z

Manual override	
Non-detenting	H
Covered	S
Non-detenting, detenting	T
Detenting, without accessories	Y

F	–				L	–	

Pneumatic connection	
F	In the manifold rail

Nominal operating voltage	
1	24 V DC
4	5 V DC
5	12 V DC

Electrical connection	
H2	Connection pattern H, horizontal plug connector
H3	Connection pattern H, vertical plug
K6...9	Cable: K6 = 0.5 m, K7 = 1 m, K8 = 2.5 m, K9 = 5 m
L1...4	With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
R1	Individual plug connector M8, 4-pin
R8	Individual plug connector M8, 3-pin
P3	Without E-box
S2	Connection pattern S, horizontal plug connector
S3	Connection pattern S, vertical connector

Circuitry	
–	Without holding current reduction (HCR)
R	With holding current reduction (HCR)

Advertisement	
L	LED

Accessories for valve/connecting cable	
C1...4	Connection pattern H: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
N1...4	M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
N5...8	M8x1, 4-pin, straight: 5 = 2.5 m, 6 = 5 m; angled: 7 = 2.5 m, 8 = 5 m
S1...4	Connection pattern S, 1 = 0.5 m, 2 = 1 m, 3 = 2.5, 4 = 5 m
W1...4	Connection pattern H, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
WS1...4	Connection pattern S with flying leads, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m

Solenoid valves VUVG-B10A, sub-base valves M3

Technical data

FESTO

Function
5/2-way, single pilot
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
90 ... 100 l/min

Voltage
5, 12 and 24 V DC

General Technical data VUVG-B								
Valve function			M52-R	B52	M52-M	P53		
Normal position			–	–	–	C[1]	U[2]	E[3]
Stable position			Single pilot	Double solenoid	One position	One position		
Reset method: pneumatic spring			Yes[4]	–	None	–		
Reset method: mechanical spring			Yes[4]	–	Yes	Yes		
Vacuum operation at port 1			Only with external pilot air supply					
Design			Piston spool					
Sealing principle			Soft					
Type of control			Electric					
Type of control			Pilot					
Pilot air supply			External, internal; can be selected via sub-base					
Exhaust function			With flow control option					
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting					
Type of mounting			On manifold rail					
Mounting position			Optional					
Nominal size		[mm]	2		1.4	2		
Standard nominal flow rate		[l/min]	100		80	90		
Flow rate on manifold rail M3		[l/min]	100		80	90		
Switching time on/off		[ms]	7/15	–	7/21	8/25		
Changeover time		[ms]	–	5	–	14		
Size		[mm]	10					
Ports	1, 3, 5		M7 in manifold rail					
	2, 4		M5 in manifold rail					
	12/14, 82/84		M5 in manifold rail					
Product weight		[g]	38	49	37	49		
Approval certificate			c UL us - Recognized(OL)					
			c CSA us (OL)					
			RCM mark					
CE marking (see declaration of conformity)[5]			To EU EMC Directive					
Corrosion resistance class CRC[6]			2					

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) Combined reset method
5) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
6) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Solenoid valves VUVG-B10A, sub-base valves M3

Technical data

Operating and environmental conditions						
Valve function			M52-R[1]	B52	M52-M[2]	P53
Operating medium			Compressed air to ISO 8573-2010 [7:4:4]			
Operating pressure	Internal	[bar]	2.5 ... 8	1.5 ... 8	3 ... 8	
	External	[bar]	–0.9 ... 10		–0.9 ...8	–0.9 ... 10
Pilot pressure[3)]		[bar]	2.5 ... 8	1.5 ... 8	2 ... 8	3 ... 8
Ambient temperature		[°C]	–5 ... +50, with holding current reduction –5 ... +60			
Temperature of medium		[°C]	–5 ... +50, with holding current reduction –5 ... +60			

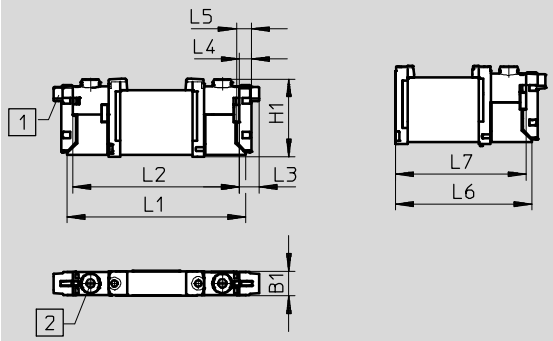
1) Mixed, pneumatic/mechanical spring
2) Mechanical spring
3) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[DC V]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

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

5/2-way and 5/3-way valve



- Note

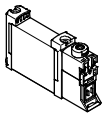
More dimensions
Electrical connection boxes
➔ Page 114

1 Vertical electrical connection 2 Manual override

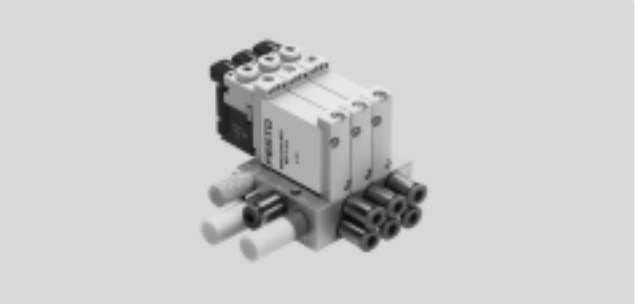
Type	B1	H1	L1	L2	L3	L4	L5	L6	L7
VUVG-B10A-...-F...	10.2	32.5	73.9	68.9	8	4.85	6.15	56.9	54.4

Solenoid valves VUVG-B10A, sub-base valves M3

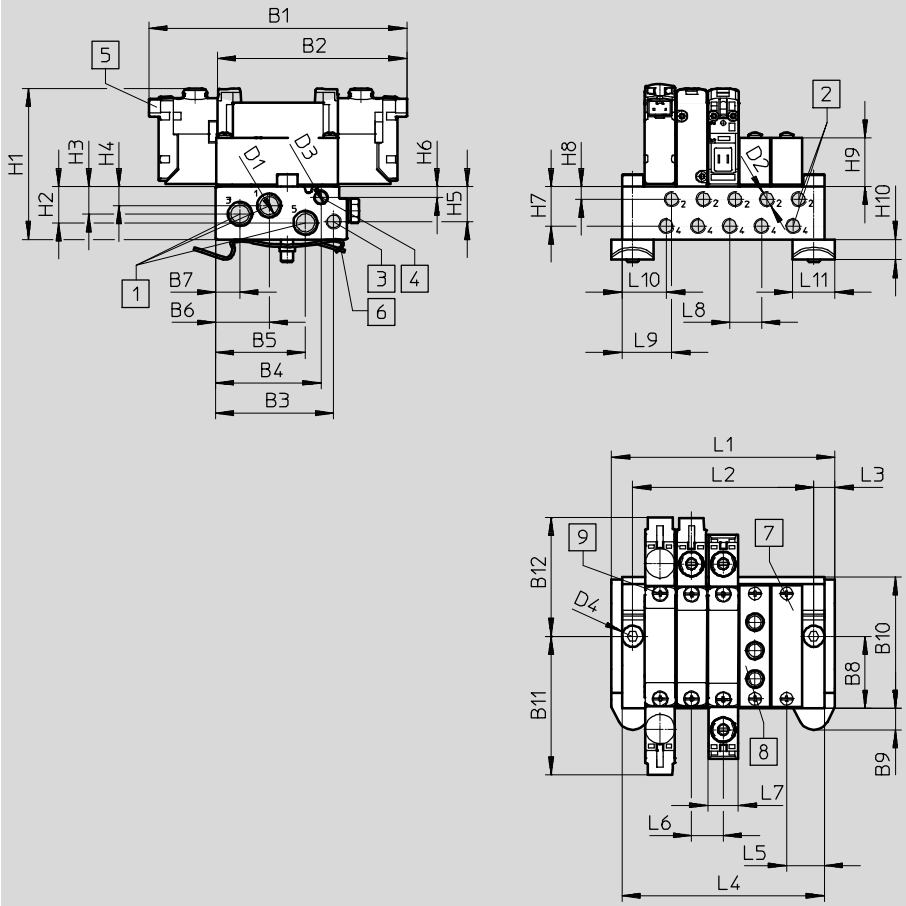
Ordering data

Ordering data				
	Description		Part no.	Type
Sub-base valve M3, without electrical connection box				
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic/mechanical spring	**566448**	**VUVG-B10A-M52-RZT-F-1P3**
		Reset method: mechanical spring	**574347**	**VUVG-B10A-M52-MZT-F-1P3**
	5/2-way valve, double solenoid			
	External pilot air supply		**566449**	**VUVG-B10A-B52-ZT-F-1P3**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**566450**	**VUVG-B10A-P53C-ZT-F-1P3**
		Mid-position exhausted, mechanical spring reset method	**566451**	**VUVG-B10A-P53E-ZT-F-1P3**
		Mid-position pressurized, mechanical spring reset method	**566452**	**VUVG-B10A-P53U-ZT-F-1P3**

Sub-base valve for manifold assembly
M5 connection



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



- Note

More dimensions
Electrical connection boxes
➔ Page 114

1 Ports 1, 3 and 5
2 Ports 2 and 4
3 Connections 12, 14
4 Connections 82, 84
5 Electrical connection for electrical sub-bases and accessories
6 H-rail mounting (two M4x25 screws are required for mounting)
7 Cover plate
8 Supply plate
9 Valves/blanking plate mounting on manifold rail

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
VABM-L1-10AW-M7	84.9	62.4	39.1	35	29.8	17.8	8.2	24	7.2	43.5	45.8	39.2

Type	D1	D2	D3	D4	D5	H1	H2	H3	H4	H5	H6
VABM-L1-10AW-M7	M7	M5	M5	Ø 4.5	Ø4	53.1	12	9.1	6.3	11.6	3.6

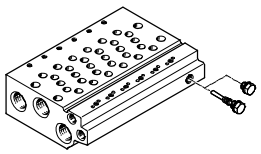
Type	H7	H8	H9	H10	H15	L3	L5	L6	L7	L8	L9	L10	L11
VABM-L1-10AW-M7	13.1	4.2	16.2	6.8	1.9	7.5	12.5	10.5	10.2	10.5	17	15.2	14

Solenoid valves VUVG-B10A, sub-base valves M3

Ordering data

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1	43.5	54	64.5	75	85.5	97	107.5	117	127.5	148.5	169.5	190.5
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	133.5	154.5	175.5
L4	36.5	47	57.5	68	78.5	89	99.5	110	120.5	141.5	162.5	183.5
VABM weight [g]	60	78	96	114	132	150	168	186	204	240	276	312

Technical data – Manifold rails[1)]

	Ports			CRC	Material[3)]	Operating pressure [bar]	Max. tightening torque for assembly [Nm]		
	2, 4	1, 3, 5	12/14, 82/84				Valve	H-rail	Wall
	M5	M7	M5	2[2)]	Wrought aluminium alloy	–0.9 ... 10	0.45	1.5	1.5

1) Blanking plugs are included with the manifold rail.
2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
3) Note on materials: RoHS-compliant.

Order code – Manifold rails

VABM	–	L1	–	10A	W	–	M7	–	

Valve manifold parts
Manifold rail **VABM**

Valve series
VUVG **L1**

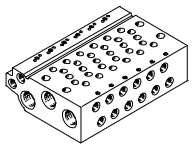
Size
10 mm **10A**

Manifold rail with port 1, 2, 3, 4, 5, 12/14, 82/84
Port 2 and 4 with M5 thread **W**

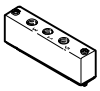
Number of valve positions
2 to 10, 12, 14 and 16

Ports 1, 3, 5
M7 M7 thread

Ordering data – Manifold rails

	Description		Part no.	Type
Manifold rail For sub-base valve M3				
	For size B10A (M3)	2 valve positions	**566546**	**VABM-L1-10AW-M7-2**
		3 valve positions	**566547**	**VABM-L1-10AW-M7-3**
		4 valve positions	**566548**	**VABM-L1-10AW-M7-4**
		5 valve positions	**566549**	**VABM-L1-10AW-M7-5**
		6 valve positions	**566550**	**VABM-L1-10AW-M7-6**
		7 valve positions	**566551**	**VABM-L1-10AW-M7-7**
		8 valve positions	**566552**	**VABM-L1-10AW-M7-8**
		9 valve positions	**566553**	**VABM-L1-10AW-M7-9**
		10 valve positions	**566554**	**VABM-L1-10AW-M7-10**
		12 valve positions	**566555**	**VABM-L1-10AW-M7-12**
		14 valve positions	**566556**	**VABM-L1-10AW-M7-14**
		16 valve positions	**566557**	**VABM-L1-10AW-M7-16**

Ordering data – Accessories

	Description		Part no.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For valve position on manifold rail, including screws and seal		**569986**	**VABB-L1-10A**
Separator				Technical data ➔ Internet: vabd
	For creating pressure zones		**570872**	**VABD-4.2-B**
Supply plate				Technical data ➔ Internet: vabf
	For valve position on manifold rail, including screws and seal		**569990**	**VABF-L1-10A-P3A4-M5**
Seals				Technical data ➔ Internet: vabd
	For sub-base valve M3	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**566671**	**VABD-L1-10AB-S-M3**

Solenoid valves VUVG, sub-base valves M5/M7

Type code

VUVG	–	B		10	–		–		Z		–	F	–

Valve type	
Sub-base valve	B

Design	
Piston spool with sealing cartridge	–
Piston spool with sealing ring	K

Size	
10 mm	10

Valve function	
5/2-way valve, bistable	B52
5/2-way valve, single solenoid,	M52
5/3-way valve, mid-position closed	P53C
5/3-way valve, mid-position exhausted	P53E
5/3-way valve, mid-position pressurised	P53U
2x 3/2-way valve, normally closed	T32C
2x 3/2-way valve, 1x normally open, 1x normally closed	T32H
2x 3/2-way valve, normally open	T32U

Reset method	
Pneumatic spring with T32 and M52	A
Mechanical spring with T32 and M52	M
Pneumatic/mechanical spring with M52	R
With B52 and P53	–

Pilot air	
External	Z

Manual override	
Non-detenting	H
Covered	S
Non-detenting, detenting	T
Detenting, without accessories	Y

Pneumatic connection	
In the manifold rail	F

				L	–		–	

Feature	
–	Extended features
S	Core features

Accessories for valve/connecting cable	
C1...4	Connection pattern H: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
N1...4	M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
N5...8	M8x1, 4-pin, straight: 5 = 2.5 m, 6 = 5 m; angled: 7 = 2.5 m, 8 = 5 m
S1...4	Connection pattern S, 1 = 0.5 m, 2 = 1 m, 3 = 2.5, 4 = 5 m
W1...4	Connection pattern H, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
WS1...4	Connection pattern S with flying leads, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m

Advertisement	
L	LED

Circuitry	
–	Without holding current reduction (HCR)
R	With holding current reduction (HCR)

Electrical connection	
H2	Connection pattern H, horizontal plug connector
H3	Connection pattern H, vertical plug
K6...9	Cable: K6 = 0.5 m, K7 = 1 m, K8 = 2.5 m, K9 = 5 m
L1...4	With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
P3	Without E-box
R1	Individual plug connector M8, 4-pin
R8	Individual plug connector M8, 3-pin
S2	Connection pattern S, horizontal plug connector
S3	Connection pattern S, vertical connector

Nominal operating voltage	
1	24 V DC
4	5 V DC
5	12 V DC

Solenoid valves VUVG-BK10, sub-base valves M5/M7

Technical data

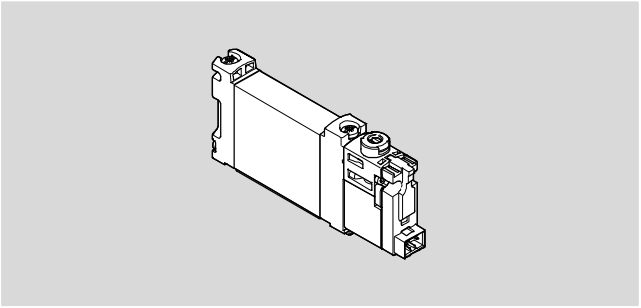
Function
2x 3/2C
5/2-way, monostable
5/2-way valve, bistable

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
160 l/min

Voltage
24 V DC



General Technical data, VUVG-BK					
Valve function			T32-A	M52-A	B52
Normal position			C[1]	–	–
Stable position			Single pilot		Bistable
Reset method: pneumatic spring			Yes	Yes	–
Design			Piston spool		
Sealing principle			Soft		
Type of control			Electric		
Type of control			Pilot		
Pilot air supply			Internal		
Exhaust air function			With flow control option		
Manual override			Non-detenting, detenting		
Type of mounting			On manifold rail		
Mounting position			Optional		
Standard nominal flow rate		[l/min]	160	160	160
Switching time on/off		[ms]	12/14	14/17	–
Changeover time		[ms]	–		7
Size		[mm]	10		
Ports	2, 4		M5/M7 in manifold rail		
Product weight		[g]	55	45	57
Corrosion resistance class CRC[2]			2		

1) C=Normally closed

2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

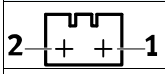
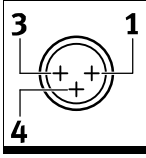
Safety data		
Max. positive test pulse with 0 signal	[µs]	1600
Max. negative test pulse with 1 signal	[µs]	3000
Shock resistance		Shock test with severity level 1 in accordance with FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6

Operating and environmental conditions				
Valve function		T32-A[1]	M52-A[1]	B52
Operating medium		Compressed air to ISO 8573-2010 [7:4:4]		
Note about the operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	1.5 ... 7	2.5 ... 7	1.5 ... 7
Ambient temperature	[°C]	–5 ... +50		
Temperature of medium	[°C]	–5 ... +50		

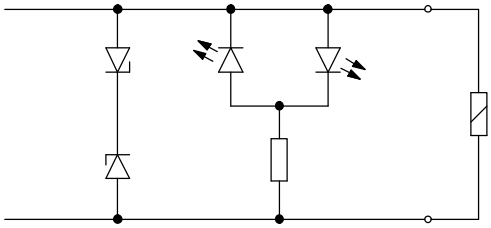
1) Pneumatic spring.

Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[DC V]	24 ±10%
Nominal operating voltage	[DC V]	22
Power	[W]	0.7
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)
Signal status display		LED
Maximum switching frequency	[Hz]	2

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant
	Contains paint-wetting impairment substances

Pin allocation for electrical connection box			
	Pin		Description
Rectangular plug connector, plug pattern H			
	1	+ or –	Protective circuit without holding current reduction
	2	+ or –	
Round plug, M8, 3-pin			
	1	Not used	Protective circuit without holding current reduction
	3	+ or –	
	4	+ or –	

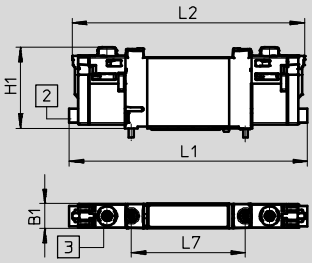
Protective circuit without holding current reduction



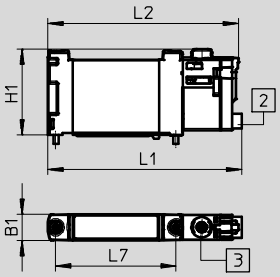
The solenoid coils are equipped with a protective circuit to arrest sparks and protect against polarity reversal.

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

2x 3/2-way, 5/2-way valve, double solenoid



5/2-way valve, single solenoid



Note

More dimensions
Electrical connection boxes
➔ Page 114

2 Horizontal electrical connection

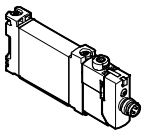
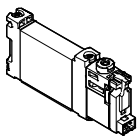
3 Manual override

Type	B1	H1	L1	L2	L7
VUVG-BK10-T32C-...	10.2	33.6	98.3	95.8	47
VUVG-BK10-B52-...					
VUVG-BK10-M52-...			75.9	74.6	

Solenoid valves VUVG-BK10, sub-base valves M5/M7

Ordering data

★ Core product range

Ordering data				
	Description		Part no.	Type
Sub-base valve M5/M7, with electrical connection box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ **8042558**	**VUVG-BK10-T32C-AT-F-1R8L-S**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	★ **8042559**	**VUVG-BK10-M52-AT-F-1R8L-S**
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ **8042560**	**VUVG-BK10-B52-T-F-1R8L-S**
Sub-base valve M5/M7, with electrical connection box H2				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ **8042554**	**VUVG-BK10-T32C-AT-F-1H2L-S**
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	★ **8042555**	**VUVG-BK10-M52-AT-F-1H2L-S**
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ **8042556**	**VUVG-BK10-B52-T-F-1H2L-S**

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-B10, sub-base valve M5/M7

Technical data

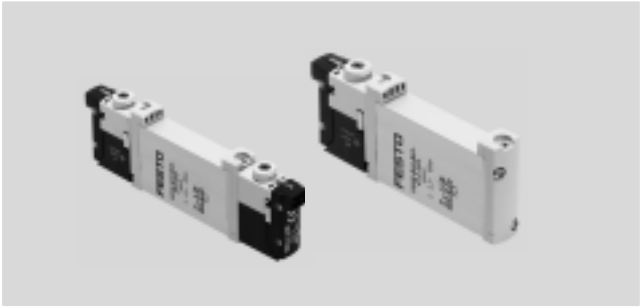
Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
120 ... 270 l/min

Voltage
5, 12 and 24 V DC



General technical data, VUVG-B M5/M7													
Valve function			T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position			C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position			Single pilot							Double solenoid	One position	One position		
Reset method: pneumatic spring			Yes			None			Yes[5]	–	None	–		
Reset method: mechanical spring			None			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1			None			Only with external pilot air supply								
Design			Piston spool											
Sealing principle			Soft											
Type of control			Electric											
Type of control			Pilot											
Pilot air supply			External, internal; can be selected via sub-base											
Exhaust function			With flow control option											
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting			On manifold rail											
Mounting position			Optional											
Nominal size		[mm]	2.7			1.8	1.7		4		2.3	3.5		
Standard nominal flow rate		[l/min]	170			150	140	140	330		285	300		
Flow rate on manifold rail M5		[l/min]	150			130	120	120	210		180	200		
Flow rate on manifold rail M7		[l/min]	160			140	130	130	270		230	250		
Switching time on/off		[ms]	6/16			8/11			7/19	–	8/24	11/30		
Changeover time		[ms]	–							7		14		
Size		[mm]	10											
Ports	1, 3, 5		G1/8 in manifold rail											
	2, 4		M5 or M7 in manifold rail											
	12/14, 82/84		M5 in manifold rail											
Product weight		[g]	55			54			45	55	44	55		
Approval certificate			c UL us - Recognized(OL)											
			c CSA us (OL)											
			RCM mark											
CE marking (see declaration of conformity)[6]			To EU EMC Directive											
Corrosion resistance class CRC[7]			2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
6) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
7) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Solenoid valves VUVG-B10, sub-base valves M5/M7

Technical data

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[3]	M52-R[2]	B52	M52-M[3]	P53
Operating medium			Compressed air to ISO 8573-2010 [7:4:4]					
Operating pressure	Internal	[bar]	1.5 ... 8	3 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
	External	[bar]	1.5 ... 10	–0.9 ... 10			–0.9 ... 8	–0.9 ... 10
Pilot pressure[4)]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
Ambient temperature		[°C]	–5 ... +50, with holding current reduction –5 ... +60					
Temperature of medium		[°C]	–5 ... +50, with holding current reduction –5 ... +60					

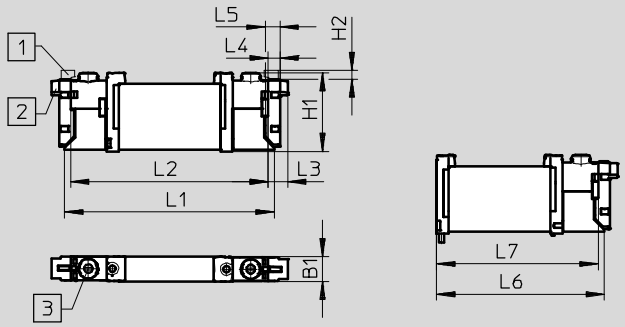
1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

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

2x 3/2-way, 5/2-way and 5/3-way valve



- Note

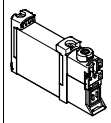
More dimensions
Electrical connection boxes
➔ Page 114

1 Vertical electrical connection
2 Horizontal electrical connection
3 Manual override

Type	B1	H1	H2	L1	L2	L3	L4	L5	L6	L7
VUVG-B10 -...-F...	10.2	32.5	3.6	86.5	81.5	8	4.85	6.15	69.2	66.7

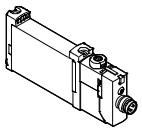
Solenoid valves VUVG-B10, sub-base valves M5/M7

Ordering data

Ordering data				
	Description		Part no.	Type
Sub-base valve M5/M7, without electrical connection box				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**566487**	**VUVG-B10-T32C-AZT-F-1P3**
		Normally open, reset method: pneumatic spring	**566488**	**VUVG-B10-T32U-AZT-F-1P3**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**566489**	**VUVG-B10-T32H-AZT-F-1P3**
		Normally closed, reset method: mechanical spring	**574364**	**VUVG-B10-T32C-MZT-F-1P3**
		Normally open, reset method: mechanical spring	**574365**	**VUVG-B10-T32U-MZT-F-1P3**
		1x normally open, 1x normally closed, reset method: mechanical spring	**574366**	**VUVG-B10-T32H-MZT-F-1P3**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic/mechanical spring	**566490**	**VUVG-B10-M52-RZT-F-1P3**
		Reset method: mechanical spring	**574367**	**VUVG-B10-M52-MZT-F-1P3**
	5/2-way valve, double solenoid			
	External pilot air supply		**566491**	**VUVG-B10-B52-ZT-F-1P3**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**566492**	**VUVG-B10-P53C-ZT-F-1P3**
		Mid-position exhausted, mechanical spring reset method	**566493**	**VUVG-B10-P53E-ZT-F-1P3**
		Mid-position pressurized, mechanical spring reset method	**566494**	**VUVG-B10-P53U-ZT-F-1P3**

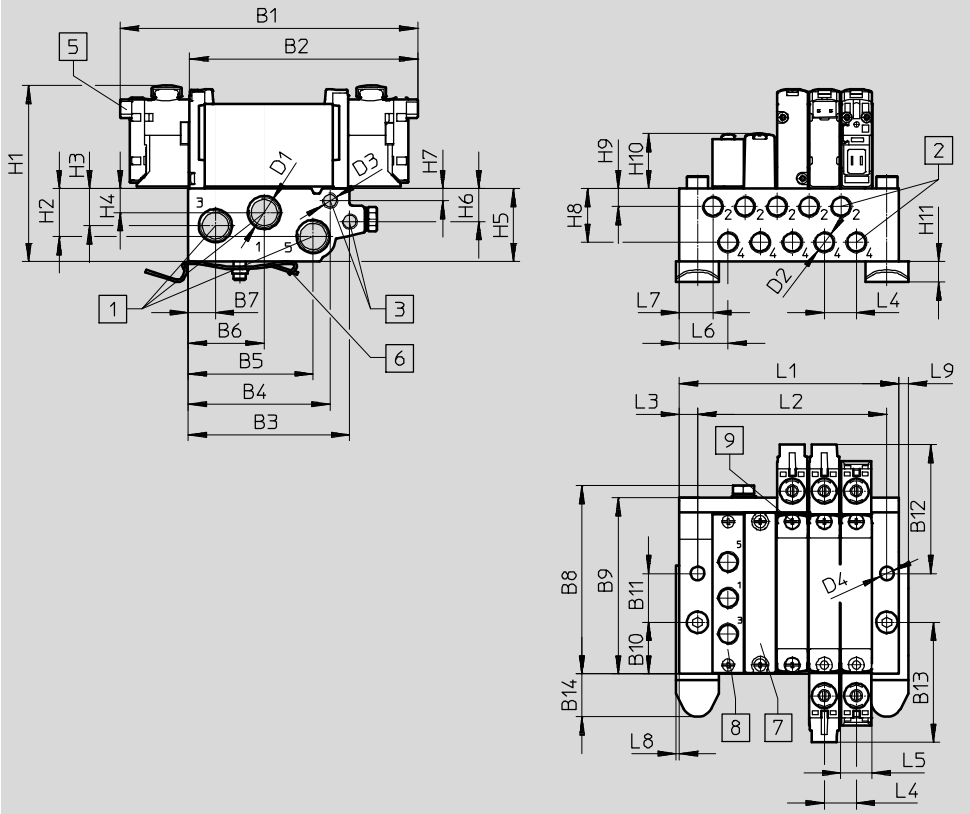
Solenoid valves VUVG-B10, sub-base valves M5/M7

Ordering data

Ordering data				
	Description		Part no.	Type
Sub-base valve M5/M7, with electrical connection box R8				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**574234**	**VUVG-B10-T32C-AZT-F-1R8L**
		Normally open, reset method: pneumatic spring	**574235**	**VUVG-B10-T32U-AZT-F-1R8L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**574236**	**VUVG-B10-T32H-AZT-F-1R8L**
		Normally closed, reset method: mechanical spring	**8031492**	**VUVG-B10-T32C-MZT-F-1R8L**
		Normally open, reset method: mechanical spring	**8031493**	**VUVG-B10-T32U-MZT-F-1R8L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8031494**	**VUVG-B10-T32H-MZT-F-1R8L**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic/mechanical spring	**574237**	**VUVG-B10-M52-RZT-F-1R8L**
		Reset method: mechanical spring	**578157**	**VUVG-B10-M52-MZT-F-1R8L**
	5/2-way valve, double solenoid			
	External pilot air supply		**574238**	**VUVG-B10-B52-ZT-F-1R8L**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**574239**	**VUVG-B10-P53C-ZT-F-1R8L**
		Mid-position exhausted, mechanical spring reset method	**574241**	**VUVG-B10-P53E-ZT-F-1R8L**
		Mid-position pressurized, mechanical spring reset method	**574240**	**VUVG-B10-P53U-ZT-F-1R8L**

Sub-base valve for manifold assembly
M5 or M7 connection

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



- Note

More dimensions
Electrical connection boxes
➔ Page 114

1 Ports 1, 3 and 5
2 Ports 2 and 4
3 Connections 12, 14
5 Electrical connection for electrical sub-bases and accessories
6 H-rail mounting (two M4x30 screws are required for mounting)
7 Cover plate
8 Supply plate
9 Valves/blanking plate mounting on manifold rail

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
VABM-L1 10-...-G18	97.5	74.8	52.9	46.5	40.9	24.9	8.9	61.7	57.7	16.9	16	42.2

Type	B13	B14	D1	D2	D3	D4	D5	H1	H2	H3	H4
VABM-L1 10-...-G18	39.3	14.1	G1/8	M5/M7	M5	4.5	Ø6	56.4	15.7	12.2	7.9

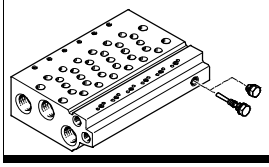
Type	H5	H6	H7	H8	H9	H10	H11	L3	L4	L5	L6	L7	L8	L9
VABM-L1 10-...-G18	23.9	10.8	4	17.6	5.9	18	6.8	6	10.5	10.3	16	11.9	1	3

Solenoid valves VUVG-B10, sub-base valves M5/M7

Manifold assembly

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16	22
L1	40.5	51	61.5	72	82.5	93	103.5	114	124.5	145.5	166.5	187.5	250.5
L2	30.5	41	51.5	62	72.5	83	93.5	104	114.5	135.5	156.5	177.5	240.5
VABM weight [g]	107	135	163	191	219	247	275	303	331	387	415	471	499

Technical data – Manifold rails[1)]

	Ports			CRC	Material[3)]	Operating pressure [bar]	Max. tightening torque for assembly [Nm]		
	2, 4	1, 3, 5	12/14, 82/84				Valve	H-rail	Wall
	M5 or M7	G1/8	M5	2[2)]	Wrought aluminium alloy	–0.9 ... 10	0.45	1.5	3

1) Blanking plugs are included with the manifold rail.
2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
3) Note on materials: RoHS-compliant.

Order code – Manifold rails

VABM	–	L1	–	10		–	G18	–	

Valve manifold parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

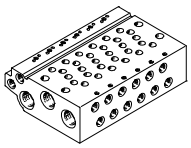
Size	
10 mm	**10**

Manifold rail with port 1, 2, 3, 4, 5, 12/14, 82/84	
Port 2 and 4 with M5 thread	**W**
Port 2 and 4 with M7 thread	**HW**

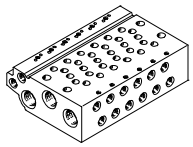
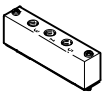
Number of valve positions	
	2 to 10, 12, 14 and 16

Ports 1, 3, 5	
G18	G1/8 thread

Ordering data – Manifold rails

	Description		Part no.	Typ
Manifold rail for sub-base valve M5/M7				
	For size B10 (M5)	2 valve positions	★ **566582**	**VABM-L1-10W-G18-2**
		3 valve positions	★ **566583**	**VABM-L1-10W-G18-3**
		4 valve positions	★ **566584**	**VABM-L1-10W-G18-4**
		5 valve positions	**566585**	**VABM-L1-10W-G18-5**
		6 valve positions	★ **566586**	**VABM-L1-10W-G18-6**
		7 valve positions	**566587**	**VABM-L1-10W-G18-7**
		8 valve positions	★ **566588**	**VABM-L1-10W-G18-8**
		9 valve positions	**566589**	**VABM-L1-10W-G18-9**
		10 valve positions	★ **566590**	**VABM-L1-10W-G18-10**
		12 valve positions	**566591**	**VABM-L1-10W-G18-12**
		14 valve positions	**566592**	**VABM-L1-10W-G18-14**
		16 valve positions	**566593**	**VABM-L1-10W-G18-16**

Festo core product range
★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Ordering data – Accessories				
	Description		Part no.	Type
Manifold rail for sub-base valve M5/M7				
	For size B10 (M7)	2 valve positions	★ 566606	VABM-L1-10HW-G18-2
		3 valve positions	★ 566607	VABM-L1-10HW-G18-3
		4 valve positions	★ 566608	VABM-L1-10HW-G18-4
		5 valve positions	566609	VABM-L1-10HW-G18-5
		6 valve positions	★ 566610	VABM-L1-10HW-G18-6
		7 valve positions	566611	VABM-L1-10HW-G18-7
		8 valve positions	★ 566612	VABM-L1-10HW-G18-8
		9 valve positions	566613	VABM-L1-10HW-G18-9
		10 valve positions	★ 566614	VABM-L1-10HW-G18-10
		12 valve positions	566615	VABM-L1-10HW-G18-12
		14 valve positions	566616	VABM-L1-10HW-G18-14
		16 valve positions	566617	VABM-L1-10HW-G18-16
Blanking plate				Technical data ➔ Internet: vabb
	For valve position on manifold rail, including screws and seal		★ 566495	VABB-L1-10-W
Separator				Technical data ➔ Internet: vabd
	For creating pressure zones		569994	VABD-6-B
Supply plate				Technical data ➔ Internet: vabf
	For valve position (sub-base valves M5) on manifold rail, including screws and seal		569991	VABF-L1-10-P3A4-M5
	For valve position (sub-base valves M7) on manifold rail, including screws and seal		569992	VABF-L1-10-P3A4-M7
Seals				Technical data ➔ Internet: vabd
	For sub-base valves M5/M7	Delivery unit: 10 sets (each with 2 screws and 1 seal)	566674	VABD-L1-10B-S-M7

Festo core product range

★ Generally ready for shipping ex works in 24 hours

☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG, sub-base valves G1/8

Type codes

VUVG	–	B		14	–		–		Z		➔

Valve type	
Sub-base valve	B

Design principle	
Piston spool with sealing cartridge	–
Piston spool with sealing ring	K

Size	
14 mm	14

Valve function	
5/2-way valve, bistable	B52
5/2-way valve, single solenoid,	M52
5/3-way valve, mid-position closed	P53C
5/3-way valve, mid-position exhausted	P53E
5/3-way valve, mid-position pressurised	P53U
2x 3/2-way valve, normally closed	T32C
2x 3/2-way valve, 1x normally open, 1x normally closed	T32H
2x 3/2-way valve, normally open	T32U

Reset method	
Pneumatic spring with T32 and M52	A
Mechanical spring with T32 and M52	M
With B52 and P53	–

Pilot air	
External	Z

Manual override	
Non-detenting	H
Covered	S
Non-detenting, detenting	T
Detenting, without accessories	Y

–	F	–				L	–		–	

Feature	
–	Extended features
S	Core features

Accessories for valve/connecting cable	
C1...4	Connection pattern H: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
N1...4	M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
N5...8	M8x1, 4-pin, straight: 5 = 2.5 m, 6 = 5 m; angled: 7 = 2.5 m, 8 = 5 m
S1...4	Connection pattern S, 1 = 0.5 m, 2 = 1 m, 3 = 2.5, 4 = 5 m
W1...4	Connection pattern H, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
WS1...4	Connection pattern S with flying leads, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m

Advertisement	
L	LED

Circuitry	
–	Without holding current reduction (HCR)
R	With holding current reduction (HCR)

Electrical connection	
H2	Connection pattern H, horizontal plug connector
H3	Connection pattern H, vertical plug
K6...9	Cables: 6 = 0.5 m, 7 = 1 m, 8 = 2.5 m, 9 = 5 m
L1...4	with 2x flying lead: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
P3	Without E-box
R1	Individual plug connector M8, 4-pin
R8	Individual plug connector M8, 3-pin
S2	Connection pattern S, horizontal plug connector
S3	Connection pattern S, vertical connector

Nominal operating voltage	
1	24 V DC
4	5 V DC
5	12 V DC

Pneumatic connection	
F	In the manifold rail

Solenoid valves VUVG-BK14, sub-base valves G1/8

Technical data

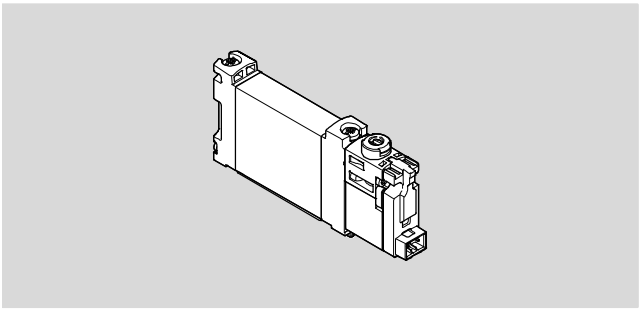
Function
2x 3/2C
5/2-way, monostable
5/2-way valve, bistable

Circuit symbol ➔ Page 13

Size 14 mm

Flow rate
350 ... 380 l/min

Voltage
24 V DC



General Technical data, VUVG-BK				
Valve function		T32-A	M52-A	B52
Normal position		C[1]	–	–
Stable position		Single pilot		Bistable
Reset method: pneumatic spring		Yes	Yes	–
Design		Piston spool		
Sealing principle		Soft		
Type of control		Electric		
Type of control		Pilot		
Pilot air supply		Internal		
Exhaust air function		With flow control option		
Manual override		Non-detenting, detenting		
Type of mounting		On manifold rail		
Mounting position		Optional		
Standard nominal flow rate	[l/min]	350	380	380
Switching time on/off	[ms]	13/20	14/24	–
Changeover time	[ms]	–		8
Size	[mm]	14		
Ports 2, 4		G1/8 in manifold rail		
Product weight	[g]	75	65	85
Corrosion resistance class CRC[2]		2		

1) C=Normally closed
2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

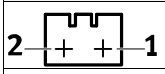
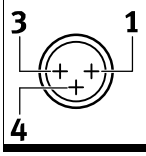
Safety data		
Max. positive test pulse with 0 signal	[µs]	1600
Max. negative test pulse with 1 signal	[µs]	3000
Shock resistance		Shock test with severity level 1 in accordance with FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6

Operating and environmental conditions				
Valve function		T32-A[1]	M52-A[1]	B52
Operating medium		Compressed air to ISO 8573-2010 [7:4:4]		
Note about the operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	1.5 ... 7	2.5 ... 7	1.5 ... 7
Ambient temperature	[°C]	–5 ... +50		
Temperature of medium	[°C]	–5 ... +50		

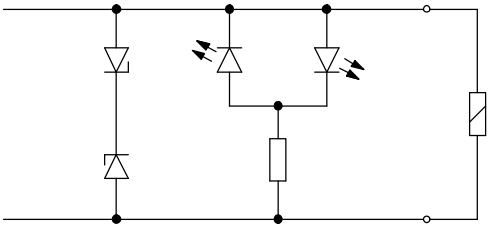
1) Pneumatic spring.

Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[DC V]	24 ±10%
Nominal operating voltage	[DC V]	22
Power	[W]	0.7
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)
Signal status display		LED
Maximum switching frequency	[Hz]	2

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant
	Contains paint-wetting impairment substances

Pin allocation for electrical connection box			
	Pin		Description
Rectangular plug connector, plug pattern H			
	1	+ or –	Protective circuit without holding current reduction
	2	+ or –	
Round plug, M8, 3-pin			
	1	Not used	Protective circuit without holding current reduction
	3	+ or –	
	4	+ or –	

Protective circuit without holding current reduction



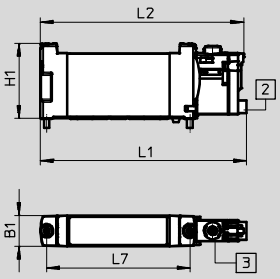
The solenoid coils are equipped with a protective circuit to arrest sparks and protect against polarity reversal.

Solenoid valves VUVG-BK14, sub-base valves G1/8

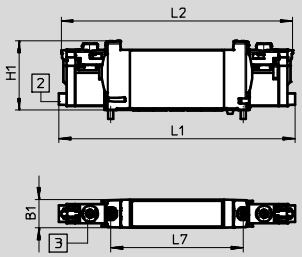
Technical data

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

2x 3/2-way, 5/2-way valve, single solenoid



5/2-way valve, double solenoid



Note

More dimensions
Electrical connection boxes
➔ Page 114

2 Horizontal electrical connection

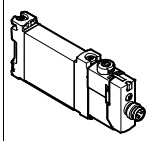
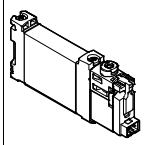
3 Manual override

Type	B1	H1	L1	L2	L7
VUVG-BK14-T32C-...	14.4	34.8	118.9	116.4	66.5
VUVG-BK14-B52-...					
VUVG-BK14-M52-...			95.6	94.4	

Solenoid valves VUVG-BK14, sub-base valves G1/8

Ordering data

★ Core product range

Ordering data				
	Description		Part no.	Type
Sub-base valve G1/8, with electrical connection box R8				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ 8042574	VUVG-BK14-T32C-AT-F-1R8L-S
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	★ 8042575	VUVG-BK14-M52-AT-F-1R8L-S
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ 8042576	VUVG-BK14-B52-T-F-1R8L-S
Sub-base valve G1/8, with electrical connection box H2				
	2x 3/2-way valve			
	Internal pilot air supply	Normally closed, reset method: pneumatic spring	★ 8042570	VUVG-BK14-T32C-AT-F-1H2L-S
	5/2-way valve, single solenoid			
	Internal pilot air supply	Reset method: pneumatic spring	★ 8042571	VUVG-BK14-M52-AT-F-1H2L-S
	5/2-way valve, double solenoid			
	Internal pilot air supply		★ 8042572	VUVG-BK14-B52-T-F-1H2L-S

Festo core product range

★ Generally ready for shipping ex works in 24 hours

☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG-B14, sub-base valves G1/8

Technical data

FESTO

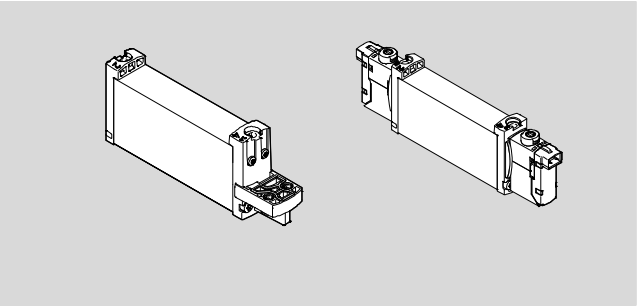
Function
2x 3/2C, 2 x3/2U, 2 x3/2
5/2-way, single pilot
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 14 mm

Flow rate
410 ... 700 l/min

Voltage
5, 12 and 24 V DC



General Technical data VUVG-B														
Valve function			T32-A			T32-M			M52-A	B52	M52-M	P53		
Normal position			C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position			Single pilot							Double solenoid	One position	One position		
Reset method: pneumatic spring			Yes			None			Yes	–	None	–		
Reset method: mechanical spring			None			Yes			None	–	Yes	Yes		
Vacuum operation at port 1			None			Only with external pilot air supply								
Size		[mm]	14											
Design			Piston spool											
Sealing principle			Soft											
Type of control			Electric											
Type of control			Pilot											
Pilot air supply			External, internal; can be selected via sub-base											
Exhaust function			With flow control option											
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting			On manifold rail											
Mounting position			Optional											
Nominal size		[mm]	4.6			4.3			5.6					
Standard nominal flow rate		[l/min]	600	580		470	450		630	680		600	580	580
Flow rate on manifold rail G1/8		[l/min]	510			430	410		520	570		520	500	460
Switching time	On/off	[ms]	8/23			15/11			14/22	–	13/40	12/40		
	Changeover	[ms]	–							8		20		
Pneumatic connection	1, 3, 5		G1/4 in manifold rail											
	2, 4		G1/8 in manifold rail											
	12/14, 82/84		M5 in manifold rail											
Product weight		[g]	89			80			78	89	70	89		
Approval certificate			c UL us - Recognized (OL)											
			c CSA us (OL)											
			RCM mark											
CE marking (see declaration of conformity)[5]			To EU EMC Directive											
			to EU Low Voltage Directive											
Corrosion resistance class CRC[6]			2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
6) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Solenoid valves VUVG-B14, sub-base valves G1/8

Technical data

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[2]	M52-A[1]	B52	M52-M[2]	P53
Operating medium			Compressed air to ISO 8573-2010 [7:4:4]					
Note about the operating/pilot medium			Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure	Internal	[bar]	1.5 ... 8	3 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
	External	[bar]	1.5 ... 10	–0.9 ... 10			–0.9 ... 8	–0.9 ... 10
Pilot pressure[3]		[bar]	1.5 ... 8	3 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
Ambient temperature		[°C]	–5 ... +50, with holding current reduction –5 ... +60					
Temperature of medium		[°C]	––5 ... +50, with holding current reduction –5 ... +60					

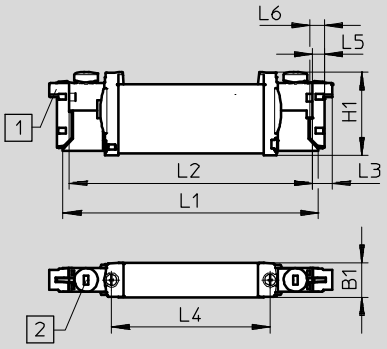
1) Pneumatic spring.
2) Mechanical spring.
3) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

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

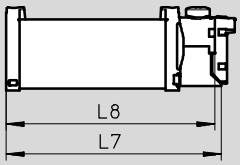
2x 3/2-way, 5/2-way and 5/3-way valve



1 Horizontal electrical connection

2 Manual override

5/2-way valve, single solenoid,



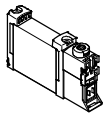
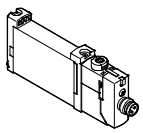
Note

More dimensions
Electrical connection boxes
➔ Page 114

Type	B1	H1	L1	L2	L3	L4	L5	L6	L7	L8
VUVG-B14 -...-F ...	14	34.8	107	102	8	66.5	4.9	6.2	89.5	87

Solenoid valves VUVG-B14, sub-base valves G1/8

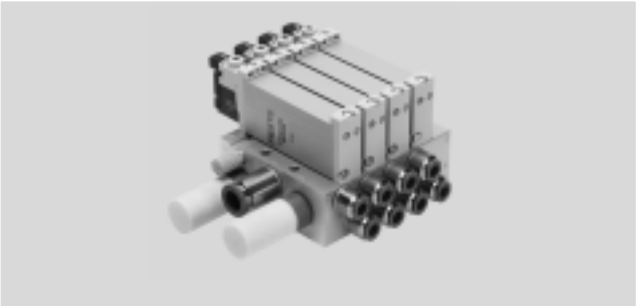
Ordering data

Ordering data				
	Description		Part no.	Type
Sub-base valve G1/8, without electrical connection box				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**566513**	**VUVG-B14-T32C-AZT-F-1P3**
		Normally open, reset method: pneumatic spring	**566514**	**VUVG-B14-T32U-AZT-F-1P3**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**566515**	**VUVG-B14-T32H-AZT-F-1P3**
		Normally closed, reset method: mechanical spring	**574376**	**VUVG-B14-T32C-MZT-F-1P3**
		Normally open, reset method: mechanical spring	**574377**	**VUVG-B14-T32U-MZT-F-1P3**
		1x normally open, 1x normally closed, reset method: mechanical spring	**574378**	**VUVG-B14-T32H-MZT-F-1P3**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic spring	**566516**	**VUVG-B14-M52-AZT-F-1P3**
		Reset method: mechanical spring	**574379**	**VUVG-B14-M52-MZT-F-1P3**
	5/2-way valve, double solenoid			
	External pilot air supply		**566517**	**VUVG-B14-B52-ZT-F-1P3**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**566518**	**VUVG-B14-P53C-ZT-F-1P3**
		Mid-position exhausted, mechanical spring reset method	**566519**	**VUVG-B14-P53E-ZT-F-1P3**
		Mid-position pressurized, mechanical spring reset method	**566520**	**VUVG-B14-P53U-ZT-F-1P3**
Sub-base valve G1/8, with electrical connection box R8				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**574242**	**VUVG-B14-T32C-AZT-F-1R8L**
		Normally open, reset method: pneumatic spring	**574243**	**VUVG-B14-T32U-AZT-F-1R8L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**574244**	**VUVG-B14-T32H-AZT-F-1R8L**
		Normally closed, reset method: mechanical spring	**578248**	**VUVG-B14-T32C-MZT-F-1R8L**
		Normally open, reset method: mechanical spring	**8031517**	**VUVG-B14-T32U-MZT-F-1R8L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8031518**	**VUVG-B14-T32H-MZT-F-1R8L**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic spring	**574245**	**VUVG-B14-M52-AZT-F-1R8L**
		Reset method: mechanical spring	**578158**	**VUVG-B14-M52-MZT-F-1R8L**
	5/2-way valve, double solenoid			
	External pilot air supply		**574246**	**VUVG-B14-B52-ZT-F-1R8L**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**574247**	**VUVG-B14-P53C-ZT-F-1R8L**
		Mid-position exhausted, mechanical spring reset method	**574249**	**VUVG-B14-P53E-ZT-F-1R8L**
		Mid-position pressurized, mechanical spring reset method	**574248**	**VUVG-B14-P53U-ZT-F-1R8L**

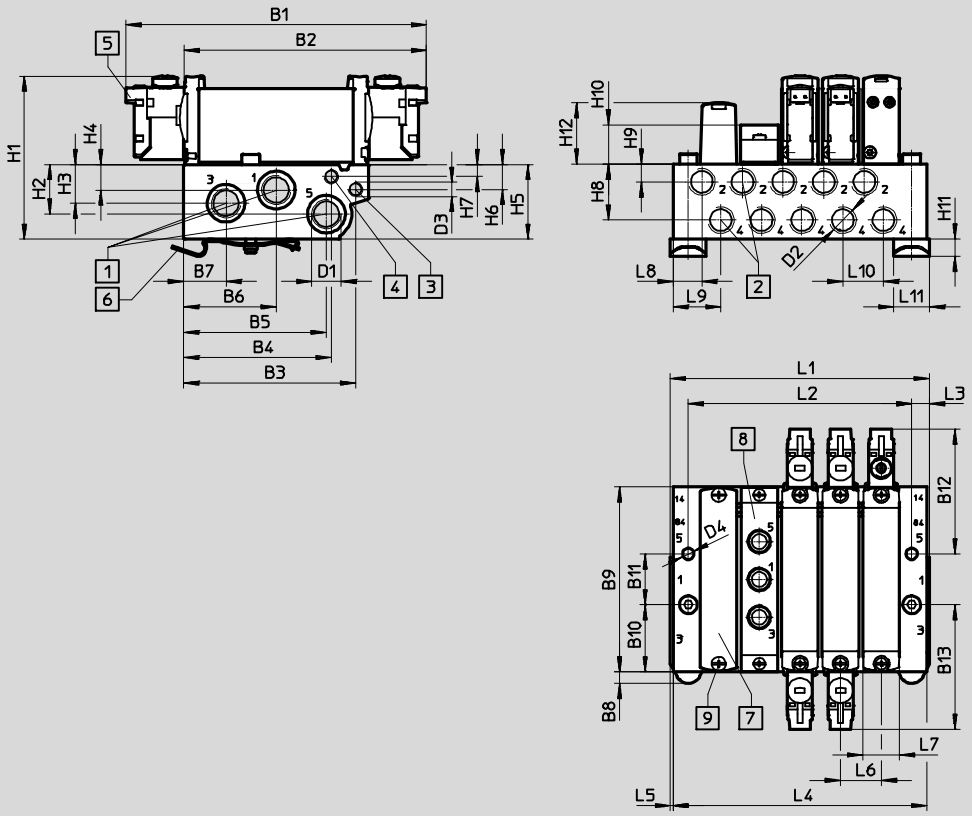
Solenoid valves VUVG-B14, sub-base valves G1/8

Manifold assembly

Sub-base valve for manifold assembly
Connection G1/8



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



- Note

More dimensions
Electrical connection boxes
➔ Page 114

1 Ports 1, 3 and 5
2 Ports 2 and 4
3 Connections 12, 14
4 Connections 82, 84
5 Electrical connection for electrical sub-bases and accessories
6 H-rail mounting (two M4x35 screws are required for mounting)
7 Cover plate
8 Supply plate
9 Valves/blanking plate mounting on manifold rail

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
VABM-L1-14W-G14	118.3	95.1	67.7	58.2	56.3	36.6	16.7	4.5	72.9	26.5	20	49.1

Type	B13	D1	D2	D3	D4	H1	H2	H3	H4	H5
VABM-L1-14W-G14	49.1	G1/4	G1/8	M5	Ø 4.5	64.3	19.6	15.3	10.1	29.5

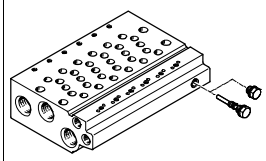
Type	H6	H7	H8	H9	H10	H11	H12	L3	L5	L6	L7	L8	L9	L10	L11
VABM-L1-14W-G14	9.8	4.8	22.1	7	15.4	6.8	23.9	6	1	16	14.4	11.3	18.5	16	14

Solenoid valves VUVG-B14, sub-base valves G1/8

Ordering data

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1	56.3	72.3	88.3	104.3	120.3	136.3	152.3	168.3	184.3	216.3	248.3	280.3
L2	40	56	72	88	104	120	136	152	168	200	232	264
L4	54.3	70.3	86.3	102.3	118.3	134.3	150.3	166.3	182.3	214.3	246.6	278.3
VABM weight [g]	232	306	380	454	528	602	676	750	824	972	1120	1268

Technical data – Manifold rails[1)]

	Ports			CRC	Material[3)]	Operating pressure [bar]	Max. tightening torque for assembly [Nm]		
	2, 4	1, 3, 5	12/14, 82/84				Valve	H-rail	Wall
	G1/8	G1/4	M5	2[2)]	Wrought aluminium alloy	–0.9 ... 10	0.65	1.5	3

1) Blanking plugs are included with the manifold rail.
2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
3) Note on materials: RoHS-compliant.

Order code – Manifold rails

VABM	–	L1	–	14	W	–	G14	–	

Valve manifold parts
Manifold rail **VABM**

Valve series
VUVG **L1**

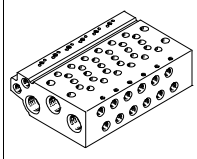
Size
14 mm **14**

Manifold rail with port 1, 2, 3, 4, 5, 12/14, 82/84
Port 2 and 4 with G1/8 thread **W**

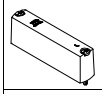
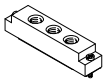
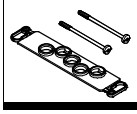
Ports 1, 3, 5
G14 G1/4 thread

Number of valve positions
2 to 10, 12, 14 and 16

Ordering data – Manifold rail

	Description		Part no.	Type
Manifold rail for sub-base valve G1/8				
	For size B14 (G1/8)	2 valve positions	★ **566642**	**VABM-L1-14W-G14-2**
		3 valve positions	★ **566643**	**VABM-L1-14W-G14-3**
		4 valve positions	★ **566644**	**VABM-L1-14W-G14-4**
		5 valve positions	**566645**	**VABM-L1-14W-G14-5**
		6 valve positions	★ **566646**	**VABM-L1-14W-G14-6**
		7 valve positions	**566647**	**VABM-L1-14W-G14-7**
		8 valve positions	★ **566648**	**VABM-L1-14W-G14-8**
		9 valve positions	**566649**	**VABM-L1-14W-G14-9**
		10 valve positions	★ **566650**	**VABM-L1-14W-G14-10**
		12 valve positions	**566651**	**VABM-L1-14W-G14-12**
		14 valve positions	**566652**	**VABM-L1-14W-G14-14**
		16 valve positions	**566653**	**VABM-L1-14W-G14-16**

Festo core product range
★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Ordering data – Accessories				
	Description		Part no.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For valve position on manifold rail, including screws and seal		★ 569989	VABB-L1-14
Separator				Technical data ➔ Internet: vabd
	For creating pressure zones		569996	VABD-10-B
Supply plate				Technical data ➔ Internet: vabf
	For valve position on manifold rail, including screws and seal		569993	VABF-L1-14-P3A4-G18
Seals				Technical data ➔ Internet: vabd
	For sub-base valves G1/8	Delivery unit: 10 sets (each with 2 screws and 1 seal)	566676	VABD-L1-14B-S-G18

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Solenoid valves VUVG, sub-base valves G1/4

Type codes

VUVG	–	B		18	–		–		Z		➔

Directional control valve type	
Sub-base valve	**B**

Design	
Piston spool with sealing cartridge	–

Size	
18 mm	**18**

Valve function	
5/2-way valve, bistable	**B52**
5/2-way valve, single solenoid,	**M52**
5/3-way valve, mid-position closed	**P53C**
5/3-way valve, mid-position exhausted	**P53E**
5/3-way valve, mid-position pressurised	**P53U**
2x 3/2-way valve, normally closed	**T32C**
2x 3/2-way valve, 1x normally open, 1x normally closed	**T32H**
2x 3/2-way valve, normally open	**T32U**

Reset method	
Pneumatic spring with T32 and M52	**A**
Mechanical spring with T32 and M52	**M**
Pneumatic/mechanical spring with M52	**R**
With B52 and P53	–

Pilot air	
External	**Z**

Manual override	
Non-detenting	**H**
Covered	**S**
Non-detenting, detenting	**T**
Detenting, without accessories	**Y**

Solenoid valves VUVG, sub-base valves G1/4

Type codes

–	F	–				L	–	

Accessories for valve/connecting cable	
C1...4	Connection pattern H: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
N1...4	M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
N5...8	M8x1, 4-pin, straight: 5 = 2.5 m, 6 = 5 m; angled: 7 = 2.5 m, 8 = 5 m
S1...4	Connection pattern S, 1 = 0.5 m, 2 = 1 m, 3 = 2.5, 4 = 5 m
W1...4	Connection pattern H, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
WS1...4	Connection pattern S with flying leads, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m

Advertisement	
L	LED

Circuitry	
–	Without holding current reduction (HCR)
R	With holding current reduction (HCR)

Electrical connection	
H2	Connection pattern H, horizontal plug connector
H3	Connection pattern H, vertical plug
K6...9	Cables: 6 = 0.5 m, 7 = 1 m, 8 = 2.5 m, 9 = 5 m
L1...4	With 2x flying lead: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
P3	Without E-box
R1	Individual plug connector M8, 4-pin
R8	Individual plug connector M8, 3-pin
S2	Connection pattern S, horizontal plug connector
S3	Connection pattern S, vertical connector

Nominal operating voltage	
1	24 V DC
4	5 V DC
5	12 V DC

Pneumatic connection	
F	In the manifold rail

Solenoid valves VUVG-B18, sub-base valves G1/4

Technical data

FESTO

Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 18 mm

Flow rate
800 ... 1080 l/min

Voltage
5, 12 and 24 V DC

General technical data, VUVG-B G1/4													
Valve function		T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position		C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position		Single pilot							Double solenoid	One position	One position		
Reset method: pneumatic spring		Yes			None			Yes[5]	–	None	–		
Reset method: mechanical spring		None			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1		None			Only with external pilot air supply								
Design		Piston spool											
Sealing principle		Soft											
Type of control		Electric											
Type of control		Pilot											
Pilot air supply		External, internal; can be selected via sub-base											
Exhaust function		With flow control option											
Manual override		Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting		On manifold rail											
Mounting position		Optional											
Nominal size	[mm]	5.7						6.9	7.3	6.9	6.5		
Standard nominal flow rate	[l/min]	900						1150			1080		
Flow rate on manifold rail		800						1000			950		
Switching time on/off	[ms]	13/27			15/22			15/31	–	10/45	15/48		
Changeover time	[ms]	–							11		29		
Size	[mm]	18											
Ports	1, 3, 5	G3/8 in manifold rail											
	2, 4	G1/4 in manifold rail											
	12/14, 82/84	M5 in manifold rail											
Product weight	[g]	164						154	160	154	160		
Approval certificate		c UL us - Recognized(OL)											
		c CSA us (OL)											
		RCM mark											
CE marking (see declaration of conformity)[6]		To EU EMC Directive											
Corrosion resistance class CRC[7]		2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
6) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
7) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Solenoid valves VUVG-B18, sub-base valves G1/4

Technical data

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[3]	M52-R[2]	B52	M52-M[3]	P53
Operating medium			Compressed air to ISO 8573-2010 [7:4:4]					
Operating pressure	Internal	[bar]	1.5 ... 8	3.5 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
	External	[bar]	1.5 ... 10	–0.9 ... 10			–0.9 ... 8	–0.9 ... 10
Pilot pressure[4)]		[bar]	1.5 ... 8	3 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
Ambient temperature		[°C]	–5 ... +50, with holding current reduction –5 ... +60					
Temperature of medium		[°C]	–5 ... +50, with holding current reduction –5 ... +60					

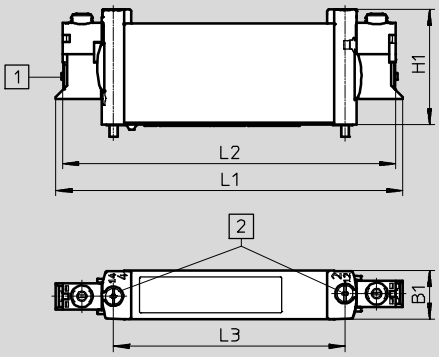
1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

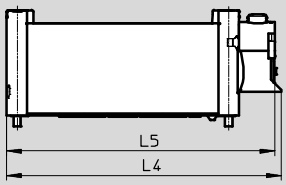
Electrical data		
Electrical connection		Via electrical connection box ➔ Page 112
Operating voltage	[DC V]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle ED	[%]	100
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)

Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

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

2x 3/2-way, 5/2-way and 5/3-way valve





Note

More dimensions
Electrical connection boxes
➔ Page 114

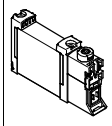
1 Horizontal electrical connection

2 Manual override

Type	B1	H1	L1	L2	L3	L4	L5
VUVG-B18 -...-F...	18.3	43.1	129.4	124.4	86.4	112.2	109.7

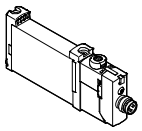
Solenoid valves VUVG-B18, sub-base valves G1/4

Ordering data

Ordering data				
	Description		Part no.	Type
Sub-base valve G1/4, without electrical connection box				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**574443**	**VUVG-B18-T32C-AZT-F-1P3**
		Normally open, reset method: pneumatic spring	**574444**	**VUVG-B18-T32U-AZT-F-1P3**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**574445**	**VUVG-B18-T32H-AZT-F-1P3**
		Normally closed, reset method: mechanical spring	**574446**	**VUVG-B18-T32C-MZT-F-1P3**
		Normally open, reset method: mechanical spring	**574447**	**VUVG-B18-T32U-MZT-F-1P3**
		1x normally open, 1x normally closed, reset method: mechanical spring	**574448**	**VUVG-B18-T32H-MZT-F-1P3**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic/mechanical spring	**574449**	**VUVG-B18-M52-RZT-F-1P3**
		Reset method: mechanical spring	**574450**	**VUVG-B18-M52-MZT-F-1P3**
	5/2-way valve, double solenoid			
	External pilot air supply		**574451**	**VUVG-B18-B52-ZT-F-1P3**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**574452**	**VUVG-B18-P53C-ZT-F-1P3**
		Mid-position exhausted, mechanical spring reset method	**574453**	**VUVG-B18-P53E-ZT-F-1P3**
		Mid-position pressurized, mechanical spring reset method	**574454**	**VUVG-B18-P53U-ZT-F-1P3**

Solenoid valves VUVG-B18, sub-base valves G1/4

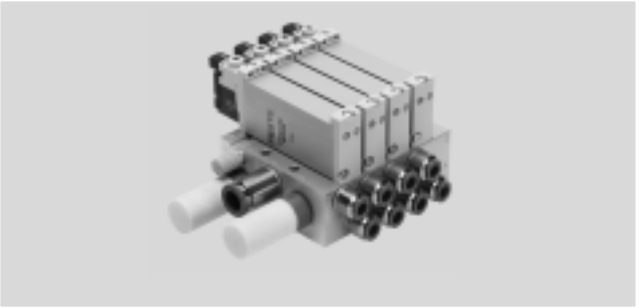
Ordering data

Ordering data				
	Description		Part no.	Type
Sub-base valve G1/4, with electrical connection box R8				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**8031537**	**VUVG-B18-T32C-AZT-F-1R8L**
		Normally open, reset method: pneumatic spring	**8031538**	**VUVG-B18-T32U-AZT-F-1R8L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**8031539**	**VUVG-B18-T32H-AZT-F-1R8L**
		Normally closed, reset method: mechanical spring	**8031540**	**VUVG-B18-T32C-MZT-F-1R8L**
		Normally open, reset method: mechanical spring	**8031541**	**VUVG-B18-T32U-MZT-F-1R8L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8031542**	**VUVG-B18-T32H-MZT-F-1R8L**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic/mechanical spring	**8031543**	**VUVG-B18-M52-RZT-F-1R8L**
		Reset method: mechanical spring	**8031544**	**VUVG-B18-M52-MZT-F-1R8L**
	5/2-way valve, double solenoid			
	External pilot air supply		**8031545**	**VUVG-B18-B52-ZT-F-1R8L**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**8031546**	**VUVG-B18-P53C-ZT-F-1R8L**
		Mid-position exhausted, mechanical spring reset method	**8031547**	**VUVG-B18-P53E-ZT-F-1R8L**
		Mid-position pressurized, mechanical spring reset method	**8031548**	**VUVG-B18-P53U-ZT-F-1R8L**

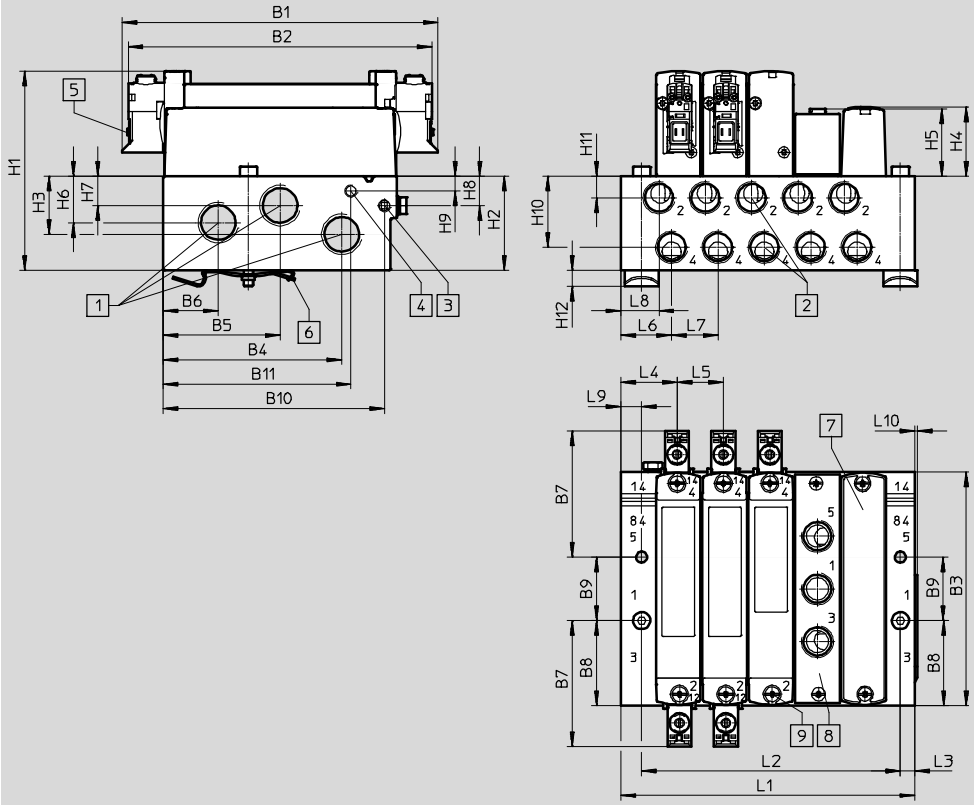
Solenoid valves VUVG-B18, sub-base valves G1/4

Manifold assembly

Sub-base valve for manifold assembly
Connection G1/4



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



- Note

More dimensions
Electrical connection boxes
➔ Page 114

1 Ports 1, 3 and 5
2 Ports 2, 4
3 Ports 12, 14
4 Ports 82, 84

5 Electrical connection for electrical sub-bases and accessories

6 H-rail mounting (two M4x40 screws are required for mounting)

7 Cover plate
8 Supply plate
9 Valves/blanking plate mounting on manifold rail

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	D1
VABM-L1-18W-G38	129.4	124.4	95.6	73.1	47.8	22.5	51.7	34.8	26	90.6	76.8	4.5

Type	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12
VABM-L1-18W-G38	81.6	38.5	11.5	28.4	27.6	19	12	12.1	6.1	29.1	8.8	6.5

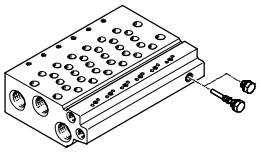
Type	L3	L4	L5	L6	L7	L8	L9	L10
VABM-L1-18W-G38	6	23	19	20.8	19	15.6	8.5	1

Solenoid valves VUVG-B18, sub-base valves G1/4

Ordering data

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1	63.5	82.5	101.5	120.5	139.5	158.5	177.5	196.5	215.5	253.5	291.5	329.5
L2	49	68	87	106	125	144	163	182	201	239	277	315
VABM weight [g]	232	306	380	454	528	602	676	750	824	972	1120	1268

Technical data – Manifold rails[1)]

	Ports			CRC	Material[3)]	Operating pressure [bar]	Max. tightening torque for assembly [Nm]		
	2, 4	1, 3, 5	12/14, 82/84				Valve	H-rail	Wall
	G1/4	G3/8	M5	2[2)]	Wrought aluminium alloy	–0.9 ... 10	1.18	1.5	3

1) Blanking plugs are included with the manifold rail.
2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
3) Note on materials: RoHS-compliant.

Order code – Manifold rails

VABM	–	L1	–	18	W	–	G38	–	

Valve manifold parts
Manifold rail **VABM**

Valve series
VUVG **L1**

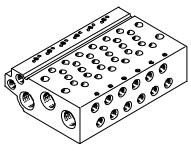
Size
18 mm **18**

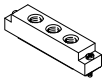
Manifold rail with port 1, 2, 3, 4, 5, 12/14, 82/84
Port 2 and 4 with G1/4 thread **W**

Ports 1, 3, 5
G38 G3/8 thread

Number of valve positions
2 to 10, 12, 14 and 16

Ordering data – Manifold rails

	Description		Part no.	Type
Manifold rail for sub-base valve G1/4				
	For size B18 (G1/4)	2 valve positions	**574467**	**VABM-L1-18W-G38-2**
		3 valve positions	**574468**	**VABM-L1-18W-G38-3**
		4 valve positions	**574469**	**VABM-L1-18W-G38-4**
		5 valve positions	**574470**	**VABM-L1-18W-G38-5**
		6 valve positions	**574471**	**VABM-L1-18W-G38-6**
		7 valve positions	**574472**	**VABM-L1-18W-G38-7**
		8 valve positions	**574473**	**VABM-L1-18W-G38-8**
		9 valve positions	**574474**	**VABM-L1-18W-G38-9**
		10 valve positions	**574475**	**VABM-L1-18W-G38-10**
		12 valve positions	**574476**	**VABM-L1-18W-G38-12**
		14 valve positions	**574477**	**VABM-L1-18W-G38-14**
		16 valve positions	**574478**	**VABM-L1-18W-G38-16**

Ordering data – Accessories				
	Description		Part no.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For valve position on manifold rail, including screws and seal		★ **574482**	**VABB-L1-18**
Separator				Technical data ➔ Internet: vabd
	For creating pressure zones		**574483**	**VABD-14-B**
Supply plate				Technical data ➔ Internet: vabf
	For valve position on manifold rail, including screws and seal		**574481**	**VABF-L1-18-P3A4-G14**
Seals				Technical data ➔ Internet: vabd
	For sub-base valves G1/4	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**574480**	**VABD-L1-18B-S-G14**

- Note

Connect supply plate at port 1 with compressed air. Reverse operation (pressure at port 3, 5) is not permissible.

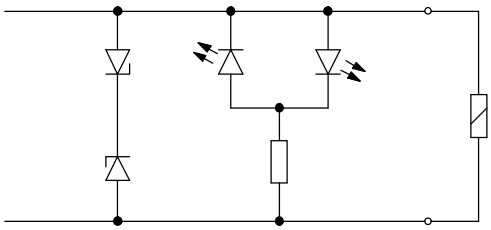
Festo core product range

★ Generally ready for shipping ex works in 24 hours

☆ Generally ready for shipping ex works in 5 days

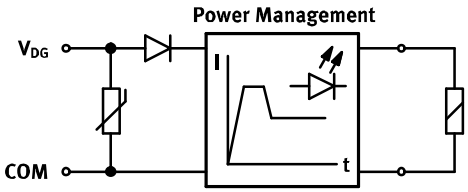
General technical data							
Variants	H2	H3	S2	S3	L-	R1	R8
Mounting position	Optional						
Electrical connection	2-pin, socket				Flying lead	Individual plug connector M8, 4-pin	Individual plug connector M8, 3-pin
Degree of protection	IP40					IP65	
Signal status display	LED						
Type of mounting	Clip					Self-tapping screw	
Note on materials	RoHS-compliant						
Housing colour	Black						
Information on materials - housing	PA						
Approval certificate	RCM mark						

Protective circuit without holding current reduction

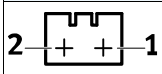
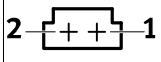
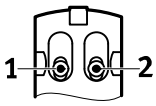


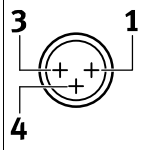
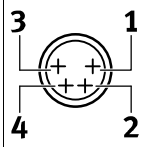
The solenoid coils (P type) of the 5, 12 and 24 V designs are equipped with a protective circuit to arrest sparks and protect against polarity reversal.

Protective circuit with holding current reduction



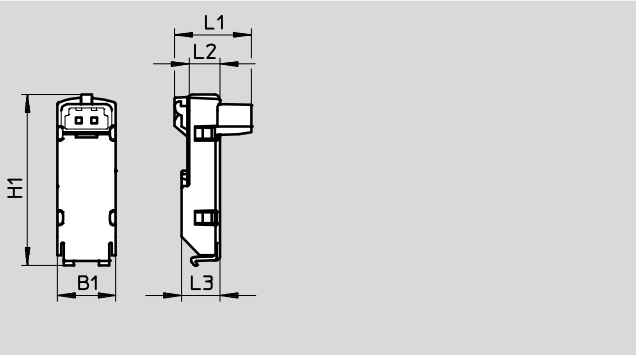
The 24 V DC design (R type) additionally features holding current reduction. This reduces the power from 1 W to 0.35 W.

Pin allocation Electrical connection box			
	Pin		Description
Rectangular plug connector, connection pattern H			
	VAVE-L1-1VH2-LP, VAVE-L1-1VH3-LP		
	1	+ or –	Without holding current reduction
	2	+ or –	
	VAVE-L1-1H2-LR, VAVE-L1-1H3-LR		
	1	+	With holding current reduction
	2	–	
Rectangular plug connector, connection pattern S			
	VAVE-L1-1VS2-LP, VAVE-L1-1VS3-LP		
	1	+ or –	Without holding current reduction
	2	+ or –	
	VAVE-L1-1S2-LR, VAVE-L1-1S3-LR		
	1	–	With holding current reduction
	2	+	
Flying leads, 2-pin			
	VAVE-L1-1VL1...4- LP		
	1	+ or –	Without holding current reduction
	2	+ or –	
	VAVE-L1-1L1...4-LR		
	1	–	With holding current reduction
	2	+	

Pin allocation for electrical connection box			
	Pin		Description
Round plug, M8, 3-pin			
	VAVE-L1-1VR8-LP		
	1	Not used	Without holding current reduction
	3	+ or –	
	4	+ or –	
	VAVE-L1-1R8-LR		
	1	Not used	With holding current reduction
	3	+ or –	
	4	+ or –	
Round plug connector, M8, 4-pin			
	VAVE-L1-1VR1-LP		
	1	Not used	Without holding current reduction
	2	Not used	
	3	+ or –	
	4	+ or –	
	VAVE-L1-1R1-LR		
	1	Not used	With holding current reduction
	2	Not used	
	3	+ or –	
	4	+ or –	
Open cable end			
	VAVE-L1-1VK...		
	BK	+ or –	Without holding current reduction
	BK	+ or –	
	VAVE-L1-1K...		
	BK	+ or –	With holding current reduction
	BK	+ or –	

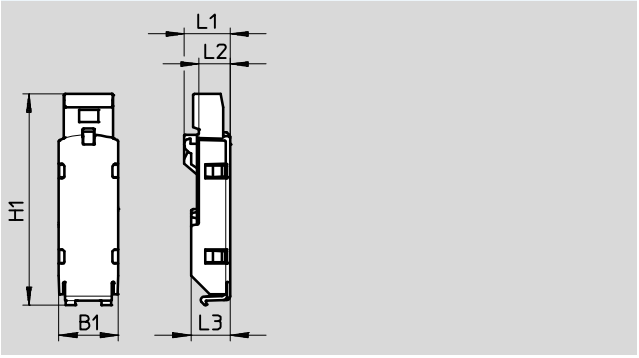
Dimensions Download CAD data ➔ **www.festo.com**

E-boxes, S2/H2



Type	B1	H1 ±0.5	L1	L2	L3
VAVE-L1-1VS2-LP	9.8	28.8	12.9	5.2	6.5
VAVE-L1-1S2-LR					
VAVE-L1-1VH2-LP			10.8		
VAVE-L1-H2-LR					

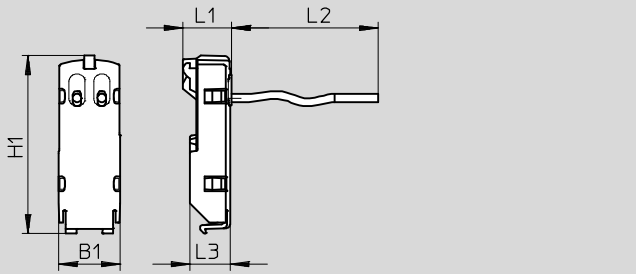
Electrical connection boxes, S3/H3



Type	B1	H1 ±0.5	L1	L2	L3
VAVE-L1-1VS3-LP	9.8	35	7.6	5.2	6.5
VAVE-L1-1S3-LR					
VAVE-L1-1VH3-LP		33.6	7.5		
VAVE-L1-1H3-LR					

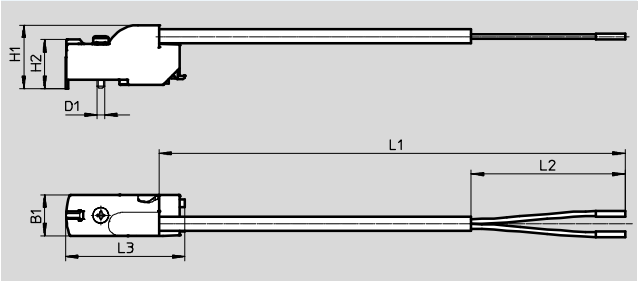
Dimensions Download CAD data ➔ **www.festo.com**

E-boxes, VL11 ...1 4



Type	B1	H1 ±0.5	L1	L2	L3
VAVE-L1-1VL1-LP	9.8	28.8	7.9	0.5	6.5
VAVE-L1-1L1-LR					
VAVE-L1-1VL2-LP				1	
VAVE-L1-1L2-LR					
VAVE-L1-1VL3-LP				2.5	
VAVE-L1-1L3-LR					
VAVE-L1-1VL4-LP				5	
VAVE-L1-1L4-LR					

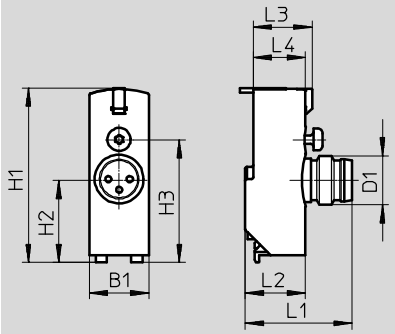
E-boxes, VK6 ... 9



Type	B1	H1	H2 ±0.3	L1	L2 ±5	L3 ±0.5	D1 ∅
VAVE-L1-1VK6-LP	9.8	15.3	11.8	0.5	50	28.7	1.8
VAVE-L1-1VK7-LP				1.0			
VAVE-L1-1VK8-LP				2.5			
VAVE-L1-1VK9-LP				5.0			
VAVE-L1-1K6-LR				0.5			
VAVE-L1-1K7-LR				1.0			
VAVE-L1-1K8-LR				2.5			
VAVE-L1-1K9-LR				5.0			

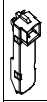
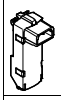
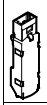
Dimensions Download CAD data ➔ **www.festo.com**

E-boxes, R8/R1



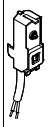
Type	B1	H1	H2	H3	L1	L2	L3	L4	D1 ∅
VAVE-L1-1VR8-LP	9.8	28.7	13.7	20.2	18.4	9.9	9.7	8.6	M8
VAVE-L1-1VR1-LP									

Ordering data – Electrical connection boxes

Design type	Plugs	Additional functions	Ambient temperature [°C]	Code	Power [W]	Operating voltage [DC V]	Part no.	Type
	NEBV-H1 ...	Spark arresting, bipolar, IP40	−5 ... +50	H2	1	12/24	★ **566714**	**VAVE-L1-1VH2-LP**
		Spark arresting, holding current reduction, IP40	−5 ... +60	H2R	0.35	24	★ **566716**	**VAVE-L1-1H2-LR**
	NEBV-H1 ...	Spark arresting, bipolar, IP40	−5 ... +50	H3	1	12/24	**566715**	**VAVE-L1-1VH3-LP**
		Spark arresting, holding current reduction, IP40	−5 ... +60	H3R	0.35	24	**566717**	**VAVE-L1-1H3-LR**
	NEBV-HS ...	Spark arresting, bipolar, IP40	−5 ... +50	S2	1	12/24	**566718**	**VAVE-L1-1VS2-LP**
		Spark arresting, holding current reduction, IP40	−5 ... +60	S2R	0.35	24	**566720**	**VAVE-L1-1S2-LR**
	NEBV-HS ...	Spark arresting, bipolar, IP40	−5 ... +50	S3	1	12/24	**566719**	**VAVE-L1-1VS3-LP**
		Spark arresting, holding current reduction, IP40	−5 ... +60	S3R	0.35	24	**566721**	**VAVE-L1-1S3-LR**
	Open cable end	Spark arresting, bipolar, IP40	−5 ... +50	L1	1	12/24	**566722**	**VAVE-L1-1VL1-LP**
				L2			**566723**	**VAVE-L1-1VL2-LP**
				L3			**566724**	**VAVE-L1-1VL3-LP**
				L4			**566725**	**VAVE-L1-1VL4-LP**
		Spark arresting, holding current reduction, IP40	−5 ... +60	L1R	0.35	24	**566726**	**VAVE-L1-1L1-LR**
				L2R			**566727**	**VAVE-L1-1L2-LR**
				L3R			**566728**	**VAVE-L1-1L3-LR**
				L4R			**566729**	**VAVE-L1-1L4-LR**

Festo core product range
★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

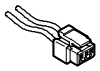
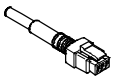
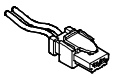
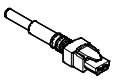
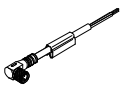
Ordering data – Electrical connection boxes

Design type	Plugs	Additional functions	Ambient temperature [°C]	Code	Power [W]	Operating voltage [V DC]	Cable length [m]	Part no.	Type
	Open cable end	Spark arresting, bipolar, IP65	–5 … +60	K6	1	12/24	0.5	**573941**	**VAVE-L1-1VK6-LP**
				K7			1	★ **573942**	**VAVE-L1-1VK7-LP**
				K8			2.5	**573943**	**VAVE-L1-1VK8-LP**
				K9			5	**573944**	**VAVE-L1-1VK9-LP**
		Spark arresting, bipolar, holding current reduction, IP65	–5 … +60	K6R	0.35	24	0.5	**573945**	**VAVE-L1-1K6-LR**
				K7R			1	**573946**	**VAVE-L1-1K7-LR**
				K8R			2.5	**573947**	**VAVE-L1-1K8-LR**
				K9R			5	**573948**	**VAVE-L1-1K9-LR**
	NEBU-M8 …	Spark arresting, bipolar, IP65	–5 … +60	R8	1	12/24	–	★ **573919**	**VAVE-L1-1VR8-LP**
		Spark arresting, bipolar, holding current reduction, IP65		R8R	0.35	24	–	**573920**	**VAVE-L1-1R8-LR**
		Spark arresting, bipolar, IP65		R1	1	12/24	–	**573921**	**VAVE-L1-1VR1-LP**
		Spark arresting, bipolar, holding current reduction, IP65		R1R	0.35	24	–	**573922**	**VAVE-L1-1R1-LR**

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Ordering data

	Description	Cable length [m]	Part no.	Type
Plug socket with cable, not sheathed, open end				Technical data ➔ Internet: nebv
	For electrical connection box code H2, H2R or H3, H3R, 2-pin socket	0.5	★ 566654	NEBV-H1G2-KN-0.5-N-LE2
		1	★ 566655	NEBV-H1G2-KN-1-N-LE2
		2.5	★ 566656	NEBV-H1G2-KN-2.5-N-LE2
		5	566657	NEBV-H1G2-KN-5-N-LE2
Plug socket with cable, sheathed, open end				Technical data ➔ Internet: nebv
	For electrical connection box code H2, H2R or H3, H3R, 2-pin socket	0.5	★ 566658	NEBV-H1G2-P-0.5-N-LE2
		1	★ 566659	NEBV-H1G2-P-1-N-LE2
		2.5	★ 566660	NEBV-H1G2-P-2.5-N-LE2
		5	566661	NEBV-H1G2-P-5-N-LE2
Plug socket with cable, not sheathed, open end				Technical data ➔ Internet: nebv
	For electrical connection box code S2, S2R or S3, S3R, 2-pin socket	0.5	566662	NEBV-HSG2-KN-0.5-N-LE2
		1	566663	NEBV-HSG2-KN-1-N-LE2
		2.5	566664	NEBV-HSG2-KN-2.5-N-LE2
		5	566665	NEBV-HSG2-KN-5-N-LE2
Plug socket with cable, sheathed, open end				Technical data ➔ Internet: nebv
	For electrical connection box code S2, S2R or S3, S3R, 2-pin socket	0.5	566666	NEBV-HSG2-P-0.5-N-LE2
		1	566667	NEBV-HSG2-P-1-N-LE2
		2.5	566668	NEBV-HSG2-P-2.5-N-LE2
		5	566669	NEBV-HSG2-P-5-N-LE2
Connecting cable, open end				Technical data ➔ Internet: nebu
	For E-box code R8 3-pin, straight socket, M8x1	2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
		5	★ 541334	NEBU-M8G3-K-5-LE3
	For electrical connection box code R1 4-pin, straight socket, M8x1	2.5	541342	NEBU-M8G4-K-2.5-LE4
		5	541343	NEBU-M8G4-K-5-LE4
Connecting cable, open end				Technical data ➔ Internet: nebu
	For E-box code R8 3-pin, angled socket, M8x1	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
		5	★ 541341	NEBU-M8W3-K-5-LE3
	For electrical connection box code R1 4-pin, angled socket, M8x1	2.5	541344	NEBU-M8W4-K-2.5-LE4
		5	541345	NEBU-M8W4-K-5-LE4
Connecting cable				Technical data ➔ Internet: nebu
	For electrical connection box code R8, 3-pin, straight socket, M8x1	0.5	★ 541346	NEBU-M8G3-K-0.5-M8G3
		1	★ 541347	NEBU-M8G3-K-1-M8G3
		2.5	★ 541348	NEBU-M8G3-K-2.5-M8G3
		5	★ 541349	NEBU-M8G3-K-5-M8G3
		10	569844	NEBU-M8G3-K-10-M8G3
	For electrical connection box code R1 4-pin, straight socket, M8x1	2.5	554035	NEBU-M8G4-K-2.5-M8G4

Festo core product range

★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Ordering data

	Description			Part no.	Type	PU[1]
Blanking plug					Technical data ➔ Internet: b	
	For manifold rail and valve	M5 thread		★ 3843	B-M5	10
		M7 thread		★ 174309	B-M7	10
	For manifold rail	G1/8 thread		★ 3568	B-1/8	10
		G1/4 thread		★ 3569	B-1/4	10
		G3/8 thread		★ 3570	B-3/8	10
	For valve	G1/8 thread		578406	NPQH-BK-G18-P10	10
		G1/4 thread		578407	NPQH-BK-G14-P10	10
Reducing nipple						
	Male thread M7	Female thread M5		161359	D-M5I-M7A-ISK	10
Fittings					Technical data ➔ Internet: qsm	
	M3 thread	For tubing ∅ 3 mm	Round releasing ring	133001	QSM-M3-3-I-R	10
		For tubing ∅ 4 mm	Round releasing ring	133002	QSM-M3-4-I-R	10
	M5 thread	For tubing ∅ 3 mm	Round releasing ring	133003	QSM-M5-3-I-R	10
			Oval releasing ring	★ 153313	QSM-M5-3-I	10
		For tubing ∅ 4 mm	Round releasing ring	133004	QSM-M5-4-I-R	10
			Oval releasing ring	★ 153315	QSM-M5-4-I	10
		For tubing ∅ 6 mm	Round releasing ring	133005	QSM-M5-6-I-R	10
			Oval releasing ring	★ 153317	QSM-M5-6-I	10
	M7 thread	For tubing ∅ 4 mm	Oval releasing ring	★ 153319	QSM-M7-4-I	10
		For tubing ∅ 6 mm	Round releasing ring	133007	QSM-M7-6-I-R	10
			Oval releasing ring	★ 153321	QSM-M7-6-I	10
	G1/8 thread	For tubing ∅ 4 mm	Oval releasing ring	★ 186106	QS-G1/8-4-I	10
		For tubing ∅ 6 mm	Oval releasing ring	★ 186107	QS-G1/8-6-I	10
		For tubing ∅ 8 mm	Oval releasing ring	★ 186109	QS-G1/8-8-I	10
		For tubing ∅ 10 mm	Oval releasing ring	★ 132999	QS-G1/8-10-I	10
	G1/4 thread	For tubing ∅ 6 mm	Oval releasing ring	★ 186108	QS-G1/4-6-I	10
				130677	QS-1/4-6-100	100
		For tubing ∅ 8 mm	Oval releasing ring	★ 186110	QS-G1/4-8-I	10
				★ 153016	QS-1/4-8-I	10
		For tubing ∅ 10 mm	Oval releasing ring	★ 186112	QS-G1/4-10-I	10
				★ 153018	QS-1/4-10-I	10
	3/8 thread	For tubing ∅ 8 mm	Oval releasing ring	130681	QS-3/8-8-50	50
		For tubing ∅ 10 mm	Oval releasing ring	130682	QS-3/8-10-50	50
		For tubing ∅ 12 mm	Oval releasing ring	130683	QS-3/8-12-20	20
		For tubing ∅ 16 mm	Oval releasing ring	★ 164957	QS-3/8-16	1

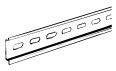
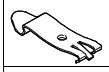
1) Packaging unit.

Festo core product range

★ Generally ready for shipping ex works in 24 hours

☆ Generally ready for shipping ex works in 5 days

Ordering data

	Description		Part no.	Type	PE[1]
Pneumatic silencers				Technical data ➔ Internet: amte	
	For M3 thread		1231120	AMTE-M-LH-M3	20
	For M5 thread		★ 1205858	AMTE-M-LH-M5	20
	For M7 thread		161418	UC-M7	1
	For For thread G1/8	High flow rate	★ 2307	U-1/8	1
		Lower flow rate	161419	UC-1/8	1
	For G1/4 thread	High flow rate	★ 2316	U-1/4	1
		Lower flow rate	165004	UC-1/4	1
	For thread G3/8	High flow rate	★ 2309	U-3/8	1
		Lower flow rate	1707427	UC-3/8	1
		Metal housing	★ 6843	U-3/8-B	1
H-rail				Technical data ➔ Internet: nrh	
	To EN 60715, 35 x 7.5 (WxH)	Length 2 m	35430	NRH-35-2000	1
H-rail mounting				Technical data ➔ Internet: vame	
	–		★ 569998	VAME-T-M4	2
Cover cap for manual override					
	Covered		540898	VMPA-HBV-B	10
	Non-detenting		540897	VMPA-HBT-B	10
	Detenting (without accessories)		8002234	VAMC-L1-CD	10
Inscription label holder				Technical data ➔ Internet: aslr	
	Holder for an inscription label and covering the mounting screw and manual override		570818	ASLR-D-L1	10

1) Packaging unit.

Festo core product range

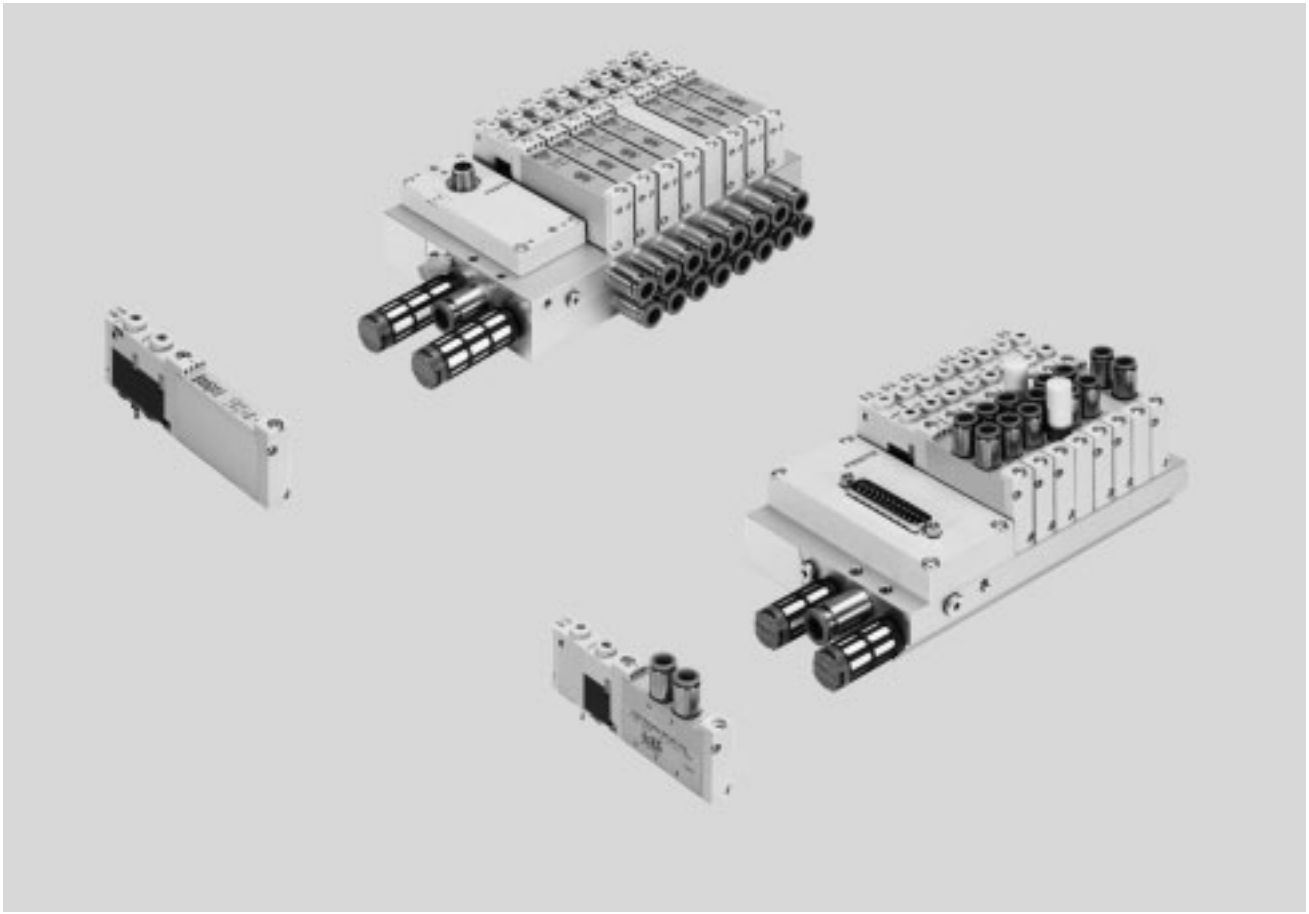
★ Generally ready for shipping ex works in 24 hours
☆ Generally ready for shipping ex works in 5 days

Ordering data						
	Description			Part no.	Type	PU[1]
Check valve						
	For manifold rails VABM-L1-10...	For blocking the flow in the event of back pressure in duct 3 and 5		**8047364**	**VABF-L1-10H-H2**	**10**
	For manifold rails VABM-L1-14...			**8047365**	**VABF-L1-14-H2**	**10**
Flow restrictor						
	For manifold rails VABM-L1-10...	For setting the flow rate during pressurisation and exhausting (for threaded connection M5)	Nominal size: 0.5 mm	**8025709**	**VFFG-T-M5-5**	**10**
			Nominal size: 0.6 mm	**8025710**	**VFFG-T-M5-6**	**10**
			Nominal size: 0.7 mm	**8025711**	**VFFG-T-M5-7**	**10**
			Nominal size: 0.85 mm	**8025712**	**VFFG-T-M5-8**	**10**
			Nominal size: 1.05 mm	**8025713**	**VFFG-T-M5-10**	**10**
			Nominal size: 1.2 mm	**8025714**	**VFFG-T-M5-12**	**10**
			Nominal size: 1.55 mm	**8025715**	**VFFG-T-M5-15**	**10**
		For setting the flow rate for pressurisation and exhausting (for ∅ 4 mm)	Nominal size: 0.5 mm	**8047346**	**VFFG-T-F4-5**	**10**
			Nominal size: 0.6 mm	**8047347**	**VFFG-T-F4-6**	**10**
			Nominal size: 0.7 mm	**8047348**	**VFFG-T-F4-7**	**10**
			Nominal size: 0.85 mm	**8047349**	**VFFG-T-F4-8**	**10**
			Nominal size: 1.05 mm	**8047350**	**VFFG-T-F4-10**	**10**
			Nominal size: 1.2 mm	**8047351**	**VFFG-T-F4-12**	**10**
			Nominal size: 1.55 mm	**8047352**	**VFFG-T-F4-15**	**10**
	For manifold rails VABM-L1-14...	For setting the flow rate for pressurisation and exhausting (for ∅ 5.8 mm)	Nominal size: 0.7 mm	**8047353**	**VFFG-T-F6-7**	**10**
			Nominal size: 0.85 mm	**8047354**	**VFFG-T-F6-8**	**10**
			Nominal size: 1.05 mm	**8047355**	**VFFG-T-F6-10**	**10**
			Nominal size: 1.15 mm	**8047356**	**VFFG-T-F6-11**	**10**
			Nominal size: 1.4 mm	**8047357**	**VFFG-T-F6-14**	**10**
			Nominal size: 1.6 mm	**8047358**	**VFFG-T-F6-16**	**10**
			Nominal size: 1.8 mm	**8047359**	**VFFG-T-F6-18**	**10**
Restrictor set						
	For manifold rails VABM-L1-10...	Two of each size, for threaded connection M5		**8025716**	**VFFG-T-M5-A-V1**	**14**
		Two of each size, for ∅ 4 mm		**8062200**	**VFFG-T-F4-A-V1**	**14**
	For manifold rails VABM-L1-14...	Two of each size, for ∅ 5.8 mm		**8062201**	**VFFG-T-F6-A-V1**	**14**

1) Packaging unit.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features



Innovative

- Festo-specific I-Port interface for bus nodes (CTEU)
- IO-Link® mode for direct connection to a higher-order IO-Link® master
- Festo-specific I-Port interface with interlock
- Variable multi-pin plug connection using Sub-D or ribbon cable
- Reversible piston spool valves, up to 24 valve positions
- Reduced power consumption
- Excellent price/performance ratio

Flexible

- Choice of quick plug connectors
- Multiple pressure zones possible
- Sub-D variant and fieldbus connection rated to IP67
- Internal or external pilot air with the same manifold rail possible through the use of blanking plugs
- Sub-base valves with working ports underneath for installation in control cabinets

Reliable

- Sturdy and durable metal components
  - Valves
  - Manifold rails
- Fast troubleshooting thanks to LED display
- Manual override:
  choose from non-detenting, detenting or covered

Easy to mount

- Easy mounting thanks to captive screws and seal
- Connection technology easy to change
- Inscription label holder for labelling

Valve terminal configurator

Download CAD data ➔ **www.festo.com**

A valve terminal configurator is available to help you select a suitable valve terminal VTUG. This makes it much easier to order the right product.

Valve terminals VTUG 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 VTUG

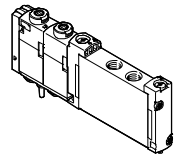
➔ Internet: vtug

Valve terminals VTUG with multi-pin plug and fieldbus connection

Feature

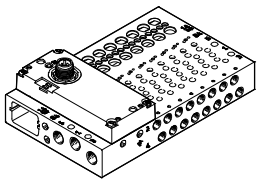
Sub-base and semi in-line valves for valve terminal VTUG

VUVG-S...1T1, semi in-line valve

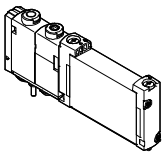


In the case of semi in-line valves, the supply ports (1, 3 and 5) are connected to the valve by means of pneumatic linking (e.g. sub-base). The working ports (2, 4) are on the valve.

Valve terminal VTUG with variable electrical connection

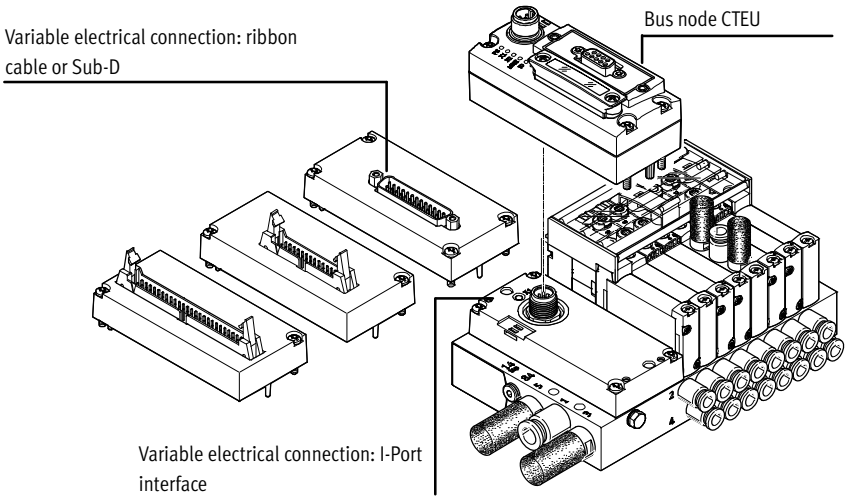


VUVG-B...1T1, sub-base valve

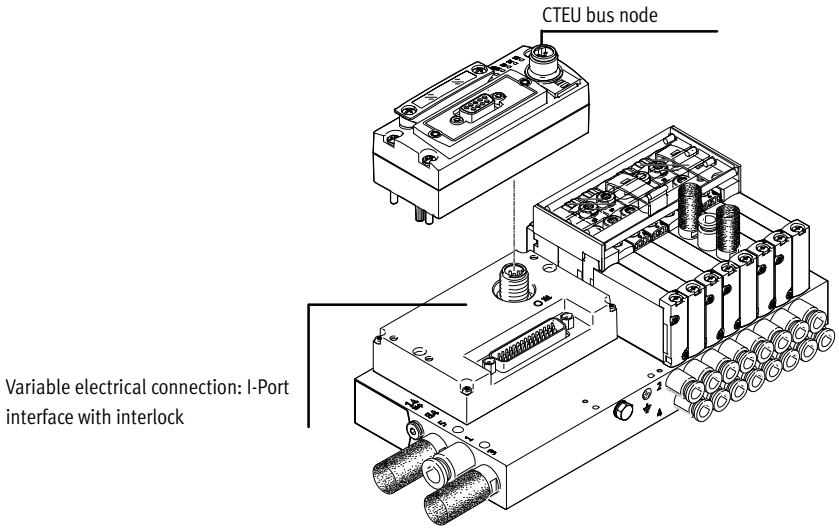


In the case of sub-base valves, the supply ports (1, 3 and 5) and the working ports (2, 4) are connected to the valve by means of pneumatic linking (e.g. sub-base).

Overview – Valve terminal with multi-pin plug and fieldbus connection



Overview – Valve terminal with interlock



Valve terminals VTUG with multi-pin plug and fieldbus connection

Feature

Equipment options

Valve functions

- 2x 3/2-way, 3/2-way, 5/2-way, 5/3-way valves
- Reversible piston spool valves, up to 24 valve positions

Electrical connection options

- IO-Link® mode for direct connection to a higher-order IO-Link® master
- Festo-specific I-Port interface for bus nodes (CTEU)
- Variable multi-pin plug connection using Sub-D or ribbon cable
- Festo-specific I-Port interface with interlock (for valves of size 10 mm)

Basic valves VUVG

Size

- 10
- 14
- 18

Variants

- Semi in-line valve
- Sub-base valve

Valve functions

3/2-way valve

- Single solenoid
- Normally open
- Normally closed

2x 3/2-way valve

- Single solenoid
- Normally open
- Normally closed
- 1x normally closed, 1x normally open
- Mechanical spring
- Pneumatic spring

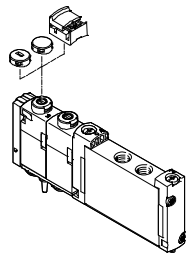
5/2-way valve

- Single solenoid
- Pneumatic/mechanical spring
- Mechanical spring
- Pneumatic spring
- Double solenoid valve

5/3-way valve

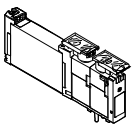
- Mid-position pressurised
- Mid-position exhausted
- Mid-position closed

Cover caps for manual override



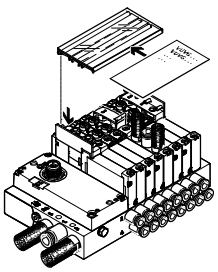
- Closed cover cap, covered manual override
- Slotted cover cap, non-detenting manual override
- Cover cap for detenting actuation without tools

Inscription label holder



Inscription label holder ASLR-D-L1 for identifying the valves and as a cover for the manual override.

Inscription label holder



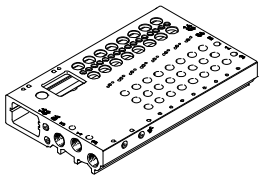
Inscription label holder ASCF-H-L1-... for identifying the valves on the valve terminal VTUG.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features – Pneumatics

Manifold rail

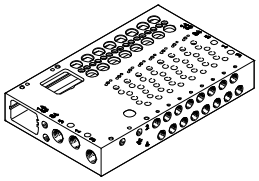
For semi in-line valves



The semi in-line valves are supplied with external pilot air. The pilot air is set via the manifold rail. The scope of delivery of the manifold rail includes a short and a long blanking plug for setting the pilot air.

- For semi in-line valves M5, M7 (size 10 mm), G1/8 (size 14 mm) and G1/4 (size 18 mm)
- For 2x 3/2-way, 5/2-way and 5/3-way valves
- 4 to 24 valve positions with electrical interlinking

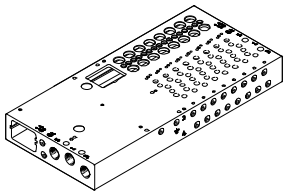
For sub-base valves



The sub-base valves are supplied with external pilot air. The pilot air is set via the manifold rail. The scope of delivery of the manifold rail includes a short and a long blanking plug for setting the pilot air.

- For sub-base valves M5/M7 (size 10 mm), G1/8 (size 14 mm) and G1/4 (size 18 mm)
- For 2x 3/2-way, 3/2-way, 5/2-way and 5/3-way valves
- 4 to 24 valve positions with electrical interlinking

Long version

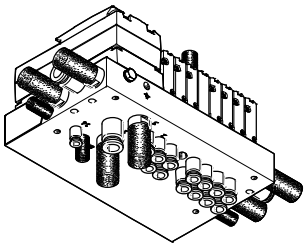


Versions:

- I-Port interface with lateral outlet direction: for semi in-line valves and sub-base valves M5/M7 (size 10 mm), G1/8 (size 14 mm) and G1/4 (size 18 mm)

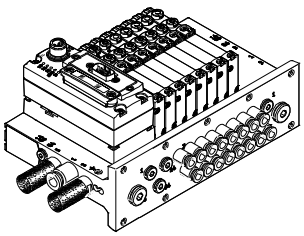
- Interlock:
  For sub-base and semi in-line valves M5/M7 (size 10 mm)

For control cabinet installation, outlet direction underneath (U)



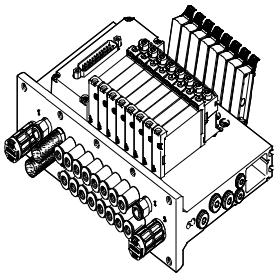
For sub-base valves M7 (size 10 mm), G1/8 (size 14 mm) and G1/4 (size 18 mm).

For control cabinet installation, outlet direction front (FD)

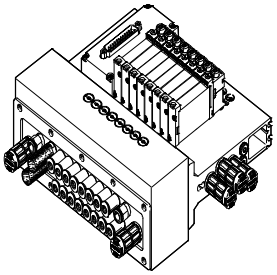


For sub-base valves M7 (size 10 mm) and G1/8 (size 14 mm).

For control cabinet installation with shut-off function (hot swap)



Shut-off function for duct 1, for sub-base valves M7 (size 10 mm) and G1/8 (size 14 mm).



Shut-off function for duct 2 and 4, for sub-base valves M7 (size 10 mm) and G1/8 (size 14 mm).

Note

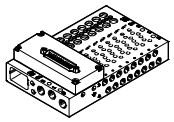
Pressurisation and exhaust at both ends is recommended for an optimised flow rate in cases where multiple valves switch simultaneously.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Feature

Electrical connection

Multi-pin plug connection

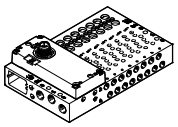


The signals are transmitted from the controller to the valve terminal via a pre-assembled or self-assembled multi-wire cable to the multi-pin plug connection,

This substantially reduces installation time compared to individually connected valves. The valve terminal can be equipped with max. 48 solenoid coils.

Versions:
- Sub-D connection
- Ribbon cable

I-Port interface

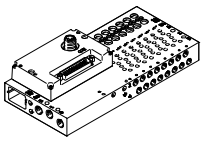


Festo-specific interface as a basis for bus nodes (CTEU) or in IO-Link mode for direct connection to a higher-level IO-Link master.

Communication and power supply take place via a common M12 interface.

Connection options:
- As I-Port interface for bus nodes (CTEU)
- In IO-Link mode for direct connection to an IO-Link master

I-Port interface with interlock



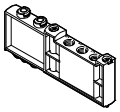
The interlock function enables the first 16 solenoid coils to be individually supplied externally.

The external supply guarantees safety-related release of these valves.

- Note

The VTUG variant with multi-pin plug and fieldbus connection offers the additional option of individual electrical actuation of the valves (see ➔ page 143).

Supply plate

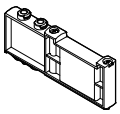


For additional air supply and exhaust via a valve position

- Note

The supply plate VABF-L1-14-P3A4-G18-T1 can only be used with G fittings. R fittings are not permissible.

Blanking plate for unused valve position



Vacant position cover

Separator for pressure zones

For creating multiple pressure zones in a valve terminal

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features – Pneumatics

Creating pressure zones and separating exhaust air

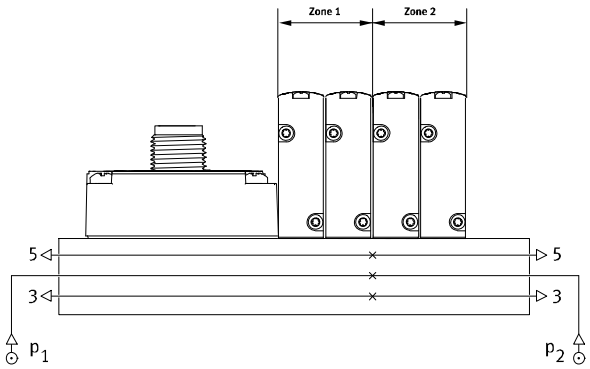
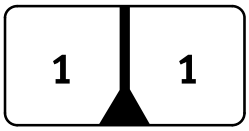
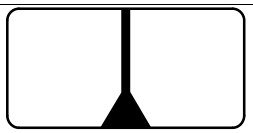
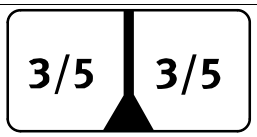
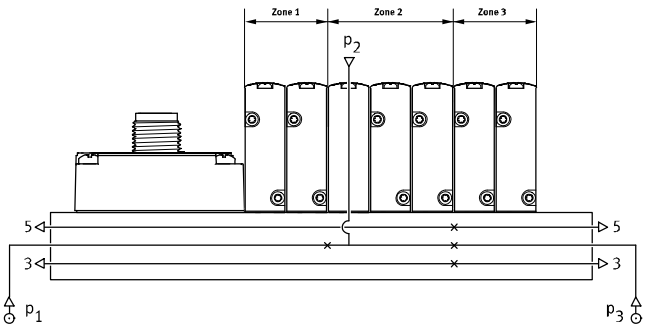
Compressed air is supplied and exhausted via the manifold rail and via supply plates.
The position of the supply plates and duct separations can be freely selected with the VTUG.

A pressure zone is created by separating the internal supply ducts using a separator.

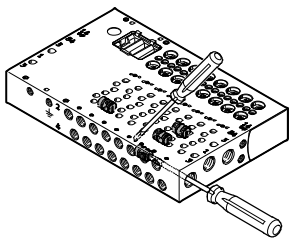
Pressure zone separation can be used for the following ducts:
- Duct 1
- Duct 3
- Duct 5

Note
- Use a separator if the exhaust air pressures are high
- Use at least one supply plate/ supply for each pressure zone
- Pressure zone separation is not possible in duct 12/14 (pilot air supply)

Duct separation

	Description
	The pressure zones can be freely configured with the VTUG. The following duct separations are possible: Duct 1 closed  Duct 1, 3, 5 closed  Duct 3, 5 closed 
	The number of pressure zones with the VTUG is limited by the number of valve positions on the manifold rail. Note that each supply plate occupies one valve position.

Separator VABD



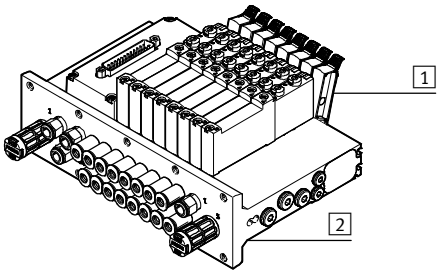
1 Separator VABD

Note

With the VTUG, several pressure zones can be created by fitting separators (VABD). The separators are inserted in the manifold rail using a slotted screwdriver.

Shut-off function (hot swap)

for duct 1

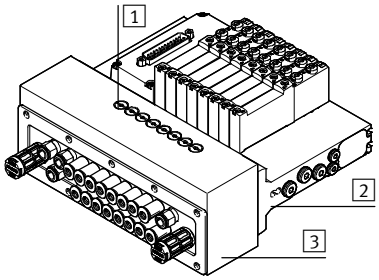


1 Actuating lever
2 Manifold rail wit shut-off plate

The shut-off plate is located below the manifold block. By actuating the lever:
- Disconnection of the valve from the compressed air supply (duct 1)
- Venting of the pilot air supply on the valve side (duct 12 and 14)

Each actuating levers can be fixed and secured against unwanted actuation.

for duct 2 and 4



1 Stem
2 Manifold rail
3 Manifold block

Press in the stem with a pointed object or screwdriver and then turn the stem clockwise by 90° until the stop is reached:
- Connection from the valve to the ports 2 and 4 is blocked
- No exhaust of connected components on ports 2 and 4

Pilot air supply

Internal pilot air supply

Internal pilot air supply can be chosen with an operating pressure in the range 1.5 ... 8 bar, 2.5 ... 8 bar or 3 ... 8 bar (depending on the valve used).

The pilot air supply is branched from duct 1 (compressed air supply) using an internal connection.

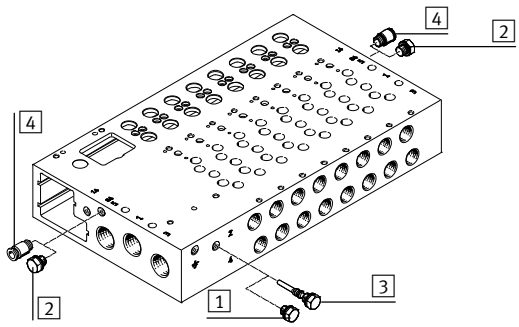
External pilot air supply

External pilot air supply is required for vacuum operation and operating pressures above 8 bar.
The port for external pilot air supply (port 12/14) is located on the manifold rail.

Pilot exhaust air

The pilot air is exhausted via duct 82/84 of the manifold rail.

Pilot air supply



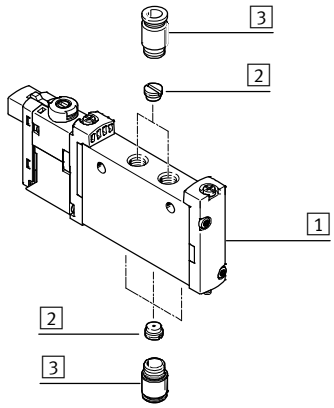
1 Blanking plug, short, with internal pilot air
2 Blanking plug for duct 12/14 with internal pilot air
3 Blanking plug, long, with external pilot air
4 Push-in fitting in duct 12/14 with external pilot air

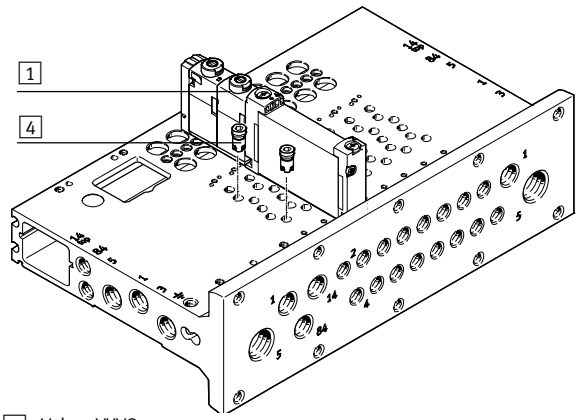
The manifold rails have an internal conduit between duct 12/14 and duct 1.
Internal or external pilot air supply is selected by inserting a blanking plug into this conduit.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features – Pneumatics

Exhaust functions





1 Valves VUVG
2 Flow restrictor for thread M5
3 Fitting
4 Fixed flow restrictor, self-tapping/check valve

Flow restrictor for thread M5

Semi in-line valve, individual electrical connection: flow control valve can be fitted in port 1, 3, 5 and/or in port 2, 4.

Sub-base valve, individual electrical connection: flow control valve can be fitted in port 2, 4.

Fixed flow restrictor, self-tapping

The fixed restrictor can be used to permanently set the exhaust flow rate in ducts 3 and 5.

The fixed restrictors are screwed into ducts 3 and 5 in the manifold rail.

Please see the relevant assembly instructions:
➔ www.festo.com/sp

Check valve

Check valves block the flow towards the valves if back pressure develops in ducts 3 and 5 in the case of a high exhaust capacity and thus prevents actuators from switching unexpectedly.
The check valves are screwed into ducts 3 and 5 in the manifold rail.
Please see the relevant assembly instructions:
➔ www.festo.com/sp

Note

- It is not possible to use a check valve and a fixed restrictor (in the same duct) at the same time.
- When screwing in again, use the threads already present.

Operation with different pressures

Vacuum operation

Points to note with 3/2-way valves with pneumatic spring return:
The 3/2-way valves are available in a design with two valves in one valve body and with pneumatic spring return. With these valves, the force for the return movement is supplied through port 1.

Note

Pressure must be present at port 1.

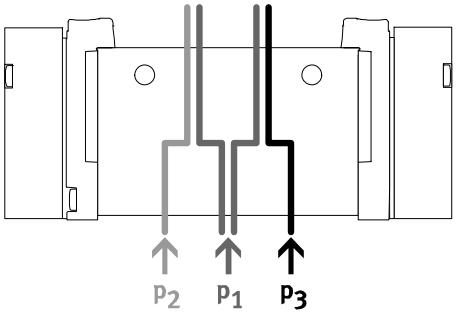
Vacuum operation is only possible at port 3 and 5, not at port 1.

With external pilot air supply, vacuum can be connected at port 1, 3, 5 of the 5/2-way and 5/3-way valves.

Reverse operation

The 3/2-way valves with pneumatic spring are not suitable for reverse operation, since at least the minimum pilot pressure must be present in duct 1.

Pressure deflector (internal pilot air)



- Two different pressures are required.
- Different pressures can be connected at duct 1, 3 and 5.

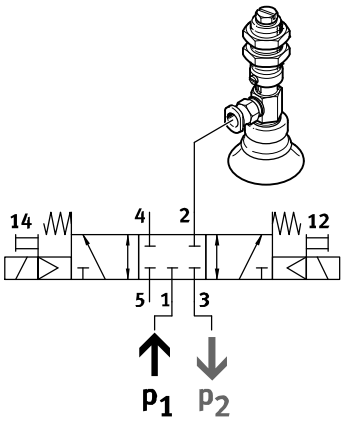
Note

- With internal pilot air, adhere to the minimum pilot pressure in duct 1

Benefits
Any pressure or vacuum can be connected at duct 3 and 5 both with external and internal pilot air

- With 2x 3/2-way valves without spring return, adhere to minimum pilot pressure in duct 1

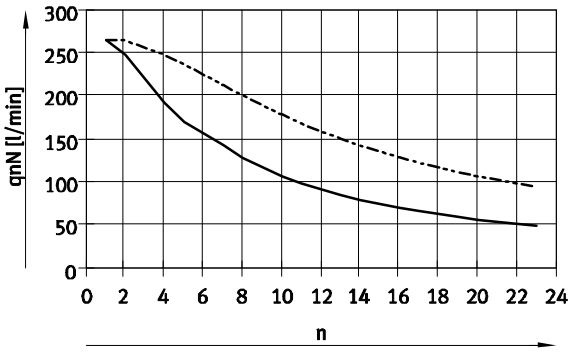
Vacuum, ejector pulse and normal position



Vacuum, ejector pulse and normal position with internal pilot air can be achieved by connecting vacuum at duct 3 and pressure for the ejector pulse at duct 1.

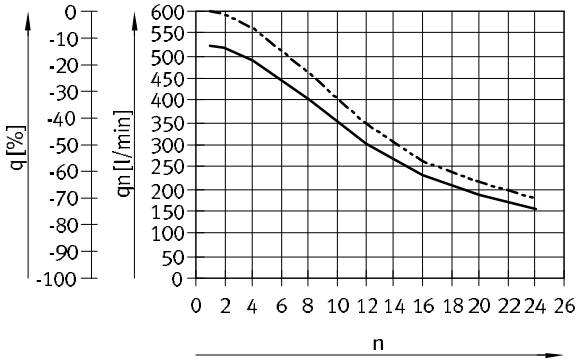
Standard nominal flow rate qnN as a function of the number of switched valves n

Size 10 mm, 5/2-way valves



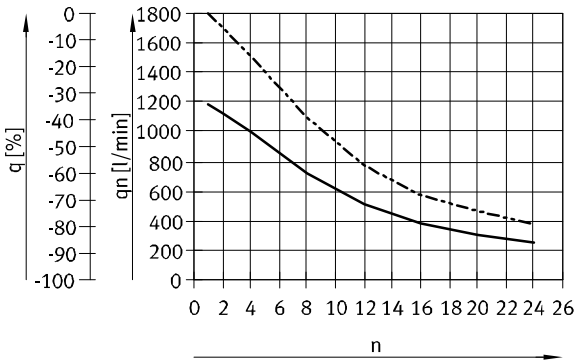
Supply at one end
Supply at both ends

Size 14 mm



Standard flow rate qn per valve
Flow rate loss q

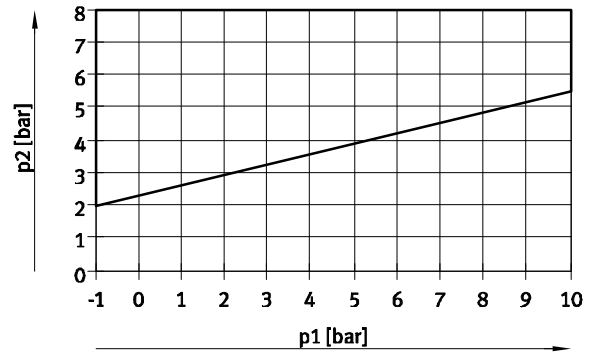
Size 18 mm



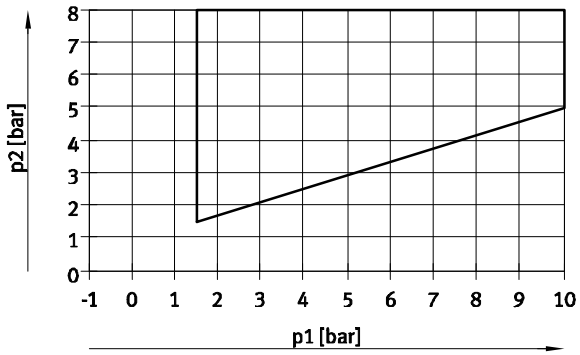
Standard flow rate qn per valve
Flow rate loss q

Pilot pressure p2 as a function of operating pressure p1

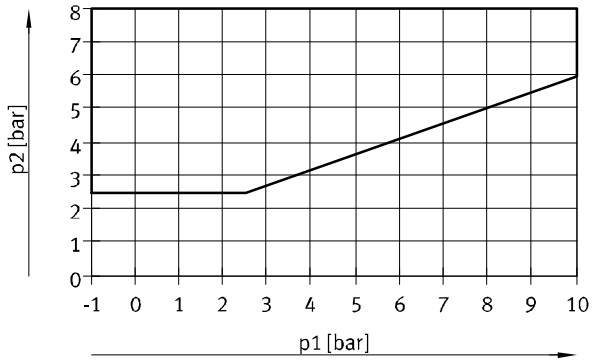
2x 3/2-way valve, reset method: mechanical spring



2x 3/2-way valve, reset method: pneumatic spring



3/2-way single solenoid valve and 5/2-way single solenoid valve



Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features – Assembly

Valve terminal assembly

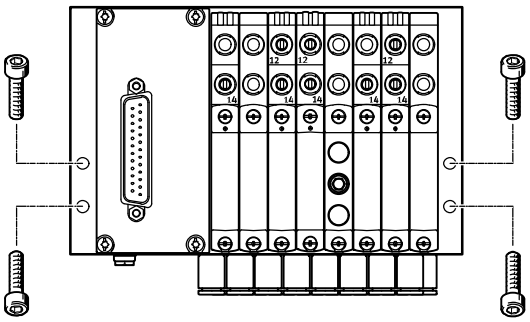
Sturdy terminal assembly thanks to:

- Four through-holes for wall mounting
- H-rail mounting

Note

Use the M5 thread provided on the manifold block for earthing the valve terminal.

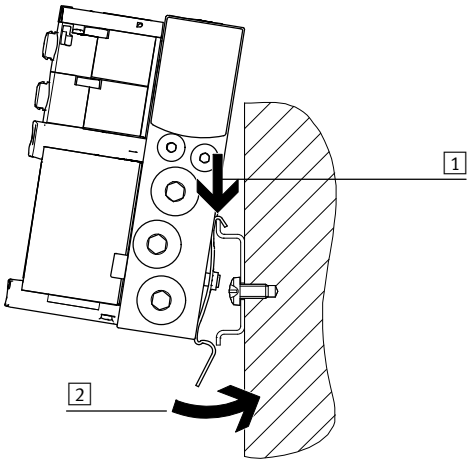
Wall mounting



Screw the valve terminal VTUG onto the mounting surface using four M4 screws.

The mounting holes are on the left and right side of the manifold rail.

H-rail mounting



Attach the valve terminal VTUG to the H-rail (see arrow 1).

Swivel the valve terminal onto the H-rail and secure in place with the clamping component (see arrow 2).

Attach the manifold rails to an H-rail to EN 60715-TH35 using the H-rail mounting kit VAME-T-M4.
Use the following screws (to DIN 912) for mounting:

- Size 10: M4x30
- Size 14: M4x40
- Size 18: M5x50

Note

Permissible use of the H-rail:

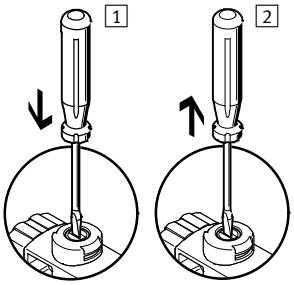
- Manifold rail with outlet on the side or on top.
- H-rail exclusively for horizontal mounting.
- Vibration/shock loads are not permissible for this type of mounting.

Size 14:

- Use H-rail TH35-7.5 for valve terminals with a maximum of 8 valve positions.
- Use H-rail TH35-15 for mounting in accordance with the standard and for more than 8 valve positions.

Manual override (MO)

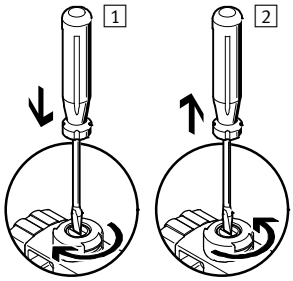
MO with automatic return (non-detenting)



1 Press in the stem of the MO with a pointed object or screwdriver. Pilot valve switches and actuates the main valve.

2 Remove the pointed object or screwdriver.
The spring force pushes the stem of the MO back.
The pilot valve returns to its initial position as does the single solenoid main valve (not the case with double solenoid valve code J).

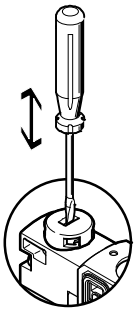
MO with detent (locking)



1 Press in the stem of the MO with a pointed object or screwdriver until the valve switches and then turn the stem clockwise by 90° until the stop is reached.
Valve remains switched.

2 Turn the stem anti-clockwise by 90° until the stop is reached and then remove the pointed object or screwdriver. The spring force pushes the stem of the MO back. The valve returns to its initial position (not the case with double solenoid valve code J).

MO non-detenting – with coded cover cap

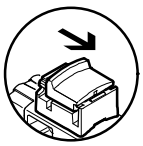


MO is actuated by pushing it with a pointed object or screwdriver and reset by spring force (detenting position prevented by coded cover cap).

MO detenting without tools – assembly

Clip MO with lock onto the pilot valve.
The MO cap can then be operated (detenting) without tools.

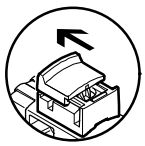
MO detenting without tools – actuation



When sliding the cap for the MO in the direction of the arrow:

- The cap locks into the end position.
- The pilot valve switches and actuates the main valve.

MO detenting without tools – actuation

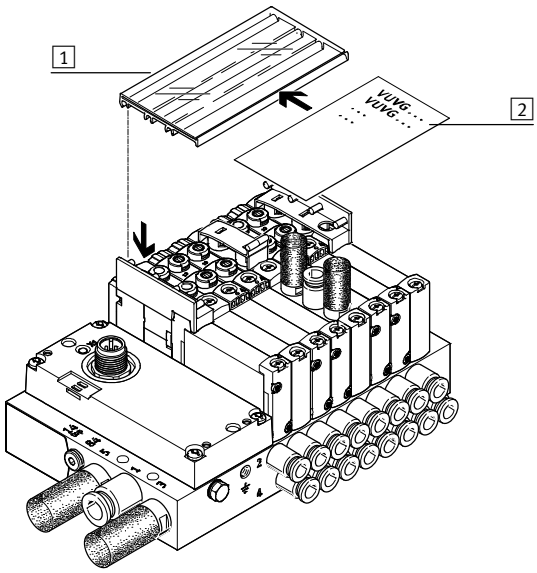


When sliding the cap for the MO in the direction of the arrow:

- The cap locks into the end position.
- The spring force pushes the stem of the MO back.
- The pilot valve returns to its initial position as does the single solenoid main valve (not the case with double solenoid valve code J).

Inscription system

Inscription label holder



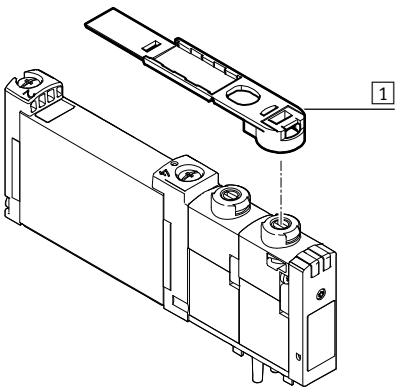
1 Inscription label holder ASCF-H-L1 (code TT)
2 Inscription label

Mount the inscription label holder to label the valves. Open the inscription label holder to insert the inscription label and actuate the manual override.
The inscription label holders are available in different sizes depending on the number of valve positions.

- Note

Do not engage the manual override before mounting the inscription label holder.
When mounted, the retainer for the inscription label holder covers the manual override of the valve beneath it.
The only way of actuating the manual override is in a non-detenting mode.

Inscription label holder



1 Inscription label holder ASLR-D-L1 (code TV)

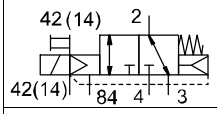
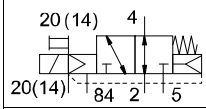
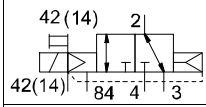
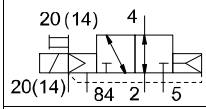
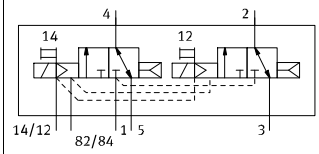
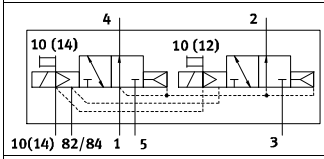
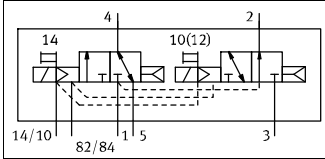
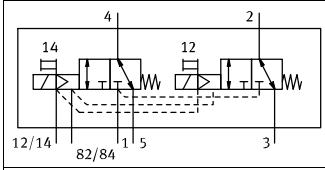
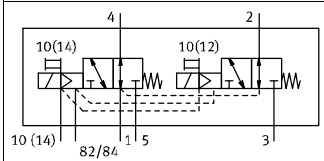
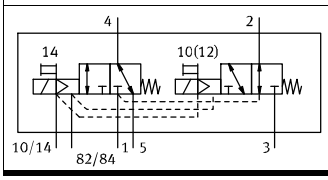
Use inscription label holder ASLR-D-L1 (code TV) to label individual valves.
The inscription label holder is placed directly on the manual override.

- Note

Do not engage the manual override before mounting the inscription label holder.
After the retainers are in place, the only way of actuating the manual override is in a non-detenting mode.

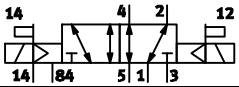
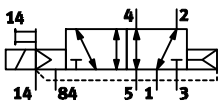
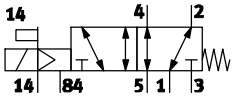
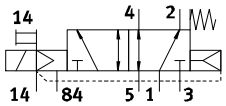
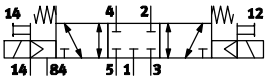
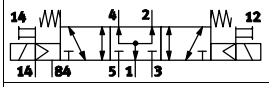
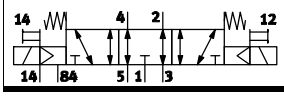
Valve terminals VTUG with multi-pin plug and fieldbus connection

Overview of valve functions

Valve	Valve code	Description	Size		
			M5/M7	G1/8	G1/4
3/2-way valve, pneumatic/mechanical spring					
	M32C-R	Normally closed	■	–	–
	M32U-R	Normally open	■	–	–
3/2-way valve, pneumatic spring					
	M32C-A	Normally closed	–	■	–
	M32U-A	Normally open	–	■	–
2x 3/2-way valve, pneumatic spring					
	T32C-A	Normally closed	■	■	■
	T32U-A	Normally open	■	■	■
	T32H-A	1x normally open, 1x normally closed	■	■	■
2x 3/2-way valve, mechanical spring					
	T32C-M	Normally closed	■	■	■
	T32U-M	Normally open	■	■	■
	T32H-M	1x normally open, 1x normally closed	■	■	■

Valve terminals VTUG with multi-pin plug and fieldbus connection

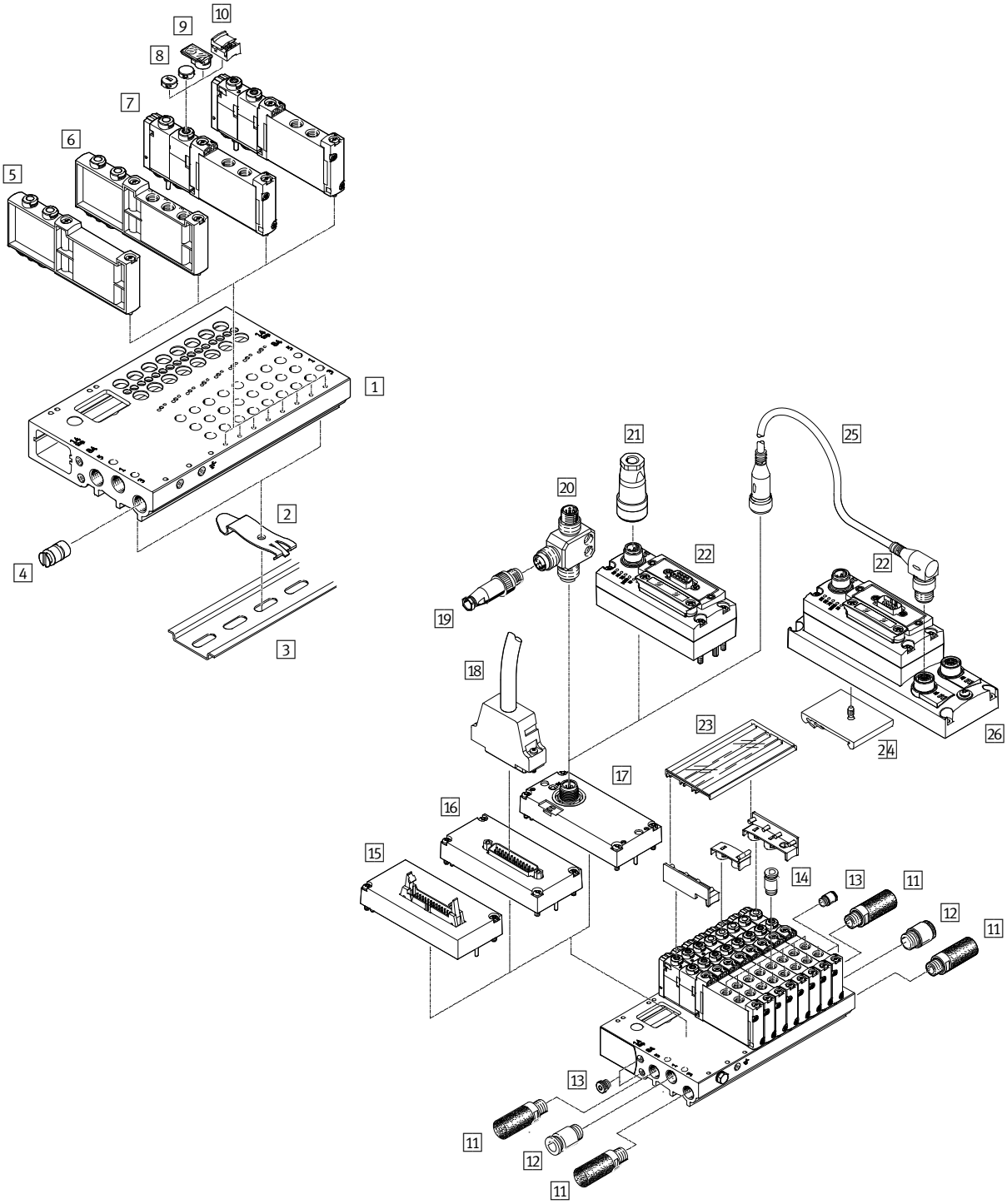
Overview of valve functions

Valve	Valve code	Description	Size		
			M5/M7	G1/8	G1/4
5/2-way double solenoid valve					
	B52	External pilot air supply	■	■	■
5/2-way valve, single solenoid					
	M52-A	Pneumatic spring	–	■	–
	M52-M	Mechanical spring	■	■	■
	M52-R	Pneumatic/mechanical spring	■	–	■
5/3-way valve					
	P53C	Mid-position closed	■	■	■
	P53U	Mid-position pressurised	■	■	■
	P53E	Mid-position exhausted	■	■	■

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Semi in-line valves

Valve terminal overview - Multi-pin plug and I-Port interface



Valve terminals VTUG with multi-pin plug and fieldbus connection

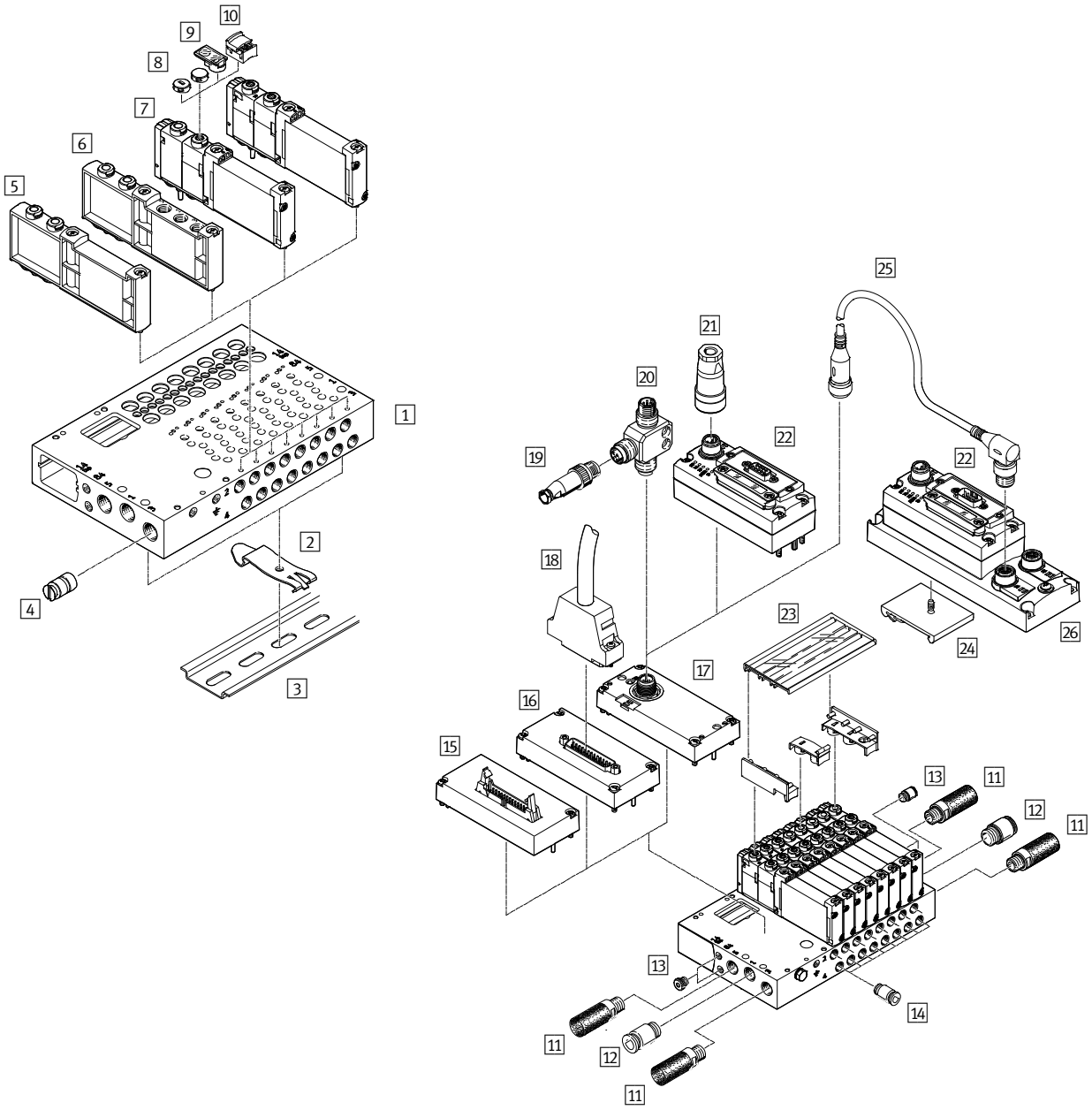
Peripherals overview example – Semi in-line valves

Accessories				
		Type	Description	➔ Page/Internet
1	Manifold rail	VABM-L1-...	For 4 to 10, 12, 16, 20 and 24 valve positions	171
2	H-rail mounting	VAME-T-M4	2 pieces for fitting the valve terminal on an H-rail	215
3	H-rail	NRH-35-2000	For mounting the valve terminal	215
4	Separator	VABD-...	For creating pressure zones	213
5	Cover plate	VABB-L1-...	For covering an unused valve position	213
6	Supply plate	VABF-L1-...	For air supply at port 1 and ports 3 and 5	213
7	Solenoid valve	VUVG-...	Semi in-line valve	145, 150, 154
8	Cover cap	VMPA-HB...-B	For manual override	213
9	Inscription label holder	ASLR-D-L1	For inscription label and covering the mounting screw/manual override	215
10	Cover	VAMC-...	For manual override	213
11	Silencer	U-...	For ports 3 and 5	213
12	Push-in fitting	QS-...	For air supply, port 1	212
13	Blanking plug	B-...	For internal/external pilot air	213
14	Push-in fitting	QS-...	For ports 2 and 4	212
15	Electrical interfaces	VAEM-L1-S-M3-...	Ribbon cable	202
16	Electrical interfaces	VAEM-L1-S-M1-...	Sub-D	202
17	Electrical interfaces	VAEM-L1-S-...-PT	I-Port interface/IO-Link	205
18	Connecting cable	NEBV-...	Sub-D cable	202
19	Plugs	SEA-M12-5GS-PG7	Straight, for T-adapter FB-TA	205
20	T adapter	FB-TA-M12-5POL	For IO-Link and load voltage supply	205
21	Power supply socket	NTSD-.../FBSD-...	Power supply for CTEU bus nodes	211
22	CTEU	CTEU-...	Bus nodes	211
23	Inscription label holder	ASCF-H-L1	For identifying valves	215
24	H-rail mounting	CAFM-F1-H	For electrical connection box CAPC	207
25	Connecting cable	NEBU-...	–	nebu
26	Connecting plate	CAPC-F1-E-M12	For connecting a second device with I-Port interface	207

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Sub-base valves

Valve terminal overview – Multi-pin plug and I-Port interface



Valve terminals VTUG with multi-pin plug and fieldbus connection

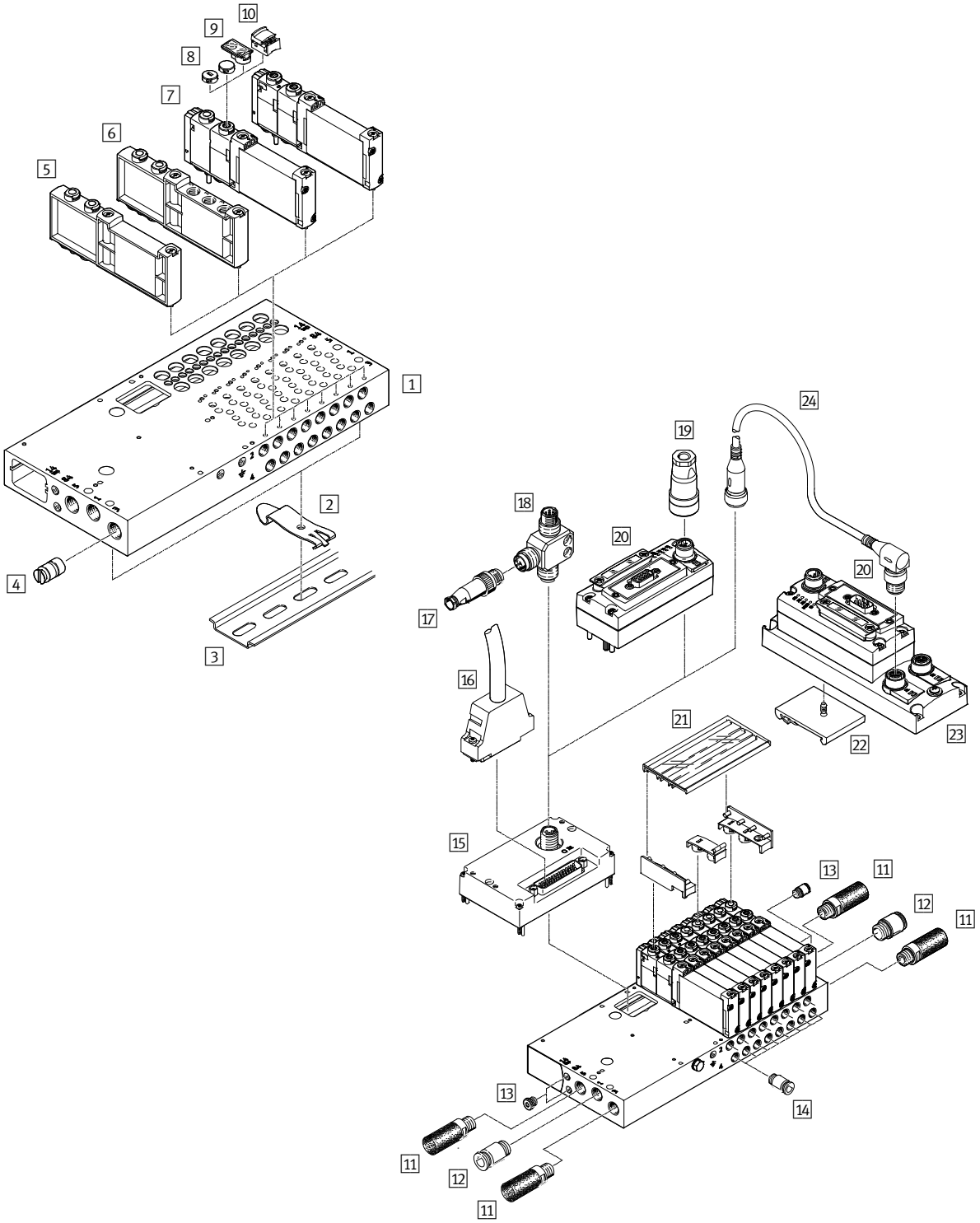
Peripherals overview example – Sub-base valves

Accessories				
		Type	Description	➔ Page/Internet
1	Manifold rail	VABM-L1-...	For 4 to 10, 12, 16, 20 and 24 valve positions	171
2	H-rail mounting	VAME-T-M4	2 pieces for fitting the valve terminal on an H-rail	215
3	H-rail	NRH-35-2000	For mounting the valve terminal	215
4	Separator	VABD-...	For creating pressure zones	213
5	Cover plate	VABB-L1-...	For covering an unused valve position	213
6	Supply plate	VABF-L1-...	For air supply at port 1 and ports 3 and 5	213
7	Solenoid valve	VUVG- ...	Sub-base valve	158, 163, 168
8	Cover cap	VMPA-HB...-B	For manual override	213
9	Inscription label holder	ASLR-D-L1	For inscription label and covering the mounting screw/manual override	215
10	Cover	VAMC...	For manual override	213
11	Silencer	U...	For ports 3 and 5	213
12	Push-in fitting	QS...	For air supply, port 1	212
13	Blanking plug	B-...	For internal/external pilot air	213
14	Push-in fitting	QS...	For ports 2 and 4	213
15	Electrical interfaces	VAEM-L1-S-M3-...	Ribbon cable	202
16	Electrical interfaces	VAEM-L1-S-M1-...	Sub-D	202
17	Electrical interfaces	VAEM-L1-S-...-PT	I-Port interface/IO-Link	205
18	Connecting cable	NEBV-...	Sub-D cable	202
19	Plugs	SEA-M12-5GS-PG7	Straight, for T-adapter FB-TA	205
20	T adapter	FB-TA-M12-5POL	For IO-Link and load voltage supply	205
21	Power supply socket	FBSD-.../NTSD-...	Power supply for CTEU bus nodes	211
22	CTEU	CTEU-...	Bus nodes	211
23	Inscription label holder	ASCF-H-L1	For identifying valves	215
24	H-rail mounting	CAFM-F1-H	For electrical connection box CAPC	207
25	Connecting cable	NEBU-...	–	nebu
26	Connecting plate	CAPC-F1-E-M12	For connecting a second device with I-Port interface	207

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Sub-base valves

Valve terminal overview – I-Port interface with interlock



Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Sub-base valves

Accessories				
		Type	Description	➔ Page/Internet
1	Manifold rail	VABM-L1-...	For 4 to 10, 12, 16, 20 and 24 valve positions	171
2	H-rail mounting	VAME-T-M4	2 pieces for fitting the valve terminal on an H-rail	215
3	H-rail	NRH-35-2000	For mounting the valve terminal	215
4	Separator	VABD-...	For creating pressure zones	213
5	Cover plate	VABB-L1-...	For covering an unused valve position	213
6	Supply plate	VABF-L1-...	For air supply at port 1 and ports 3 and 5	213
7	Solenoid valve	VUVG-...	–	158, 163, 168
8	Cover cap	VMPA-HB...-B	For manual override	213
9	Inscription label holder	ASLR-D-L1	For inscription label and covering the mounting screw/manual override	215
10	Cover	VAMC-...	For manual override	213
11	Silencer	U-...	For ports 3 and 5	213
12	Push-in fitting	QS-...	For air supply, port 1	213
13	Blanking plug	B-...	For internal/external pilot air	213
14	Push-in fitting	QS-...	For ports 2 and 4	212
15	Electrical interfaces	VAEM-L1-S-24-...	I-Port interface with interlock	208
16	Connecting cable	NEBV-...	Sub-D cable	202
17	Plugs	SEA-M12-5GS-PG7	Straight, for T-adapter FB-TA	205
18	T adapter	FB-TA-M12-5POL	For IO-Link and load voltage supply	205
19	Power supply socket	NTSD-.../FBSD-...	Power supply for CTEU bus nodes	211
20	CTEU	CTEU-...	Bus nodes	211
21	Inscription label holder	ASCF-H-L1	For identifying valves	215
22	H-rail mounting	CAFM-F1-H	For electrical connection box CAPC	207
23	Connecting plate	CAPC-F1-E-M12	For connecting a second device with I-Port interface	207
24	Connecting cable	NEBU-...	–	nebu

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Sub-base valves

Valve terminal with multi-pin plug/fieldbus connection and individually electrically actuated valves

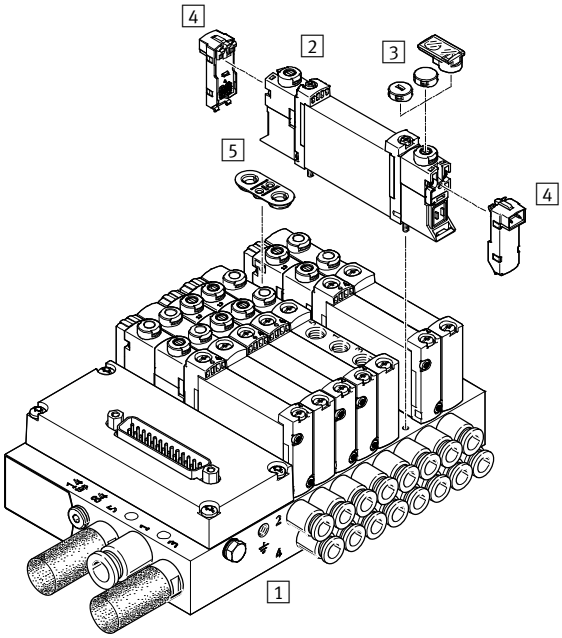
In applications with specific emergency off requirements, it may be necessary to switch one or more valves separately from the valve terminal controller.

Valves VUVG (see ➔ page 11) with an individual electrical connection are therefore on the valve terminal.

Valves with an individual electrical connection require a special seal when mounted on a valve terminal.

They are therefore ordered/fitted as follows:

- together with the valve terminal using the valve terminal configurator
- individually/subsequently as a substitute for a blanking plate in a vacant position



Accessories

		Type	Description	➔ Page/Internet
1	Manifold rail	VABM-L1-10	For 2 to 10, 12 and 16 valve positions	171
2	Solenoid valve	VUVG	Sub-base valve	83
3	Cover cap	VMPA	For manual override	113
4	Connecting plate	VAVE	For individual connection	112
5	Seal	–	Included in the scope of delivery of the blanking plate for a vacant position	213

Valve terminals VTUG with multi-pin plug and fieldbus connection

Type codes Semi in-line valves M5/M7

VUVG	–	S	10	–		–		–	Z		–		–	1	T1	L

Directional control valve type

Semi in-line valve	**S**

Size

10 mm	**10**

Valve function

5/2-way valve, bistable	**B52**
5/2-way valve, single solenoid	**M52**
5/3-way valve, mid-position closed	**P53C**
5/3-way valve, mid-position exhausted	**P53E**
5/3-way valve, mid-position pressurised	**P53U**
2x 3/2-way valve, normally closed	**T32C**
2x 3/2-way valve, 1x normally open, 1x closed	**T32H**
2x 3/2-way valve, normally open	**T32U**

Reset method

Pneumatic spring with T32	**A**
Mechanical spring with T32 and M52	**M**
Pneumatic/mechanical spring with M52	**R**
With B52 and P53	**–**

Advertisement

L	LED

Electrical connection

T1	Plug-in

Nominal operating voltage

1	24 V DC

Pneumatic connection

M5	M5 thread
M7	M7 thread
Q3	Push-in connector 3 mm
Q4	Push-in connector 4 mm
Q4H	Push-in connector 4 mm, M7
Q6	Push-in connector 6 mm
Q6H	Push-in connector 6 mm, M7
T14	Push-in connector 1/4"
T14H	Push-in connector 1/4", M7
T18	Push-in connector 1/8"
T316	Push-in connector 3/16"
T316H	Push-in connector 3/16", M7
T532	Push-in connector 5/32"

Manual override

H	Non-detenting
S	Covered
T	Non-detenting, detenting
Y	Detenting, without accessories

Pilot air

Z	External

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves M5/M7

Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, bistable
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
130 ... 330 l/min

Voltage
24 V DC

General technical data														
Valve function		T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position		C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position		Single pilot							Double solenoid	One position			
Reset method: pneumatic spring		Yes			None			Yes[5]	–	None	–		
Reset method: mechanical spring		None			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1		None			With external pilot air								
Design		Piston spool											
Sealing principle		Soft											
Type of control		Electric											
Type of control		Pilot											
Pilot air supply		External											
Exhaust function		With flow control option											
Manual override		Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting		On manifold rail											
Mounting position		Optional											
Signal status display		LED											
Flow rate on manifold rail M5	[l/min]	150			130			230			210		
Flow rate on manifold rail M7	[l/min]	160			140			330		290	280		
Size	[mm]	10											
Ports	1, 3, 5, 12/14, 82/84	On manifold rail											
	2, 4	M5 (VUVG-S10-...-M5)											
		M7 (VUVG-S10-...-M7)											
Product weight	[g]	59						53	60	53	58		
Approval certificate		c UL us - Recognized(OL)											
		c CSA us (OL)											
		RCM mark											
CE marking (see declaration of conformity)[6]		To EU EMC Directive											
Corrosion resistance class CRC[7]		2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
6) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
7) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves M5/M7

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[3]	M52-R[2]	B52	M52-M[3]	P53
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]					
Operating pressure	Internal pilot air supply	[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
	External pilot air supply	[bar]	1.5 ... 10	–0.9 ... 10			–0.9 ... 8	–0.9 ... 10
Pilot pressure[4]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
Ambient temperature		[°C]	–5 ... +60					
Temperature of medium		[°C]	–5 ... +60					

1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data			
Electrical connection			Via sub-base
Operating voltage		[DC V]	24 ±10%
Power consumption per valve solenoid		[W]	1/0.4 (after 25 ms)
Duty cycle ED		[%]	100
Max. switching frequency		[Hz]	3
Degree of protection to EN 60529	Individual valve		IP67/IP65
	Valve terminal		IP40, IP67/IP65

Safety data		
Max. positive test pulse with 0 signal	[µs]	1600
Max. negative test pulse with 1 signal	[µs]	3000
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6

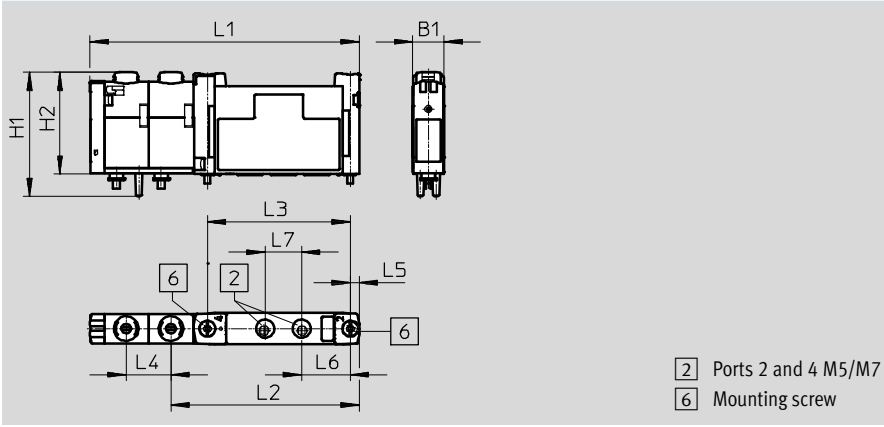
Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

Valve switching times							
Valve function		T32-A[1]	T32-M[3]	M52-R[2]	B52	M52-M[3]	P53
Switching time on	[ms]	8	10	9	–	12	12
Switching time off	[ms]	20	20	21	–	30	38
Changeover time	[ms]	–	–	–	9	–	16

1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring

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

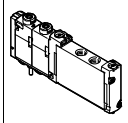
Semi in-line valves M5/M7



2 Ports 2 and 4 M5/M7
6 Mounting screw

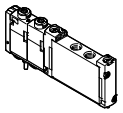
Type	B1	H1	H2	L1	L2	L3	L4	L5	L6	L7
VUVG-S10-...-M5-1T1L	10.3	40.7	33.6	88.6	62	47	14.7	3	16	12
VUVG-S10-...-M7-1T1L										

Ordering data

	Description		Part no.	Type
Semi in-line valve M5				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**573386**	**VUVG-S10-T32C-AZT-M5-1T1L**
		Normally open, reset method: pneumatic spring	**573387**	**VUVG-S10-T32U-AZT-M5-1T1L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**573388**	**VUVG-S10-T32H-AZT-M5-1T1L**
		Normally closed, reset method: mechanical spring	**573389**	**VUVG-S10-T32C-MZT-M5-1T1L**
		Normally open, reset method: mechanical spring	**573390**	**VUVG-S10-T32U-MZT-M5-1T1L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**573391**	**VUVG-S10-T32H-MZT-M5-1T1L**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: mechanical spring	**573393**	**VUVG-S10-M52-MZT-M5-1T1L**
		Reset method: pneumatic/mechanical spring	**573392**	**VUVG-S10-M52-RZT-M5-1T1L**
	5/2-way valve, double solenoid			
	External pilot air supply		**573394**	**VUVG-S10-B52-ZT-M5-1T1L**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**573395**	**VUVG-S10-P53C-ZT-M5-1T1L**
		Mid-position pressurized, mechanical spring reset method	**573397**	**VUVG-S10-P53U-ZT-M5-1T1L**
		Mid-position exhausted, mechanical spring reset method	**573396**	**VUVG-S10-P53E-ZT-M5-1T1L**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Ordering data

Ordering data				
	Description		Part no.	Type
Semi in-line valve M7				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**573398**	**VUVG-S10-T32C-AZT-M7-1T1L**
		Normally open, reset method: pneumatic spring	**573399**	**VUVG-S10-T32U-AZT-M7-1T1L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**573400**	**VUVG-S10-T32H-AZT-M7-1T1L**
		Normally closed, reset method: mechanical spring	**573401**	**VUVG-S10-T32C-MZT-M7-1T1L**
		Normally open, reset method: mechanical spring	**573402**	**VUVG-S10-T32U-MZT-M7-1T1L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**573403**	**VUVG-S10-T32H-MZT-M7-1T1L**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: mechanical spring	**573405**	**VUVG-S10-M52-MZT-M7-1T1L**
		Reset method: pneumatic/mechanical spring	**573404**	**VUVG-S10-M52-RZT-M7-1T1L**
	5/2-way valve, double solenoid			
	External pilot air supply		**573406**	**VUVG-S10-B52-ZT-M7-1T1L**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**573407**	**VUVG-S10-P53C-ZT-M7-1T1L**
		Mid-position pressurized, mechanical spring reset method	**573409**	**VUVG-S10-P53U-ZT-M7-1T1L**
		Mid-position exhausted, mechanical spring reset method	**573408**	**VUVG-S10-P53E-ZT-M7-1T1L**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Type codes - Semi in-line valves G1/8

VUVG	–	S	14	–		–		Z		–		–	1	T1	L

Directional control valve type

Semi in-line valves	S

Size

14 mm	14

Valve function

5/2-way valve, bistable	B52
5/2-way valve, single solenoid	M52
5/3-way valve, mid-position closed	P53C
5/3-way valve, mid-position exhausted	P53E
5/3-way valve, mid-position pressurised	P53U
2x 3/2-way valve, normally closed	T32C
2x 3/2-way valve, 1x normally open, 1x closed	T32H
2x 3/2-way valve, normally open	T32U

Reset method

A	Pneumatic spring with M52 and T32
M	Mechanical spring with M52 and T32
–	With B52 and P53

Pilot air

Z	External

Manual override

H	Non-detenting
S	Covered
T	Non-detenting, detenting
Y	Detenting, without accessories

Pneumatic connection

G18	G1/8 thread
Q4	Push-in connector 4 mm
Q6	Push-in connector 6 mm
Q8	Push-in connector 8 mm
T14	Push-in connector 1/4"
T516	Push-in connector 5/16"

Nominal operating voltage

1	24 V DC

Electrical connection

T1	Plug-in

Advertisement

L	LED

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves G1/8

Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, bistable
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 14 mm

Flow rate
520 ... 630 l/min

Voltage
24 V DC

General technical data													
Valve function		T32-A			T32-M			M52-A	B52	M52-M	P53		
Normal position		C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position		Single pilot							Double solenoid	One position			
Reset method: pneumatic spring		Yes			None			Yes	–	None	–		
Reset method: mechanical spring		None			Yes			None	–	Yes	Yes		
Vacuum operation at port 1		None			With external pilot air								
Design		Piston spool											
Sealing principle		Soft											
Type of control		Electric											
Type of control		Pilot											
Pilot air supply		External											
Exhaust function		With flow control option											
Manual override		Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting		On manifold rail											
Mounting position		Optional											
i		LED											
Flow rate on manifold rail G⅛	[l/min]	610			520			620	630	620	590		
Size	[mm]	14											
Ports	1, 3, 5, 12/14, 82/84	On manifold rail											
	2, 4	G1/8											
Product weight	[g]	102			100			91	98	89	95		
Approval certificate		c UL us - Recognized(OL)											
		c CSA us (OL)											
		RCM mark											
CE marking (see declaration of conformity)[5]		To EU EMC Directive											
Corrosion resistance class CRC[6]		2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
6) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves G1/8

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[2]	M52-A[1]	B52	M 52-M[2)]	P53
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]					
Operating pressure	Internal pilot air supply	[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
	External pilot air supply	[bar]	1.5 ... 10	–0.9 ... 10			–0.9 ... 8	–0.9 ... 10
Pilot pressure[3)]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
Ambient temperature		[°C]	–5 ... +60					
Temperature of medium		[°C]	–5 ... +60					

1) Pneumatic spring.
2) Mechanical spring.
3) Minimum pilot pressure 50% of operating pressure

Electrical data			
Electrical connection			Via sub-base
Operating voltage		[DC V]	24 ±10%
Power		[W]	1/0.4 (after 25 ms)
Duty cycle ED		[%]	100
Max. switching frequency		[Hz]	3
Degree of protection to EN 60529	Individual valve		IP67/IP65
	Valve terminal		IP40, IP67/IP65

Safety data		
Max. positive test pulse with 0 signal	[µs]	1600
Max. negative test pulse with 1 signal	[µs]	3000
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6

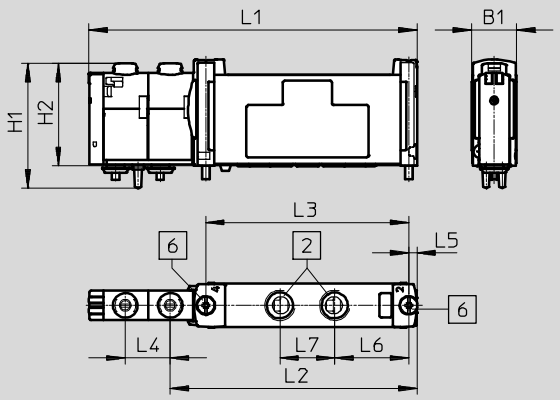
Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

Valve switching times							
Valve function		T32-A[1]	T32-M[2]	M52-A[1]	B52	M 52-M[2)]	P53
Switching time on	[ms]	10	13	13	–	10	15
Switching time off	[ms]	29	21	26	–	38	42
Changeover time	[ms]	–	–	–	9	–	25

1) Pneumatic spring.
2) Mechanical spring

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

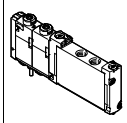
Semi in-line valves G⅛



2 Ports 2 and 4
6 Mounting screw

Type	B1	H1	H2	L1	L2	L3	L4	L5	L6	L7
VUVG-S14-...-G18-1T1L	14.7	40.9	33.5	107.6	81	66.5	14.7	2.8	24.3	18

Ordering data

	Description		Part no.	Type
Semi in-line valve G1/8				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**573464**	**VUVG-S14-T32C-AZT-G18-1T1L**
		Normally open, reset method: pneumatic spring	**573465**	**VUVG-S14-T32U-AZT-G18-1T1L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**573466**	**VUVG-S14-T32H-AZT-G18-1T1L**
		Normally closed, reset method: mechanical spring	**573467**	**VUVG-S14-T32C-MZT-G18-1T1L**
		Normally open, reset method: mechanical spring	**573468**	**VUVG-S14-T32U-MZT-G18-1T1L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**573469**	**VUVG-S14-T32H-MZT-G18-1T1L**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic spring	**573470**	**VUVG-S14-M52-AZT-G18-1T1L**
		Reset method: mechanical spring	**573471**	**VUVG-S14-M52-MZT-G18-1T1L**
	5/2-way valve, double solenoid			
	External pilot air supply		**573472**	**VUVG-S14-B52-ZT-G18-1T1L**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**573473**	**VUVG-S14-P53C-ZT-G18-1T1L**
		Mid-position pressurized, mechanical spring reset method	**573475**	**VUVG-S14-P53U-ZT-G18-1T1L**
		Mid-position exhausted, mechanical spring reset method	**573474**	**VUVG-S14-P53E-ZT-G18-1T1**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Type codes - Semi in-line valves G1/4

VUVG	–	S	18	–		–		Z		–		–	1	T1	L

Directional control valve type	
Semi in-line valves	**S**

Size	
18 mm	**18**

Valve function	
5/2-way valve, bistable	**B52**
5/2-way valve, single solenoid,	**M52**
5/3-way valve, mid-position closed	**P53C**
5/3-way valve, mid-position exhausted	**P53E**
5/3-way valve, mid-position pressurised	**P53U**
2x 3/2-way valve, normally closed	**T32C**
2x 3/2-way valve, 1x normally open, 1x closed	**T32H**
2x 3/2-way valve, normally open	**T32U**

Reset method	
A	Pneumatic spring with T32
M	Mechanical spring with M52 and T32
R	Pneumatic/mechanical spring with M52
–	With B52 and P53

Pilot air	
Z	External

Manual override	
H	Non-detenting
S	Covered
T	Non-detenting, detenting
Y	Detenting, without accessories

Pneumatic connection	
G14	G1/4 thread
Q6	Push-in connector 6 mm
Q8	Push-in connector 8 mm
Q10	Push-in connector 10 mm
T14	Push-in connector 1/4"
T516	Push-in connector 5/16"
T38	Push-in connector 3/8"

Nominal operating voltage	
1	24 V DC

Electrical connection	
T1	Plug-in

Advertisement	
L	LED

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves G1/4

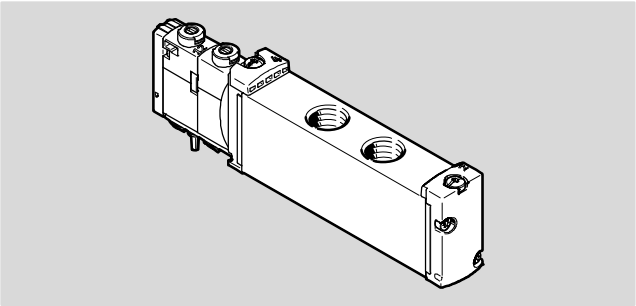
Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, bistable
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 18 mm

Flow rate
900 ... 1200 l/min

Voltage
24 V DC



General Technical data													
Valve function			T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position			C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position			Single pilot							Double solenoid	One position			
Pneumatic spring reset method			Yes			No			Yes[5]	–	No	–		
Mechanical spring reset method			No			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1			No			With external pilot air								
Design			Piston spool											
Sealing principle			Soft											
Type of control			Electric											
Type of control			Pilot											
Pilot air supply			External											
Exhaust function			With flow control option											
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting			On manifold rail											
Mounting position			Any											
Signal status display			LED											
Flow rate on manifold rail G⅛		[l/min]	900			900			1150	1200	1150	1000		
Size		[mm]	18											
Ports	1, 3, 5, 12/14, 82/84		On manifold rail											
	2, 4		G1/4											
Product weight		[g]	145			147			138	145	138	140		
Approval certificate			c UL us - Recognized (OL)											
			c CSA us (OL)											
			RCM mark											
CE marking (see declaration of conformity)[6]			To EU EMC Directive											
Corrosion resistance class CRC[7]			2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised.
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
6) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
7) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves G1/4

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[2]	M52-R[3]	B52	M52-M[2]	P53
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]					
pilot medium			Compressed air to ISO 8573-1:2010 [7:4:4]					
Note on the operating/pilot medium			Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure	internal pilot air supply	[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
	External pilot air supply	[bar]	1.5 ... 10	–0.9 ... 10			–0.9 ... 8	–0.9 ... 10
Pilot pressure[4]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
Ambient temperature		[°C]	–5 ... +60					
Temperature of medium		[°C]	–5 ... +60					

1) Pneumatic spring
2) Mechanical spring
3) Mixed, pneumatic/mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data			
Electrical connection			Via sub-base
Operating voltage		[V DC]	24 ±10%
Power		[W]	1
Duty cycle		[%]	100
Max. switching frequency		[Hz]	3
Degree of protection to EN 60529	Individual valve		IP67/IP65
	Valve terminal		IP40, IP67/IP65

Safety data		
Max. positive test pulse with logic 0	[µs]	1600
Max. negative test pulse with logic 1	[µs]	3000
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6

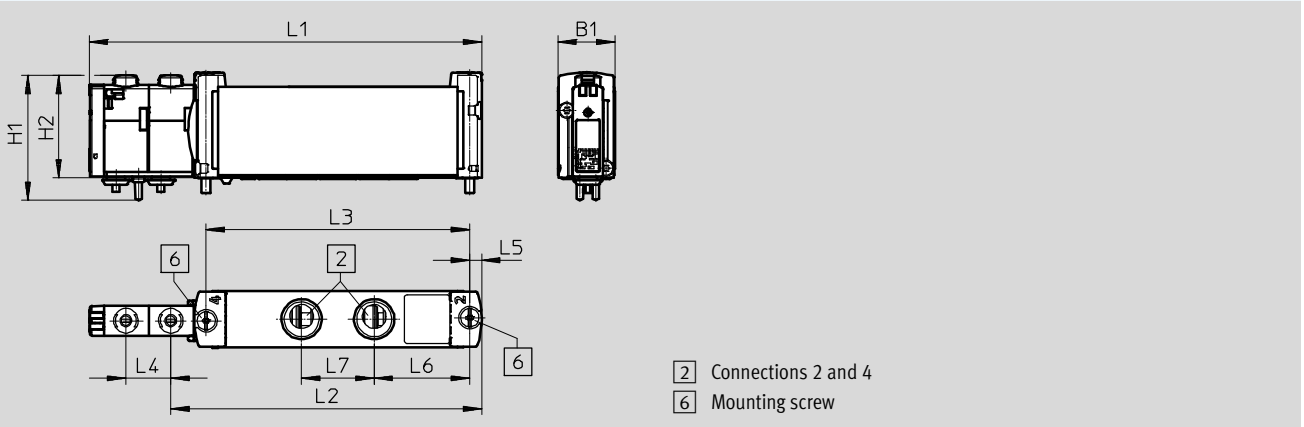
Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

Valve switching times							
Valve function		T32-A[1]	T32-M[2]	M52-R[3]	B52	M52-M[2]	P53
Switching time on	[ms]	15	25	20	–	13	20
Switching time off	[ms]	35	33	35	–	50	57
Changeover time	[ms]	–	–	–	15	–	31

1) Pneumatic spring
2) Mechanical spring
3) Mixed, pneumatic/mechanical spring

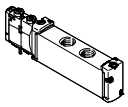
Dimensions Download CAD data ➔ **www.festo.com**

Semi in-line valve G1/4



Type	B1	H1	H2	L1	L2	L3	L4	L5	L6	L7
VUVG-S18-...-G14-1T1L	18.7	40.9	33.6	128.6	101.9	86.4	14.7	3.9	31.3	23.8

ordering data

	Description		Part no.	Type
Semi in-line valve G1/4				
	2x 3/2-way valve			
	External pilot air supply	Normally closed	**8004873**	**VUVG-S18-T32C-AZT-G14-1T1L**
		Normally open, reset method: pneumatic spring	**8004874**	**VUVG-S18-T32U-AZT-G14-1T1L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**8004875**	**VUVG-S18-T32H-AZT-G14-1T1L**
		Normally closed, reset method: mechanical spring	**8004876**	**VUVG-S18-T32C-MZT-G14-1T1L**
		Normally open, reset method: mechanical spring	**8004877**	**VUVG-S18-T32U-MZT-G14-1T1L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8004878**	**VUVG-S18-T32H-MZT-G14-1T1L**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic/mechanical spring	**8004879**	**VUVG-S18-M52-RZT-G14-1T1L**
		Mechanical spring reset method	**8004880**	**VUVG-S18-M52-MZT-G14-1T1L**
	5/2-way valve, double solenoid			
	External pilot air supply		**8004881**	**VUVG-S18-B52-ZT-G14-1T1L**
	5/3-way valve			
	External pilot air supply	Mid-position closed	**8004882**	**VUVG-S18-P53C-ZT-G14-1T1L**
		Mid-position pressurised	**8004883**	**VUVG-S18-P53E-ZT-G14-1T1L**
		Mid-position exhausted	**8004884**	**VUVG-S18-P53U-ZT-G14-1T1L**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Type codes - Sub-base valves M5/M7

VUVG	–	B		–		–	

Type of directional control valve	
Sub-base valves	**B**

Size	
10 mm	**10**
10 mm, 3/2-way valve (M32)	**10Z**

Valve function	
5/2-way valve, double solenoid	**B52**
5/2-way valve, single solenoid	**M52**
3/2-way valve, normally closed	**M32C**
3/2-way valve, normally open	**M32U**
5/3-way valve, mid-position closed	**P53C**
5/3-way valve, mid-position exhausted	**P53E**
5/3-way valve, mid-position pressurised	**P53U**
2x 3/2-way valve, normally closed	**T32C**
2x 3/2-way valve, 1x normally open, 1x normally closed	**T32H**
2x 3/2-way valve, normally open	**T32U**

Reset method	
Pneumatic spring with T32	**A**
Mechanical spring with M52 and T32	**M**
Pneumatic/mechanical spring with M52 and M32	**R**
With B52 and P53	**–**

Z		–	F	–	1	T1	L	–	EX2C

EU certification	
EX2C	II3GD

Display	
L	LED

Electrical connection	
T1	Plug-in

Nominal operating voltage	
1	24 V DC

Pneumatic connection	
F	Flange/sub-base

Manual override	
H	Non-detenting
S	Covered
T	Non-detenting, detenting
Y	Detenting, without accessories

Pilot air	
Z	External

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Sub-base valves M5/M7

Function
3/2C, 3/2U
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, bistable
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 10 mm

Flow rate
130 ... 300 l/min

Voltage
24 V DC

General Technical data																
Valve function		T32-A			T32-M			M32-R		M52-R	B52	M52-M	P53		
Normal position		C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	C[1]	U[2]	–	–	–	C[1]	U[2]	E[3]
Stable position		Single pilot									Double solenoid	One position			
Pneumatic spring reset method		Yes			No			No		Yes[5]	–	No	–		
Mechanical spring reset method		No			Yes			Yes		Yes[5]	–	Yes	Yes		
Vacuum operation at port 1		No			With external pilot air										
Design		Piston spool													
Sealing principle		Soft													
Type of control		Electric													
Type of control		Pilot													
Pilot air supply		External													
Exhaust function		With flow control option													
Manual override		Choice of non-detenting, covered, non-detenting/detenting or detenting													
Type of mounting		On manifold rail													
Mounting position		Any													
Signal status display		LED													
Standard nominal flow rate M5/M7	[l/min]	160			140			140		300		260	260		
Flow rate on manifold rail M5, front	[l/min]	150			130			130		220		220	200		
Flow rate on manifold rail M7, front	[l/min]	160			140			140		270		240	250		
Flow rate on manifold rail M7, underneath	[l/min]	160			140			140		300		260	260		
Size	[mm]	10													
Ports	1, 3, 5, 12/14, 82/84	On manifold rail													
	2, 4	On manifold rail													
Product weight	[g]	59						53			60	53	58		
Approval certificate		c UL us - Recognized (OL)													
		c CSA us (OL)													
		RCM mark													
CE marking (see declaration of conformity)[6]		To EU EMC Directive													
Corrosion resistance class CRC[7]		2													

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised.
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
6) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
7) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Sub-base valves M5/M7

Operating and environmental conditions									
Valve function			T32-A[1]	T32-M[3]	M32-R[2]	M52-R[2]	B52	M52-M[3]	P53
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]						
Operating pressure	Internal pilot air supply	[bar]	1.5 … 8	2.5 … 8	2.5 … 8	2.5 … 8	1.5 … 8	3 … 8	3 … 8
	External pilot air supply	[bar]	1.5 … 10	–0.9 …10				–0.9 … 8	–0.9 … 10
Pilot pressure[4]		[bar]	1.5 … 8	2 … 8	2.5 … 8	2.5 … 8	1.5 … 8	3 … 8	3 … 8
Ambient temperature		[°C]	–5 … +60						
Temperature of medium		[°C]	–5 … +60						

1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data			
Electrical connection			Via sub-base
Operating voltage		[V DC]	24 ±10%
Power consumption per valve solenoid		[W]	1/0.4 (after 25 ms)
Duty cycle		[%]	100
Max. switching frequency		[Hz]	3
Degree of protection to EN 60529	Individual valve		IP67/IP65
	Valve terminals VTUG		IP40, IP67/IP65
	Valve terminal VTUG-VI-EX2		IP40, IP65, IP67, IP69K

Safety data		
Max. positive test pulse with logic 0	[µs]	1600
Max. negative test pulse with logic 1	[µs]	3000
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6

ATEX		
Type		VTUG-VI-EX2
ATEX category gas		II 3G
Type of ignition protection for gas		Ex ec IIC T4 Gc
ATEX category for dust		II 3D
Type of ignition protection for dust		Ex tc IIIC T135°C Dc
Explosion protection certification outside the EU		EPL Dc (IECEx)
		EPL Gc (IECEx)
Explosion ambient temperature	[°C]	5°C <= Ta <= +50°C, -5°C <= Ta <= +60°C
CE marking (see declaration of atmosphere)		According to the EU EMC Directive, the EU ATEX DIrective and the EU RoHS Directive
Certificate issuing authority		IBExU16ATEXB021 X
		IECEx IBE 17.0003 X

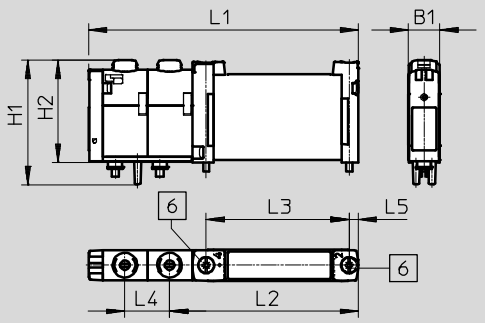
Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

Valve switching times								
Valve function		T32-A[1]	T32-M[3]	M32-R[2]	M52-R[2]	B52	M52-M[3]	P53
Switching time on	[ms]	8	10	9	9	–	12	12
Switching time off	[ms]	20	20	17	21	–	30	38
Changeover time	[ms]	–	–	–	–	9	–	16

1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring

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

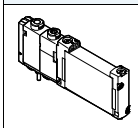
Sub-base valve M5/M7

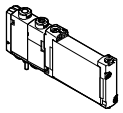


6 Mounting screw

Type	B1	H1	H2	L1	L2	L3	L4	L5
VUVG-B10-...-F-1T1L	10.3	40.7	33	88.6	62	47	14.7	3
VUVG-B10-...-F-1T1L-EX2C								

Ordering data

	Description		Part no.	Type
Sub-base valve M5/M7				
	3/2-way valve			
	External pilot air supply	Normally closed, reset method: mechanical spring	**8028231**	**VUVG-B10Z-M32C-RZT-F-1T1L**
		Normally open, reset method: mechanical spring	**8028232**	**VUVG-B10Z-M32U-RZT-F-1T1L**
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**573410**	**VUVG-B10-T32C-AZT-F-1T1L**
		Normally open, reset method: pneumatic spring	**573411**	**VUVG-B10-T32U-AZT-F-1T1L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**573412**	**VUVG-B10-T32H-AZT-F-1T1L**
		Normally closed, reset method: mechanical spring	**573413**	**VUVG-B10-T32C-MZT-F-1T1L**
		Normally open, reset method: mechanical spring	**573414**	**VUVG-B10-T32U-MZT-F-1T1L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**573415**	**VUVG-B10-T32H-MZT-F-1T1L**
	5/2-way valve, single solenoid			
	External pilot air supply	Mechanical spring reset method	**573417**	**VUVG-B10-M52-MZT-F-1T1L**
		Reset method: pneumatic/mechanical spring	**573416**	**VUVG-B10-M52-RZT-F-1T1L**
	5/2-way valve, double solenoid			
	External pilot air supply		**573418**	**VUVG-B10-B52-ZT-F-1T1L**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**573419**	**VUVG-B10-P53C-ZT-F-1T1L**
		Mid-position pressurized, mechanical spring reset method	**573421**	**VUVG-B10-P53U-ZT-F-1T1L**
		Mid-position exhausted, mechanical spring reset method	**573420**	**VUVG-B10-P53E-ZT-F-1T1L**

Ordering data				
	Description		Part no.	Type
Sub-base valve M5/M7				
	3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic/ mechanical spring	**8041900**	**VUVG-B10Z-M32C-RZT-F-1T1L-EX2C**
		Normally open, reset method: pneumatic/ mechanical spring	**8041901**	**VUVG-B10Z-M32U-RZT-F-1T1L-EX2C**
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**8041895**	**VUVG-B10-T32C-AZT-F-1T1L-EX2C**
		Normally open, reset method: pneumatic spring	**8041896**	**VUVG-B10-T32U-AZT-F-1T1L-EX2C**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**8041897**	**VUVG-B10-T32H-AZT-F-1T1L-EX2C**
		Normally closed, reset method: mechanical spring	**8041891**	**VUVG-B10-T32C-MZT-F-1T1L-EX2C**
		Normally open, reset method: mechanical spring	**8041898**	**VUVG-B10-T32U-MZT-F-1T1L-EX2C**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8041899**	**VUVG-B10-T32H-MZT-F-1T1L-EX2C**
	5/2-way valve, single solenoid			
	External pilot air supply	Mechanical spring reset method	**8041892**	**VUVG-B10-M52-MZT-F-1T1L-EX2C**
		Reset method: pneumatic/mechanical spring	**8041889**	**VUVG-B10-M52-RZT-F-1T1L-EX2C**
	5/2-way valve, double solenoid			
	External pilot air supply		**8041888**	**VUVG-B10-B52-ZT-F-1T1L-EX2C**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**8041890**	**VUVG-B10-P53C-ZT-F-1T1L-EX2C**
		Mid-position pressurized, mechanical spring reset method	**8041893**	**VUVG-B10-P53U-ZT-F-1T1L-EX2C**
		Mid-position exhausted, mechanical spring reset method	**8041894**	**VUVG-B10-P53E-ZT-F-1T1L-EX2C**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Type codes - Sub-base valves G1/8

VUVG	–	B	14	–		–		Z		–	F	–	1	T1	L	–	EX2C

Type of directional control valve

Sub-base valves	**B**

Size

14 mm	**14**
14 mm, 3/2-way valve (M32)	**14Z**

Valve function

5/2-way valve, double solenoid	**B52**
5/2-way valve, single solenoid	**M52**
3/2-way valve, normally closed	**M32C**
3/2-way valve, normally open	**M32U**
5/3-way valve, mid-position closed	**P53C**
5/3-way valve, mid-position exhausted	**P53E**
5/3-way valve, mid-position pressurised	**P53U**
2x 3/2-way valve, normally closed	**T32C**
2x 3/2-way valve, normally open	**T32U**
2x 3/2-way valve, 1x normally open, 1x normally closed	**T32H**

Reset method

Pneumatic spring with M52, M32 and T32	**A**
Mechanical spring with M52 and T32	**M**
With B52 and P53	–

Pilot air

Z	External

Manual override

H	Non-detenting
S	Covered
T	Non-detenting, detenting
Y	Detenting, without accessories

Pneumatic connection

F	Flange/sub-base

Nominal operating voltage

1	24 V DC

Electrical connection

T1	Plug-in

Display

L	LED

EU certification

EX2C	II3GD

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Sub-base valves G1/8

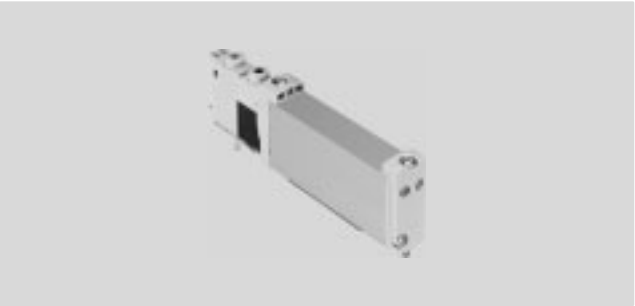
Function
3/2C, 3/2U
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, bistable
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 14 mm

Flow rate
350 ... 560 l/min

Voltage
24 V DC



General Technical data															
Valve function	T32-A			T32-M			M32-A		M52-A	B52	M52-M	P53		
Normal position	C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	C[1]	U[2]	–	–	–	C[1]	U[2]	E[3]
Stable position	Single pilot									Double solenoid	One position			
Pneumatic spring reset method	Yes			No			Yes		Yes	–	No	–		
Mechanical spring reset method	No			Yes			No		No	–	Yes	Yes		
Vacuum operation at port 1	No			With external pilot air										
Design	Piston spool													
Sealing principle	Soft													
Type of control	Electric													
Type of control	Pilot													
Pilot air supply	External													
Exhaust function	With flow control option													
Manual override	Choice of non-detenting, covered, non-detenting/detenting or detenting													
Type of mounting	On manifold rail													
Mounting position	Any													
Signal status display	LED													
Standard nominal flow rate G1/8 [l/min]	530			470			350		550	560	550	510		
Flow rate on manifold rail G1/8, front [l/min]	490			440			320		500	510	500	470		
Flow rate on manifold rail G1/8, underneath [l/min]	530			470			350		550	560	550	510		
Size [mm]	14													
Ports 1, 3, 5, 12/14, 82/84	On manifold rail													
Ports 2, 4	On manifold rail													
Product weight [g]	102			100			91			98	89	95		
Approval certificate	c UL us - Recognized (OL)													
	c CSA us (OL)													
	RCM mark													
CE marking (see declaration of conformity)[5]	To EU EMC Directive													
Corrosion resistance class CRC[6]	2													

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised.
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
6) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Sub-base valves G1/8

Operating and environmental conditions									
Valve function			T32-A[1]	T32-M[2]	M32-A[1]	M52-A[1]	B52	M52-M[2]	P53
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]						
Operating pressure	Internal pilot air supply	[bar]	1.5 ...8	3.5 ... 8	2.5 ... 8	2.5 ... 8	1.5 ...8	3 ... 8	3 ... 8
	External pilot air supply	[bar]	1.5 ... 10	–0.9 ...10				–0.9 ...8	–0.9 ...10
Pilot pressure[3)]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
Ambient temperature		[°C]	–5 ... +60						
Temperature of medium		[°C]	–5 ... +60						

1) Pneumatic spring
2) Mechanical spring.
3) Minimum pilot pressure 50% of operating pressure

Electrical data			
Electrical connection			Via sub-base
Operating voltage		[V DC]	24 ±10%
Power		[W]	1/0.4 (after 25 ms)
Duty cycle		[%]	100
Max. switching frequency		[Hz]	3
Degree of protection to EN 60529	Individual valve		IP67/IP65
	Valve terminal		IP40, IP67/IP65
	Valve terminal VTUG-VI-EX2		IP40, IP65, IP67, IP69K

Safety data		
Max. positive test pulse with logic 0	[µs]	1600
Max. negative test pulse with logic 1	[µs]	3000
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6

ATEX		
Type		VTUG-VI-EX2, VTUG-VI-EX3
ATEX category gas		II 3G
Type of ignition protection for gas		Ex ec IIC T4 Gc
ATEX category for dust		II 3D
Type of ignition protection for dust		Ex tc IIIC T135°C Dc
Explosion protection certification outside the EU		EPL Dc (IECEx)
		EPL Gc (IECEx)
Explosion ambient temperature	[°C]	5°C <= Ta <= +50°C, -5°C <= Ta <= +60°C
CE marking (see declaration of atmosphere)		According to the EU EMC Directive, the EU ATEX DIrective and the EU RoHS Directive
Certificate issuing authority		IBExU16ATEXB021 X
		IECEx IBE 17.0003 X

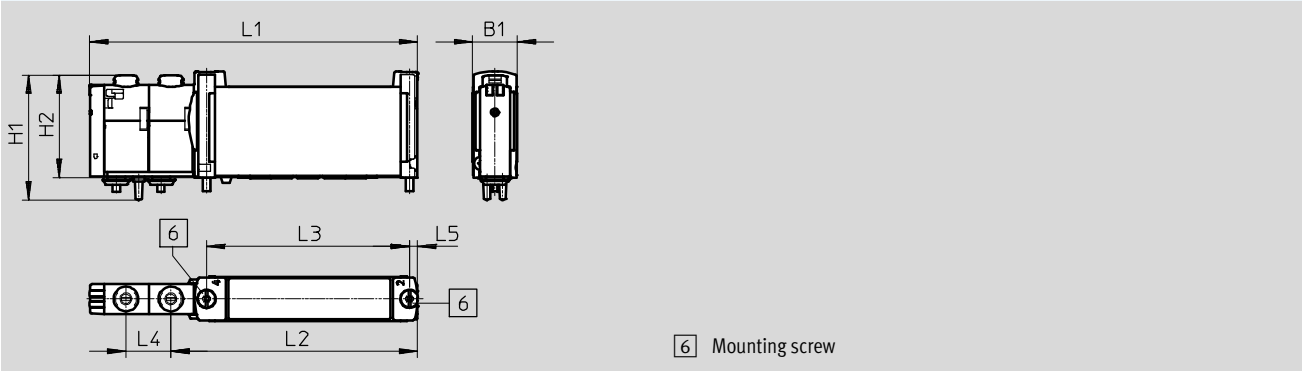
Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

Valve switching times								
Valve function		T32-A[1]	T32-M[2]	M32-A[1]	M52-A[1]	B52	M52-M[2]	P53
Switching time on	[ms]	10	13	13	13	–	10	15
Switching time off	[ms]	29	21	20	26	–	38	42
Changeover time	[ms]	–	–	–	–	9	–	25

1) Pneumatic spring
2) Mechanical spring

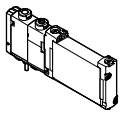
Dimensions Download CAD data ➔ **www.festo.com**

Sub-base valve G1/8

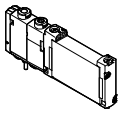


Type	B1	H1	H2	L1	L2	L3	L4	L5
VUVG-B14-...-F-1T1L	14.7	40.9	33.5	107.6	81	66.5	15.1	2.8
VUVG-B14-...-F-1T1L-EX2C								

Ordering data

	Description		Part no.	Type
Sub-base valve G1/8				
	3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**8028235**	**VUVG-B14Z-M32C-AZT-F-1T1L**
		Normally open, reset method: pneumatic spring	**8028236**	**VUVG-B14Z-M32U-AZT-F-1T1L**
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**573476**	**VUVG-B14-T32C-AZT-F-1T1L**
		Normally open, reset method: pneumatic spring	**573477**	**VUVG-B14-T32U-AZT-F-1T1L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**573478**	**VUVG-B14-T32H-AZT-F-1T1L**
		Normally closed, reset method: mechanical spring	**573479**	**VUVG-B14-T32C-MZT-F-1T1L**
		Normally open, reset method: mechanical spring	**573480**	**VUVG-B14-T32U-MZT-F-1T1L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**573481**	**VUVG-B14-T32H-MZT-F-1T1L**
	5/2-way valve, single solenoid			
	External pilot air supply	Pneumatic spring reset method	**573482**	**VUVG-B14-M52-AZT-F-1T1L**
		Mechanical spring reset method	**573483**	**VUVG-B14-M52-MZT-F-1T1L**
	5/2-way valve, double solenoid			
	External pilot air supply		**573484**	**VUVG-B14-B52-ZT-F-1T1L**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**573485**	**VUVG-B14-P53C-ZT-F-1T1L**
		Mid-position pressurized, mechanical spring reset method	**573487**	**VUVG-B14-P53U-ZT-F-1T1L**
		Mid-position exhausted, mechanical spring reset method	**573486**	**VUVG-B14-P53E-ZT-F-1T1L**

Ordering data

	Description		Part no.	Type
Sub-base valve G1/8				
	3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**8041970**	**VUVG-B14Z-M32C-AZT-F-1T1L-EX2C**
		Normally open, reset method: pneumatic spring	**8041971**	**VUVG-B14Z-M32U-AZT-F-1T1L-EX2C**
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**8041958**	**VUVG-B14-T32C-AZT-F-1T1L-EX2C**
		Normally open, reset method: pneumatic spring	**8041959**	**VUVG-B14-T32U-AZT-F-1T1L-EX2C**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**8041960**	**VUVG-B14-T32H-AZT-F-1T1L-EX2C**
		Normally closed, reset method: mechanical spring	**8041961**	**VUVG-B14-T32C-MZT-F-1T1L-EX2C**
		Normally open, reset method: mechanical spring	**8041962**	**VUVG-B14-T32U-MZT-F-1T1L-EX2C**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8041963**	**VUVG-B14-T32H-MZT-F-1T1L-EX2C**
	5/2-way valve, single solenoid			
	External pilot air supply	Pneumatic spring reset method	**8041964**	**VUVG-B14-M52-AZT-F-1T1L-EX2C**
		Mechanical spring reset method	**8041965**	**VUVG-B14-M52-MZT-F-1T1L-EX2C**
	5/2-way valve, double solenoid			
	External pilot air supply		**8041966**	**VUVG-B14-B52-ZT-F-1T1L-EX2C**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**8041967**	**VUVG-B14-P53C-ZT-F-1T1L-EX2C**
		Mid-position pressurized, mechanical spring reset method	**8041969**	**VUVG-B14-P53U-ZT-F-1T1L-EX2C**
		Mid-position exhausted, mechanical spring reset method	**8041968**	**VUVG-B14-P53E-ZT-F-1T1L-EX2C**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Type codes - Sub-base valves G1/4

VUVG	–	B	18	–		–		Z		–	F	–	1	T1	L

Type of directional control valve

Sub-base valves	**B**

Size

18 mm	**18**

Valve function

5/2-way valve, double solenoid	**B52**
5/2-way valve, single solenoid	**M52**
5/3-way valve, mid-position closed	**P53C**
5/3-way valve, mid-position exhausted	**P53E**
5/3-way valve, mid-position pressurised	**P53U**
2x 3/2-way valve, normally closed	**T32C**
2x 3/2-way valve, 1x normally open, 1x closed	**T32H**
2x 3/2-way valve, normally open	**T32U**

Reset method

A	Pneumatic spring with T32
M	Mechanical spring with M52 and T32
R	Pneumatic/mechanical spring with M52
–	With B52 and P53

Pilot air

Z	External

Manual override

H	Non-detenting
S	Covered
T	Non-detenting, detenting
Y	Detenting, without accessories

Pneumatic connection

F	Flange/sub-base

Nominal operating voltage

1	24 V DC

Electrical connection

T1	Plug-in

Display

L	LED

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Sub-base valves G1/4

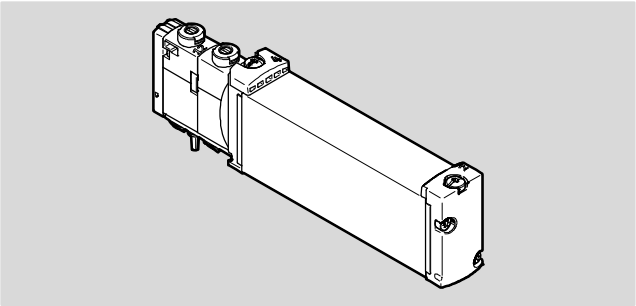
Function
2x 3/2C, 2x 3/2U, 2x 3/2H
5/2-way, single pilot
5/2-way, bistable
5/3C, 5/3U, 5/3E

Circuit symbol ➔ Page 13

Size 18 mm

Flow rate
800 ... 1000 l/min

Voltage
24 V DC



General Technical data													
Valve function	T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position	C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	–	C[1]	U[2]	E[3]
Stable position	Single pilot							Double solenoid	One position			
Pneumatic spring reset method	Yes			No			Yes[5]	–	No	–		
Mechanical spring reset method	No			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1	No			With external pilot air								
Design	Piston spool											
Sealing principle	Soft											
Type of control	Electric											
Type of control	Pilot											
Pilot air supply	External											
Exhaust function	With flow control option											
Manual override	Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting	On manifold rail											
Mounting position	Any											
Signal status display	LED											
Flow rate on manifold rail G¼, front [l/min]	800			800			950	1000	950	900		
Size [mm]	18											
Ports 1, 3, 5, 12/14, 82/84	On manifold rail											
Ports 2, 4	On manifold rail											
Product weight [g]	145			147			138	145	138	140		
Approval certificate	c UL us - Recognized (OL)											
	c CSA us (OL)											
	RCM mark											
CE marking (see declaration of atmosphere)	To EU EMC Directive[6]											
Corrosion resistance class CRC[7]	2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised.
3) E=Mid-position exhausted
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
6) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
7) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Sub-base valves G1/4

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[2]	M52-R[3]	B52	M52-M[2]	P53
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]					
pilot medium			Compressed air to ISO 8573-1:2010 [7:4:4]					
Note on the operating/pilot medium			Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure	Internal pilot air supply	[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
	External pilot air supply	[bar]	1.5 ... 10	–0.9 ... 10			–0.9 ... 8	–0.9 ... 10
Pilot pressure[4]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
Ambient temperature		[°C]	–5 ... +60					
Temperature of medium		[°C]	–5 ... +60					

1) Pneumatic spring
2) Mechanical spring
3) Mixed, pneumatic/mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data			
Electrical connection			Via sub-base
Operating voltage		[V DC]	24 ±10%
Power		[W]	1
Duty cycle		[%]	100
Max. switching frequency		[Hz]	3
Degree of protection to EN 60529	Individual valve		IP67/IP65
	Valve terminal		IP40, IP67/IP65

Safety data		
Max. positive test pulse with logic 0	[µs]	1600
Max. negative test pulse with logic 1	[µs]	3000
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6

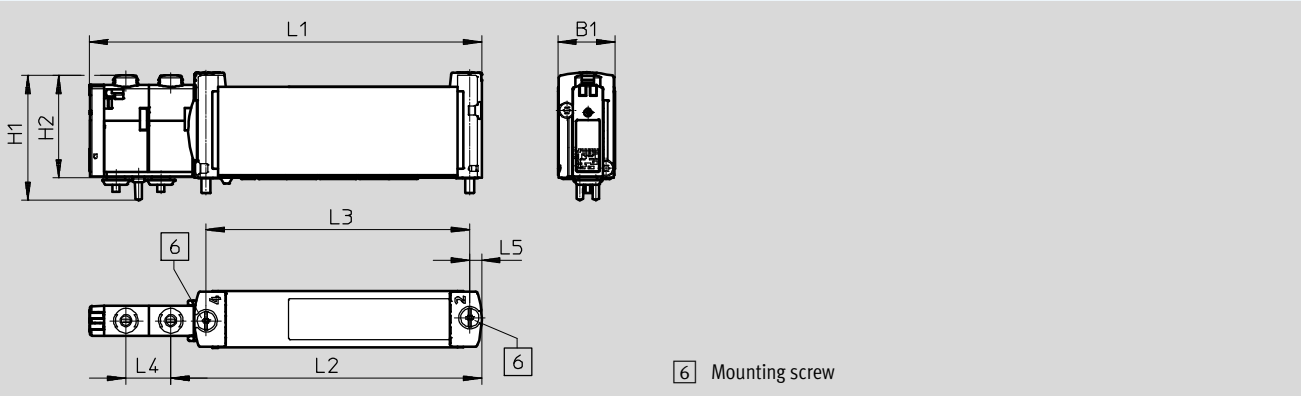
Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

Valve switching times							
Valve function		T32-A[1]	T32-M[2]	M52-R[3]	B52	M52-M[2]	P53
Switching time on	[ms]	15	25	20	–	13	20
Switching time off	[ms]	35	33	35	–	50	57
Changeover time	[ms]	–	–	–	15	–	31

1) Pneumatic spring
2) Mechanical spring
3) Mixed, pneumatic/mechanical spring

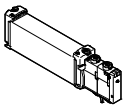
Dimensions Download CAD data ➔ **www.festo.com**

Sub-base valve G1/4



Type	B1	H1	H2	L1	L2	L3	L4	L5
VUVG-B18-...-F-1T1L	18.7	40.9	33.6	128.6	101.9	86.4	14.7	3.9

Ordering data

	Description		Part no.	Type
Sub-base valve G1/4				
	2x 3/2-way valve			
	External pilot air supply	Normally closed, reset method: pneumatic spring	**8004885**	**VUVG-B18-T32C-AZT-F-1T1L**
		Normally open, reset method: pneumatic spring	**8004886**	**VUVG-B18-T32U-AZT-F-1T1L**
		1x normally open, 1x normally closed, reset method: pneumatic spring	**8004887**	**VUVG-B18-T32H-AZT-F-1T1L**
		Normally closed, reset method: mechanical spring	**8004888**	**VUVG-B18-T32C-MZT-F-1T1L**
		Normally open, reset method: mechanical spring	**8004889**	**VUVG-B18-T32U-MZT-F-1T1L**
		1x normally open, 1x normally closed, reset method: mechanical spring	**8004890**	**VUVG-B18-T32H-MZT-F-1T1L**
	5/2-way valve, single solenoid			
	External pilot air supply	Reset method: pneumatic/mechanical spring	**8004891**	**VUVG-B18-M52-RZT-F-1T1L**
		Mechanical spring reset method	**8004892**	**VUVG-B18-M52-MZT-F-1T1L**
	5/2-way valve, double solenoid			
	External pilot air supply		**8004893**	**VUVG-B18-B52-ZT-F-1T1L**
	5/3-way valve			
	External pilot air supply	Mid-position closed, mechanical spring reset method	**8004894**	**VUVG-B18-P53C-ZT-F-1T1L**
		Mid-position exhausted, mechanical spring reset method	**8004895**	**VUVG-B18-P53E-ZT-F-1T1L**
		Mid-position pressurized, mechanical spring reset method	**8004896**	**VUVG-B18-P53U-ZT-F-1T1L**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Type codes Manifold rail

VABM	–	L1	–					–		–		–			–			–		–	

Allocation	
Manifold rail	**L1**

Size	
For size 10 mm	**10**
For size 14 mm	**14**
For size 18 mm	**18**

Version	
Standard	**–**
High flow rate	**H**

Connection type	
Semi in-line	**G**
Sub-base	**W**

Connection direction	
At the side	**–**
Underneath	**B**
Front, control cabinet, single feed	**S1**
Front, control cabinet, double feed	**S2**

Pneumatic port 1, 3 and 5	
G1/8 thread	**G18**
Thread G1/4	**G14**
Thread G3/8	**G38**

Valve positions	
4 valve positions	**4**
5 valve positions	**5**
6 valve positions	**6**
7 valve positions	**7**
8 valve positions	**8**
9 valve positions	**9**
10 valve positions	**10**
12 valve positions	**12**
16 valve positions	**16**
20 valve positions	**20**
24 valve positions	**24**

Connection for valve function	
–	All valve positions can be fitted with 2 valve coils
M	Not all valve positions can be fitted with 2 valve coils

Electrical connection	
–	None
G	Preparation for electrical connection
LK	IO-Link
M1	Multi-pin with SUB-D plug connector
M3	Multi-pin with flat cable
PT	I-Port interface

Circuitry	
–	None
R	Holding current reduction with protective circuit

Outlet direction of electrical components	
–	On top
L	Left

Additional function	
–	None
LC	Interlock

ATEX certification	
–	None
EX2C	II3GD

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Manifold rail VABM

General technical data					
Manifold rail			Size 10	Size 14	Size 18
Short type code			VABM		
Grid dimension		[mm]	10.5	16	19
Mounting position			Optional		
Connection type			Semi in-line/sub-base		
Max. no. of valve positions			24		
Connection	12/14		M5	M5	G1/8
	82/84		M5	M5	G1/8
	2, 4		M5 or M7	G1/8	G1/4
	1, 3, 5		G1/8	G1/4	G3/8
Storage temperature		[°C]	–20 ... 60		
Approval certificate			c UL us - Recognized (OL)		
			c CSA us (OL)		
CE mark (see declaration of conformity)[1]			To EU EMC Directive		
Corrosion resistance class CRC[2]			2		

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

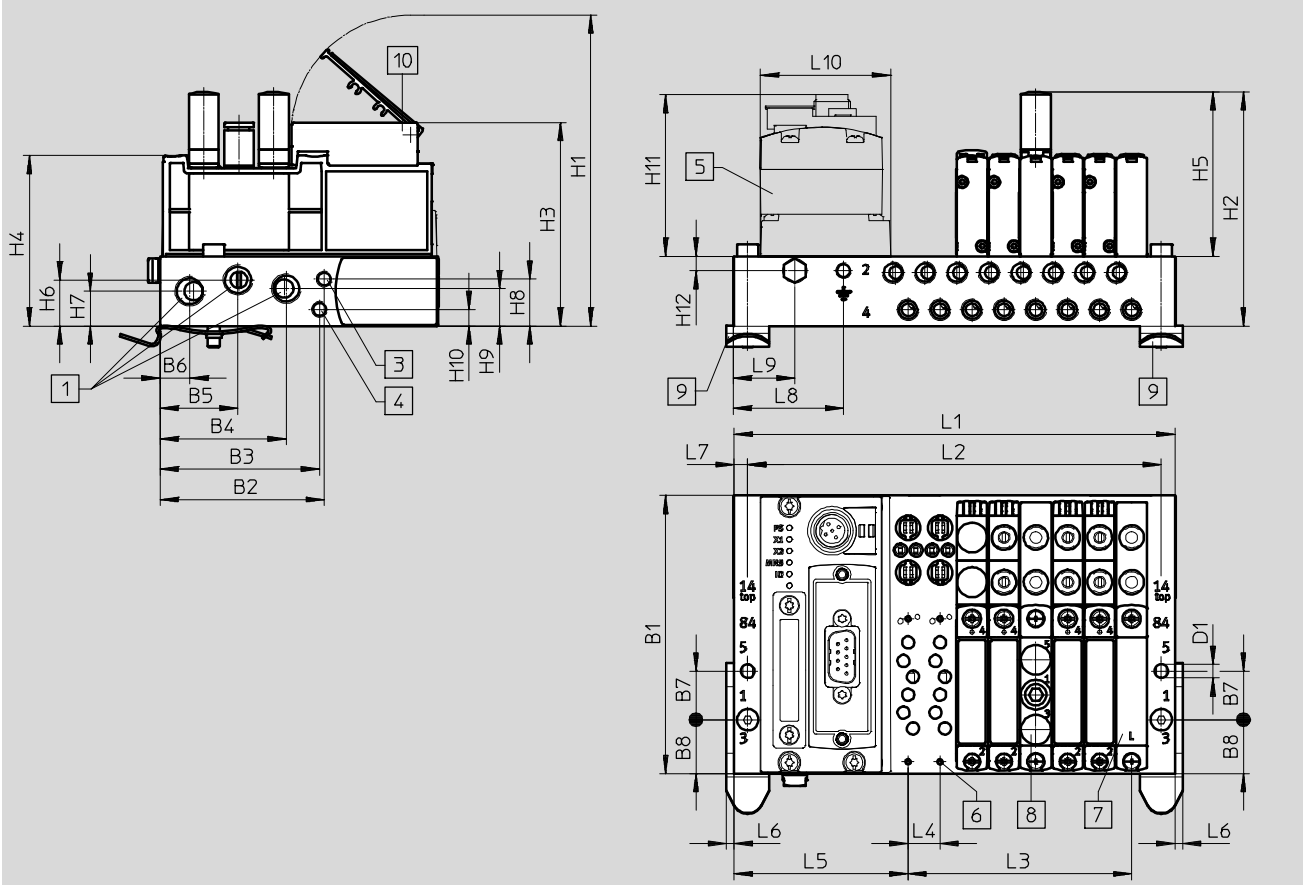
2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Weight [g]											
Valve positions	4	5	6	7	8	9	10	12	16	20	24
VABM-L1-10G-G18-...	329	363	397	431	465	499	533	601	737	873	1009
VABM-L1-10HW-G18-...	388	426	464	502	540	578	616	692	844	996	1148
VABM-L1-14G-G14-...	879	990	1101	1212	1323	1434	1545	1767	2211	2655	3099
VABM-L1-14W-G14-...	839	940	1041	1142	1243	1344	1445	1647	2051	2455	2859
VABM-L1-18G-G38-...	1461	1661	1861	2061	2261	2461	2661	3061	3861	4661	5461
VABM-L1-18W-G38-...	1369	1546	1723	1900	2077	2254	2431	2785	3493	4201	4909

Materials	
Manifold rail	Wrought aluminium alloy
Note on materials	RoHS-compliant

Dimensions – Example of a valve terminal with I-Port interface Download CAD data ➔ **www.festo.com**

Outlet orientation of electrical components on top



1 Connections 1, 3 and 5: size 10: G1/8 (on both ends), size 14: G1/4 (on both ends), size 18: G3/8 (on both ends)

3 Connections 12/14: sizes 10 and 14: M5 (on both ends), size 18: G1/8 (on both ends)

4 Connections 82/84: sizes 10 and 14: M5 (on both ends), size 18: G1/8 (on both ends)

5 CTEU-CANopen

6 For mounting valves/cover plates/supply plates to the manifold block: size 10: M2, size 14: M2.5, size 18: M3

7 Blanking plate

8 Supply plate, connection 1, 3 and 5: size 10: M7, size 14: G1/8, size 18: G1/4

9 H-rail mounting

10 Inscription label holder

Type	No. of valve positions	Size 10																
		B1	B2	B3	B4	B5	B6	B7	B8	D1 ∅	H1	H2	H3	H4	H5	H6	H7	H8
VABM	4-24	91.5	54	52.4	41.5	25.6	9.8	16	17.7	4.5	102.3	77.1	67	56.1	54.1	15.2	11.5	15.5

Type	No. of valve positions	Size 10									
		H9	H10	H11	H12	L4	L5	L6	L7	L8	L9	L10
VABM	4-24	12.4	5.5	54.8	4.8	10.5	57.3	2.5	4.5	36	20	42.5

Type	No. of valve positions	Size 14																
		B1	B2	B3	B4	B5	B6	B7	B8	D1 ∅	H1	H2	H3	H4	H5	H6	H7	H8
VABM	4-24	110	70	59.3	56.5	36.5	16	20	26.5	4.5	113.1	95.1	77.7	68.6	61.3	18.7	15.7	28.7

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Manifold rail VABM

Type	No. of valve positions	Size 14										
		H9	H10	H11	H12	L4	L5	L6	L7	L8	L9	L10
VABM	4-24	13.2	23.7	54.8	5.1	16	60.6	2	5	10	25.5	42.5

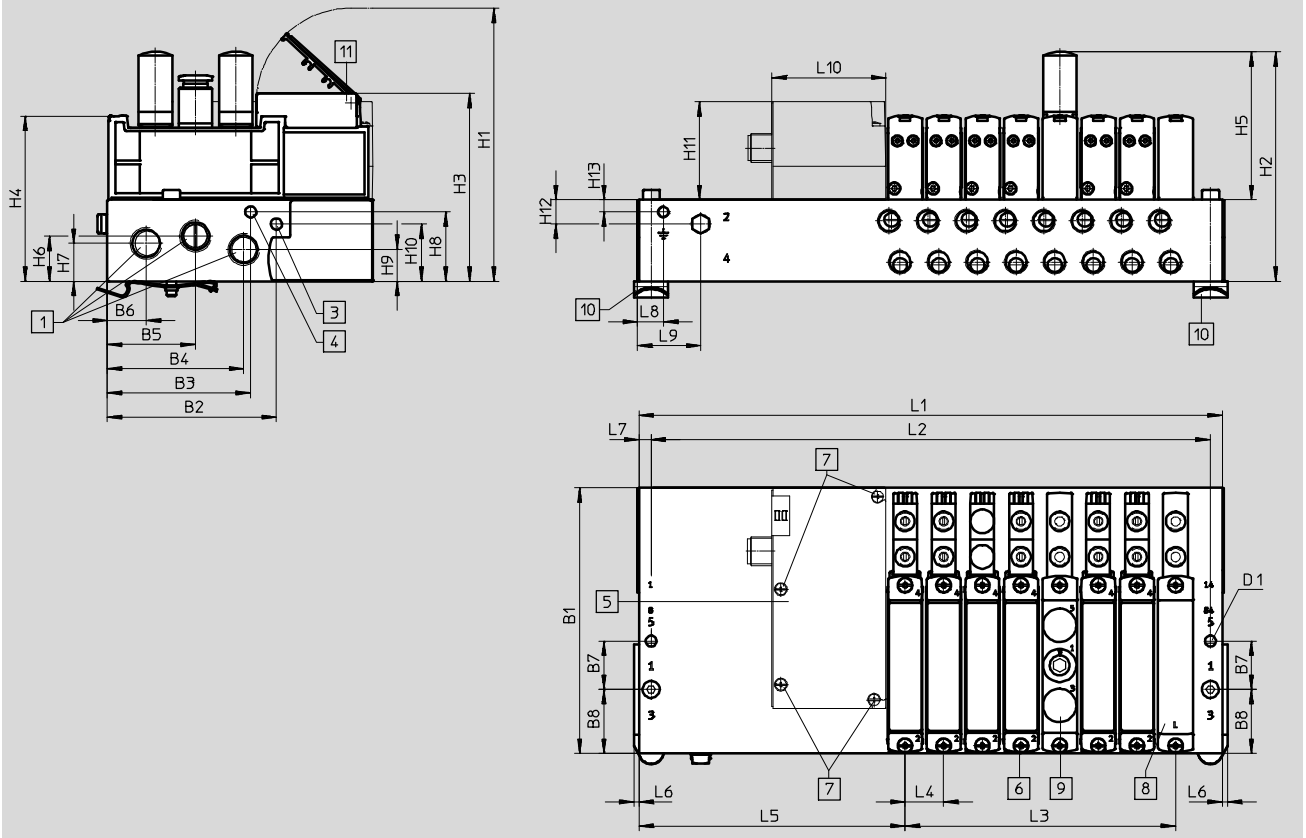
Type	No. of valve positions	Size 18															
		B1	B2	B3	B4	B5	B6	B7	B8	D1 ∅	H1	H2	H3	H4	H5	H6	H7	H8
VABM	4-24	131	90.5	77.3	72.3	47.5	21.5	26	34	5.5	121.5	95.2	–	77.4	52.7	23.6	18.7	35.1

Type	No. of valve positions	Size 18										
		H9	H10	H11	H12	L4	L5	L6	L7	L8	L9	L10
VABM	4-24	14.5	27	54.8	13.8	19	63.5	2	5	10	27	42.5

Type	No. of valve positions	Size 10			Size 14			Size 18		
		L1	L2	L3	L1	L2	L3	L1	L2	L3
VABM	4	103	94	31.5	128	118	48	139.5	129.5	57
	5	113.5	104.5	42	144	134	64	158.5	148.5	76
	6	124	115	52.5	160	150	80	177.5	167.5	95
	7	134.5	125.5	63	176	166	96	196.5	186.5	114
	8	145	136	73.5	192	182	112	215.5	205.5	133
	9	155.5	146.5	84	208	198	128	234.5	224.5	152
	10	166	157	94.5	224	214	144	253.5	243.5	171
	12	187	178	115.5	256	246	176	291.5	281.5	209
	16	229	220	157.5	320	310	240	367.5	357.5	285
	20	271	262	199.5	384	374	304	443.5	433.5	361
	24	313	304	241.5	448	438	368	519.5	509.5	437

Dimensions – Example of a valve terminal with I-Port interface Download CAD data ➔ **www.festo.com**

Outlet orientation of electrical components to the left



1 Connections 1, 3 and 5: size 10: G1/8 (on both ends), size 14: G1/4 (on both ends), size 18: G3/8 (on both ends)

3 Connections 12/14: sizes 10 and 14: M5 (on both ends), size 18: G1/8 (on both ends)

4 Connections 82/84: sizes 10 and 14: M5 (on both ends), size 18: G1/8 (on both ends)

5 Electrical connection, I-Port interface/IO-Link

6 For mounting valves/cover plates/supply plates to the manifold block: size 10: M2, size 14: M2.5, size 18: M3

7 Electrical interface

8 Blanking plate

9 Supply plate, connection 1, 3 and 5: size 10: M7, size 14: G1/8, size 18: G1/4

10 H-rail mounting

11 Inscription label holder

Type	No. of valve positions	Size 10																
		B1	B2	B3	B4	B5	B6	B7	B8	D1∅	H1	H2	H3	H4	H5	H6	H7	H8
VABM	4-24	91.5	54	52.4	41.5	25.6	9.8	16	17.7	4.5	102.3	77.1	67	56.1	54.1	15.2	11.5	15.5

Type	No. of valve positions	Size 10										
		H9	H10	H11	H12	H13	L4	L5	L6	L7	L8	L9	L10
VABM	4-24	12.4	5.5	40.8	10.1	5.1	10.5	106.8	2.5	4.5	36	75	47.1

Type	No. of valve positions	Size 14																
		B1	B2	B3	B4	B5	B6	B7	B8	D1 ∅	H1	H2	H3	H4	H5	H6	H7	H8
VABM	4-24	110	70	59.3	56.5	36.5	16	20	26.5	4.5	113.1	95.1	77.7	68.6	61.3	18.7	15.7	28.7

Type	No. of valve positions	Size 14										
		H9	H10	H11	H12	H13	L4	L5	L6	L7	L8	L9	L10
VABM	4-24	13.2	23.7	40.8	10.1	5.1	16	110.1	2	5	10	75	47.1

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Manifold rail VABM

Type	No. of valve positions	Size 18																
		B1	B2	B3	B4	B5	B6	B7	B8	D1 ⌀	H1	H2	H3	H4	H5	H6	H7	H8
VABM	4-24	131	90.5	77.3	72.3	47.5	21.5	26	34	5.5	121.5	95.2	–	77.4	52.7	23.6	18.7	35.1

Type	No. of valve positions	Size 18											
		H9	H10	H11	H12	H13	L4	L5	L6	L7	L8	L9	L10
VABM	4-24	14.5	27	40.8	13.8	10	19	105	2	5	10	27	47.1

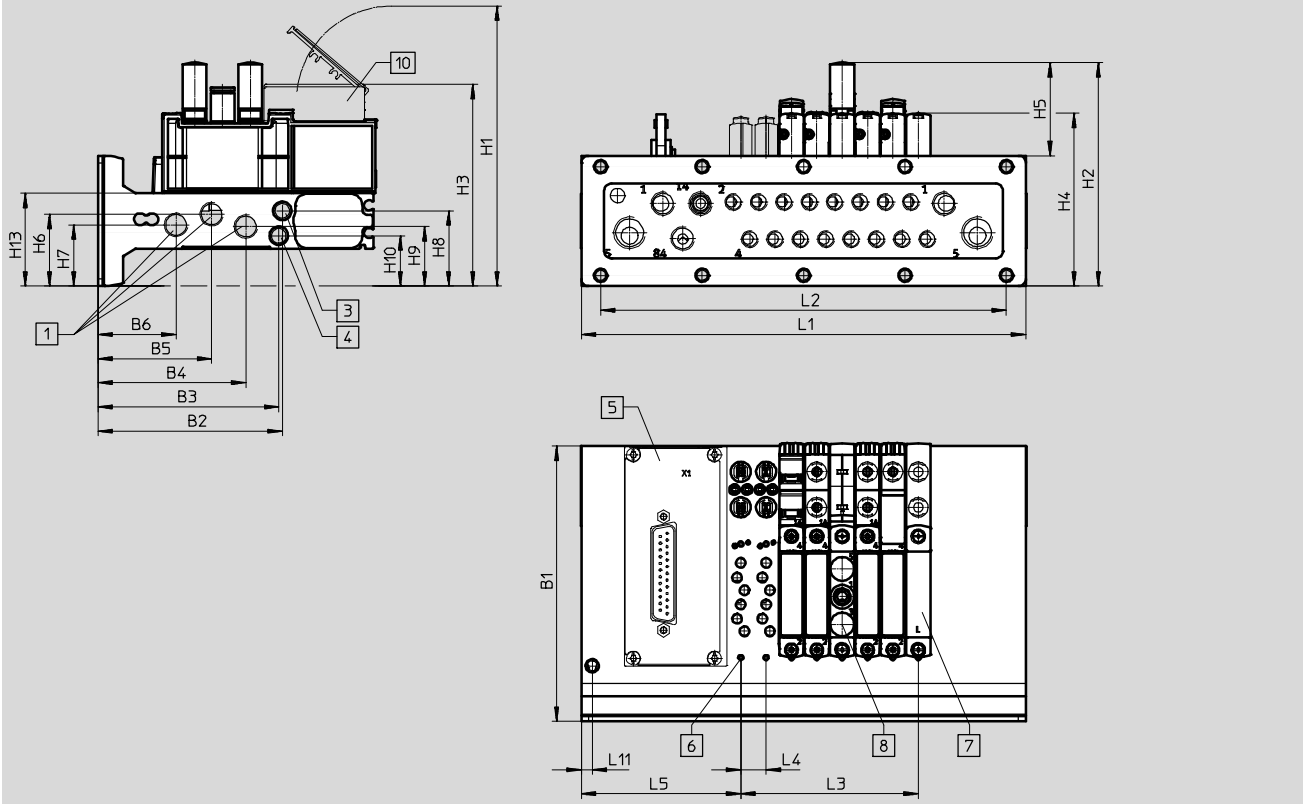
Type	No. of valve positions	Size 10			Size 14			Size 18		
		L1	L2	L3	L1	L2	L3	L1	L2	L3
VABM	4	152.5	143.5	31.5	177.5	167.5	48	181	171	57
	5	163	154	42	193.5	183.5	64	200	190	76
	6	173.5	164.5	52.5	209.5	199.5	80	219	209	95
	7	184	175	63	225.5	215.5	96	238	228	114
	8	194.5	185.5	73.5	241.5	231.5	112	257	247	133
	9	205	196	84	257.5	247.5	128	276	266	152
	10	215.5	206.5	94.5	273.5	263.5	144	295	285	171
	12	236.5	227.5	115.5	305.5	295.5	176	333	323	209
	16	278.5	269.5	157.5	369.5	359.5	240	409	399	285
	20	321	311.5	199.5	433.5	423.5	304	485	475	361
	24	362.5	353.5	241.5	497.5	487.5	368	561	551	437

Note

The dimensions for size 10 are the same as the dimensions for the manifold rail with interlock.

Dimensions – Example of control cabinet installation for valve terminal Download CAD data ➔ **www.festo.com**

Outlet orientation of electrical components on top



1 Connections 1, 3 and 5: size 10: G1/8, G1/4, size 14: G3/8, G1/4

3 Connection 12/14: size 10: M5 (on both ends), size 14: M7 (on both ends)

4 Connections 82/84: size 10: M5 (on both ends), size 14: M7 (on both ends)

5 Electrical connection

6 For mounting valves/cover plates/supply plates to manifold block: M2

7 Blanking plate

8 Supply plate, connection 1, 3 and 5: M7

10 Inscription label holder

Type	No. of valve positions	Size 10									
		B1	B2	B3	B4	B5	B6	H1	H2	H3	H4
VABM	4-24	114	76.4	74.9	61.3	47.1	32.4	116	92.6	84	71.6

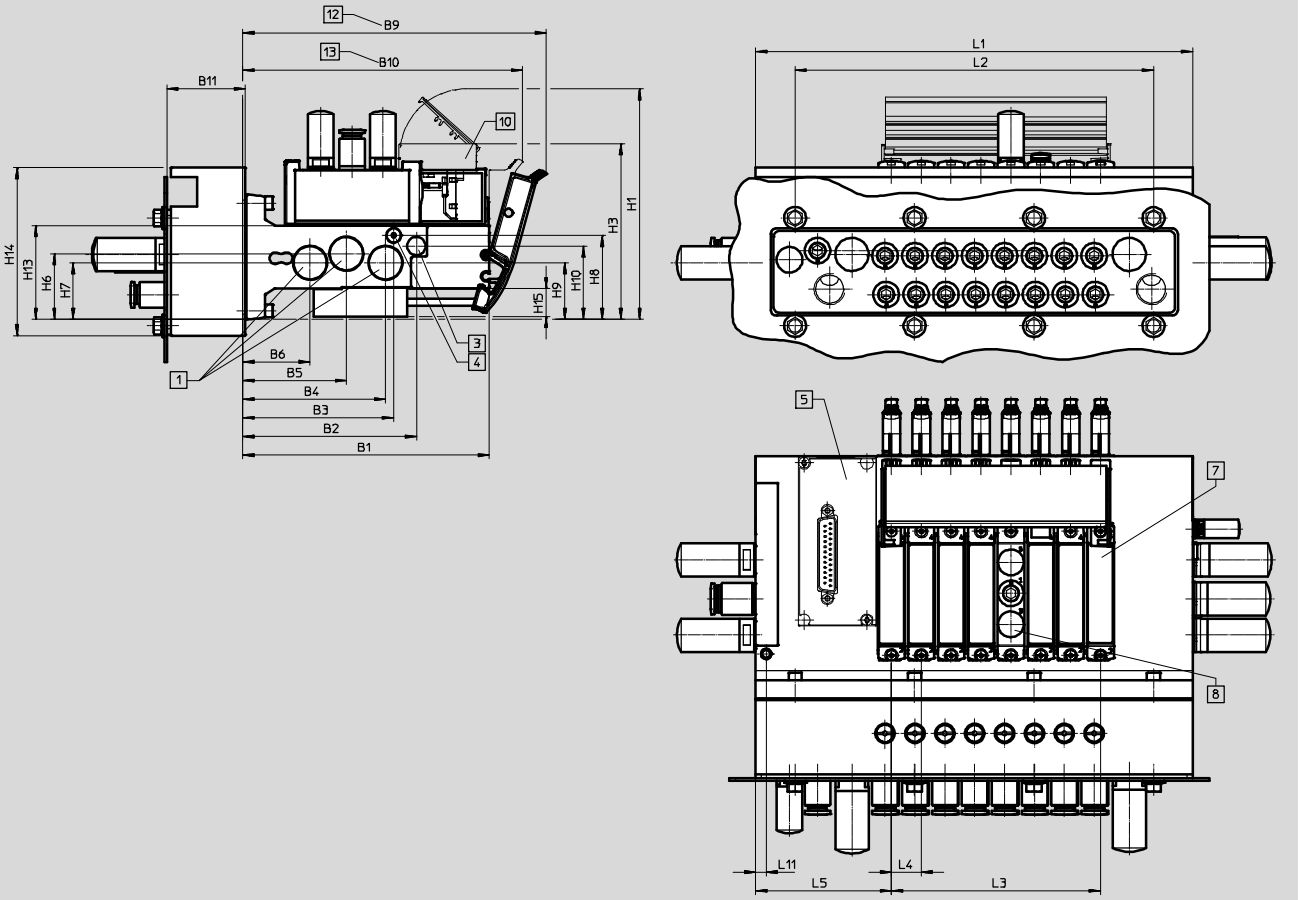
Type	No. of valve positions	Size 10									
		H5	H6	H7	H8	H9	H10	H13	L4	L5	L11
VABM	4-24	38.6	29.8	25.4	31.2	24.7	20.9	38.5	10.5	66	4.5

Type	No. of valve positions	Size 14									
		B1	B2	B3	B4	B5	B6	H1	H2	H3	H4
VABM	4-24	132	93	80.8	76.5	55.5	36.1	111.3	101.7	77.6	85.1

Type	No. of valve positions	Size 14									
		H5	H6	H7	H8	H9	H10	H13	L4	L5	L11
VABM	4-24	34.9	35.2	30.3	39.3	30.3	45	50.3	16	72.6	4.5

Dimensions – Example of control cabinet installation for valve terminal Download CAD data ➔ **www.festo.com**

Electrical outlet orientation: top, with circuit breaker function (hot swap)



1 Connections 1, 3 and 5: size 10: G1/8, G1/4, size 14: G3/8, G1/4

3 Connection 12/14: size 10: M5 (on both ends), size 14: M7 (on both ends)

4 Connections 82/84: size 10: M5 (on both ends), size 14: M7 (on both ends)

5 Electrical connection

7 Blanking plate

8 Supply plate, connection 1, 3 and 5: M7

10 Inscription label holder

12 VTUG 10: With seal and stainless steel plate
VTUG 14: With seal and stainless steel plate, hot swap 1 and 2/4

13 With seal and stainless steel plate

Type	No. of valve positions	Size 10										
		B1	B2	B3	B4	B5	B6	B9	B10	B11	H1	H3
VABM	4-24	114	76.4	74.9	61.3	47.1	32.4	142	132	–	114	82

Type	No. of valve positions	Size 10										
		H6	H7	H8	H9	H10	H13	H14	H15	L4	L5	L11
VABM	4-24	29.8	25.4	20.9	24.7	31.2	38.5	–	15	10.5	66	5.5

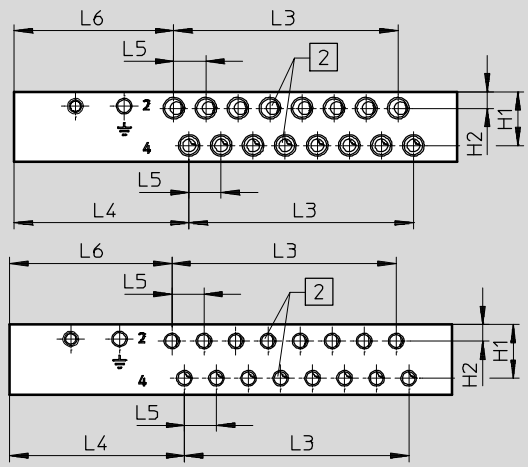
Type	No. of valve positions	Size 14										
		B1	B2	B3	B4	B5	B6	B9	B10	B11	H1	H3
VABM	4-24	132	93	80.8	76.5	55.5	36.1	163	150.4	42	123.5	93.9

Type	No. of valve positions	Size 14										
		H6	H7	H8	H9	H10	H13	H14	H15	L4	L5	L11
VABM	4-24	35.2	30.3	45	30.3	39.3	50.3	90	15	16	72.6	5.5

Number of valve positions	L1	L2	L3
VABM-L1-10HWS1-G18-4-GR	116.2	84	31.5
VABM-L1-10HWS1-G18-8-GR	158.2	126	73.5
VABM-L1-10HWS2-G18-8-GR	184	168	73.5
VABM-L1-10HWS2-G18-12-GR	226	210	115.5
VABM-L1-10HWS2-G18-16-GR	268	252	157.5
VABM-L1-10HWS2-G18-24-GR	352	336	241.5
VABM-L1-10HWS2-H-G18-8-GR	184	168	73.5
VABM-L1-10HWS2-H-G18-12-GR	226	210	115.5
VABM-L1-10HWS2-H-G18-16-GR	268	252	157.5
VABM-L1-10HWS2-H-G18-24-GR	352	336	241.5
VABM-L1-14HWS1-G14-4-GR	135	64	48
VABM-L1-14HWS1-G14-8-GR	199	128	112
VABM-L1-14HWS2-G14-8-GR	234	192	112
VABM-L1-14HWS2-G14-12-GR	298	256	176
VABM-L1-14HWS2-G14-16-GR	362	320	240
VABM-L1-14HWS2-G14-24-GR	490	448	368
VABM-L1-14HWS2-H-G14-8-GR	234	192	112
VABM-L1-14HWS2-H-G14-12-GR	298	256	176
VABM-L1-14HWS2-H-G14-16-GR	362	320	240
VABM-L1-14HWS2-H-G14-24-GR	490	448	368

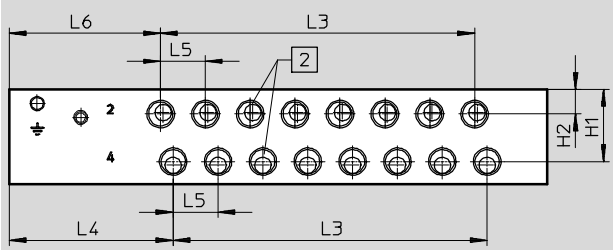
Dimensions – Manifold rail outlet orientation: front Download CAD data ➔ **www.festo.com**

Size 10, I-Port interface on top



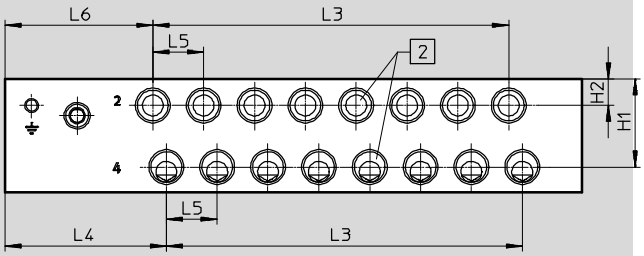
2 Connections 2 and 4

Size 14, I-Port interface on top



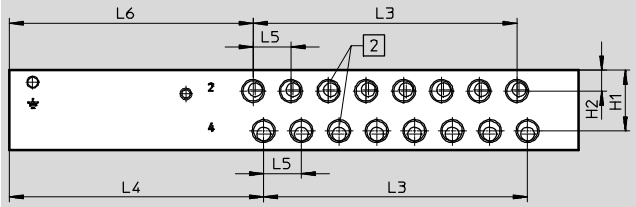
2 Connections 2 and 4

Size 18, I-Port interface on top



2 Connections 2 and 4

Size 10, 14, 18, I-Port interface on the side



2 Connections 2 and 4

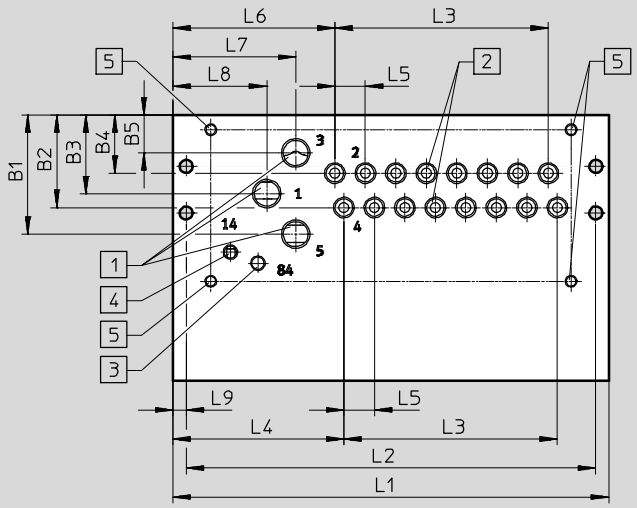
Size	Connections 2 and 4	Manifold rail with I-Port interface on top				
		H1	H2	L4	L5	L6
10	M7 thread	17.6	5.4	57.3	10.5	52.3
	M5 thread					53.2
14	Thread G1/8	25.8	8.8	58.5	16	54
18	Thread G1/4	33	10	60.3	19	55.3

Size	Connections 2 and 4	Manifold rail with I-Port interface on the side				
		H1	H2	L4	L5	L6
10	M7 thread	17.6	5.4	106.8	10.5	101.8
	M5 thread					102.7
14	Thread G1/8	25.8	8.8	108	16	103.5
18	Thread G1/4	33	10	101.8	19	96.8

Type	Number of valve positions	Size 10	Size 14	Size 18
		L3	L3	L3
VABM	4	31.5	48	57
	5	42	64	76
	6	52.5	80	95
	7	63	96	114
	8	73.5	112	133
	9	84	128	152
	10	94.5	144	171
	12	115.5	176	209
	16	157.5	240	285
	20	199.5	304	361
	24	241.5	368	437

Dimensions – Manifold rail outlet orientation underneath Download CAD data ➔ **www.festo.com**

Control cabinet installation



- Note

Dimensions of the manifold rail with I-Port interface on the side for control cabinet installation
➔ page 183

[1] Connections 1, 3 and 5: size 10: G1/8, size 14: G1/4, size 18: G3/8

[2] Connections 2 and 4: size 10: M5/M7, size 14: G1/8, size 18: G1/4

[3] Connections 82/84: size 10 and 14: M5, size 18: G1/8

[4] Connections 12/14: size 10 and 14: M5, size 18: G1/8

[5] Mounting holes, outlet orientation underneath M4x8

Type	Manifold rail with I-Port interface on top, size 10										
	B1	B2	B3	B4	B5	L4	L5	L6	L7	L8	L9
VABM	41	31.8	27	20	13	58.8	10.5	55.7	42.3	32.3	4.5

Type	Manifold rail with I-Port interface on top, size 14										
	B1	B2	B3	B4	B5	L4	L5	L6	L7	L8	L9
VABM	53.5	45.1	35.2	27.8	17	58.5	16	58.5	43	33	5

Type	Manifold rail with I-Port interface on top, size 18										
	B1	B2	B3	B4	B5	L4	L5	L6	L7	L8	L9
VABM	75	59.5	48.5	35.7	22	60.3	19	60.3	40	40	5

Type	No. of valve positions	Size 10			Size 14			Size 18		
		L1 +5	L2 +5	L3	L1	L2	L3	L1	L2	L3
VABM	4	103	94	31.5	128	118	48	139.5	129.5	57
	5	113.5	104.5	42	144	134	64	158.5	148.5	76
	6	124	115	52.5	160	150	80	177.5	167.5	95
	7	134.5	125.5	63	176	166	96	196.5	186.5	114
	8	145	136	73.5	192	182	112	215.5	205.5	133
	9	155.5	146.5	84	208	198	128	234.5	224.5	152
	10	166	157	94.5	224	214	144	253.5	243.5	171
	12	187	178	115.5	256	246	176	291.5	281.5	209
	16	229	220	157.5	320	310	240	367.5	357.5	285
	20	271	262	199.5	384	374	304	443.5	433.5	361
	24	313	304	241.5	448	438	368	519.5	509.5	437

Type	Manifold rail with I-Port interface, size 10										
	B1	B2	B3	B4	B5	L4	L5	L6	L7	L8	L9
VABM	41	31.8	27	20	13	108.3	10.5	105.2	91.8	81.8	4.5

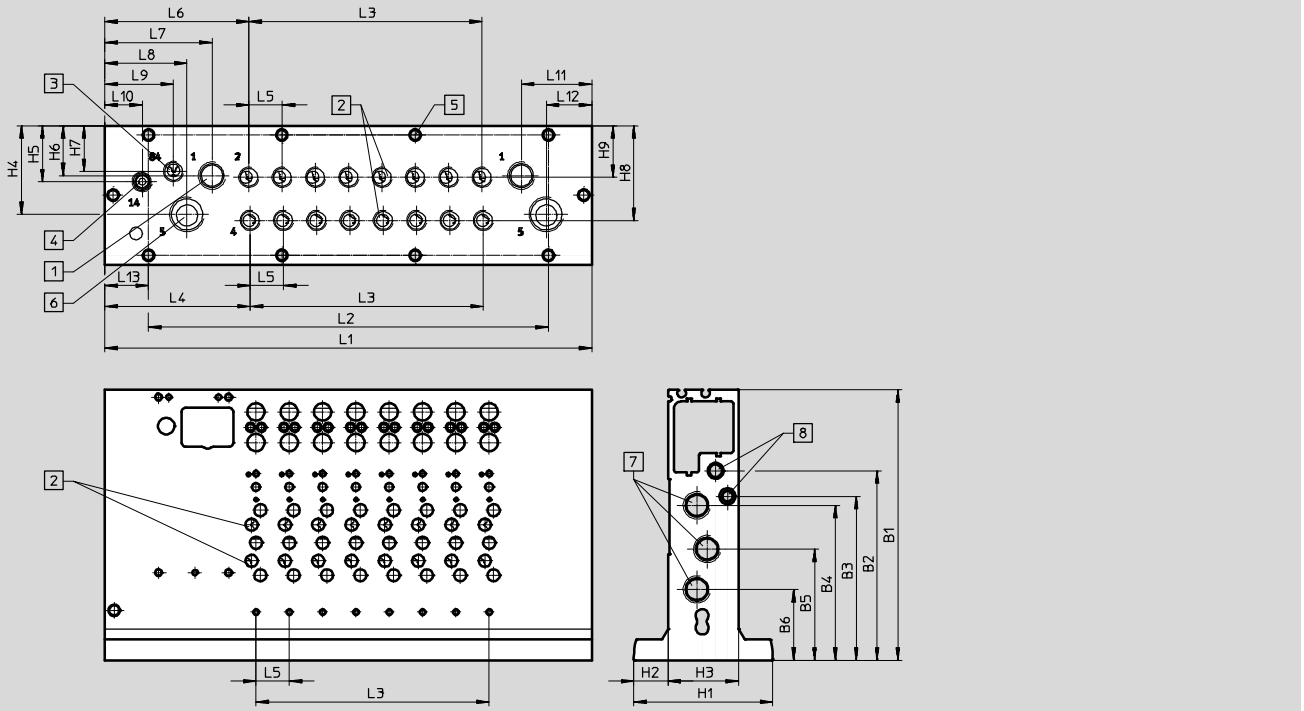
Type	Manifold rail with I-Port interface, size 14										
	B1	B2	B3	B4	B5	L4	L5	L6	L7	L8	L9
VABM	53.5	45.1	35.2	27.8	17	108	16	108	92.5	82.5	5

Type	Manifold rail with I-Port interface, size 18										
	B1	B2	B3	B4	B5	L4	L5	L6	L7	L8	L9
VABM	75	59.5	48.5	35.7	22	101.8	19	101.8	81.5	81.5	5

Type	No. of valve positions	Manifold rail with I-Port interface Size 10			Manifold rail with I-Port interface Size 14			Manifold rail with I-Port interface Size 18		
		L1 +5	L2 +5	L3	L1	L2	L3	L1	L2	L3
VABM	4	152.5	143.5	31.5	177.5	167.5	48	181	171	57
	5	163	154	42	193.5	183.5	64	200	190	76
	6	173.5	164.5	52.5	209.5	199.5	80	219	209	95
	7	184	175	63	225.5	215.5	96	238	228	114
	8	194.5	185.5	73.5	241.5	231.5	112	257	247	133
	9	205	196	84	257.5	247.5	128	276	266	152
	10	215.5	206.5	94.5	273.5	263.5	144	295	285	171
	12	236.5	227.5	115.5	305.5	295.5	176	333	323	209
	16	278.5	269.5	157.5	369.5	359.5	240	409	399	285
	20	320.5	311.5	199.5	433.5	423.5	304	485	475	361
	24	362.5	353.5	241.5	497.5	487.5	368	561	551	437

Dimensions – Manifold rail outlet orientation: front Download CAD data ➔ **www.festo.com**

Switch cabinet installation/switch cabinet installation with circuit breaker function (hot swap)



1 Connections 1, 3 and 5: size 10: G1/8, size 14: G1/4

2 Connections 2 and 4: size 10: M5/M7, size 14: G1/8

3 Connections 82/84: size 10 and 14: M5

4 Connections 12/14: size 10 and 14: M5

5 Mounting holes, outlet orientation underneath: M5

Type	Size 10															
	B1	B2	B3	B4	B5	B6	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13
VABM-L1-10HWS1	111.5	73.9	72.4	58.8	44.6	29.9	69.8	10.5	63	33.8	20	42	49.4	33.8	20	16.1
VABM-L1-10HWS2																8

Type	Size 10								
	H1	H2	H3	H4	H5	H6	H7	H8	H9
VABM-L1-10HWS1	54	15.5	23	31.9	19.8	19.8	34.3	34.5	19.1
VABM-L1-10HWS2									

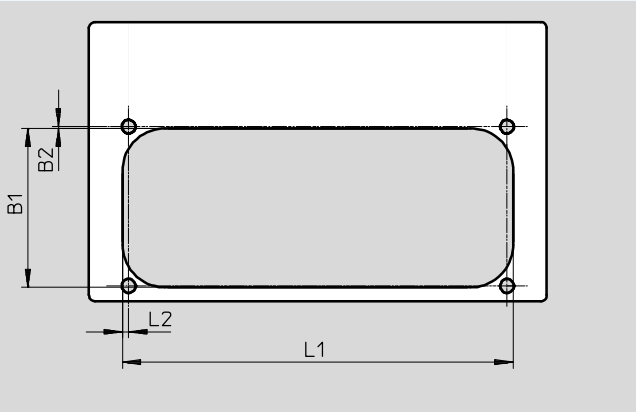
Type	Size 14															
	B1	B2	B3	B4	B5	B6	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13
VABM-L1-14HWS1	130	91	78.8	74.5	53.5	34.1	69.8	16	96.2	51.5	39.5	33	18	34	22	35.5
VABM-L1-14HWS2																21

Type	Size 14								
	H1	H2	H3	H4	H5	H6	H7	H8	H9
VABM-L1-14HWS1	66.8	16.5	33.8	42.6	26.9	24	22	45.5	24.8
VABM-L1-14HWS2									

Number of valve positions	L1	L2	L3	L13
VABM-L1-10HWS1-G18-4-GR	116.2	84	31.5	16.1
VABM-L1-10HWS1-G18-8-GR	158.2	126	73.5	16.1
VABM-L1-10HWS2-G18-8-GR	184	168	73.5	8
VABM-L1-10HWS2-G18-12-GR	226	210	115.5	8
VABM-L1-10HWS2-G18-16-GR	268	252	157.5	8
VABM-L1-10HWS2-G18-24-GR	352	336	241.5	8
VABM-L1-10HWS2-H-G18-8-GR	184	168	73.5	8
VABM-L1-10HWS2-H-G18-8-GR	226	210	115.5	8
VABM-L1-10HWS2-H-G18-8-GR	268	252	157.5	8
VABM-L1-10HWS2-H-G18-8-GR	352	336	241.5	8
VABM-L1-14HWS1-G14-4-GR	135	64	48	35.5
VABM-L1-14HWS1-G14-8-GR	199	128	112	35.5
VABM-L1-14HWS2-G14-8-GR	234	192	112	21
VABM-L1-14HWS2-G14-12-GR	298	256	176	21
VABM-L1-14HWS2-G14-16-GR	362	320	240	21
VABM-L1-14HWS2-G14-24-GR	490	448	368	21
VABM-L1-14HWS2-H-G14-8-GR	234	192	112	21
VABM-L1-14HWS2-H-G14-12-GR	298	256	176	21
VABM-L1-14HWS2-H-G14-16-GR	362	320	240	21
VABM-L1-14HWS2-H-G14-24-GR	490	448	368	21

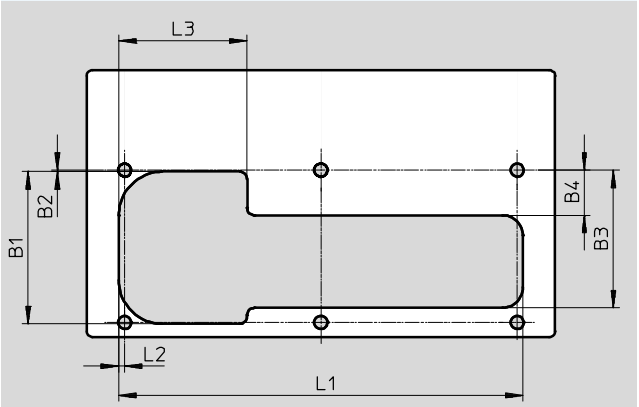
Dimensions – Recess for control cabinet installation, outlet orientation underneath, size 10

Up to 8 valves



Type	B1	B2	L1	L2
VABM-L1-10…G18-4	52.7	0.5	86	2
VABM-L1-10…G18-5			96.5	
VABM-L1-10…G18-6			107	
VABM-L1-10…G18-7			117.5	
VABM-L1-10…G18-8			128	

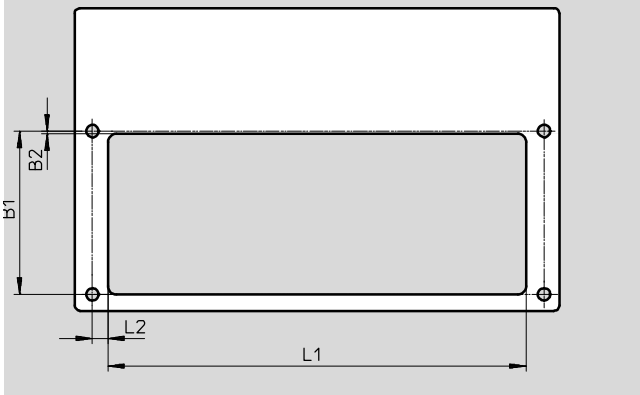
9 or more valves



Type	B1	B2	B3	B4	L1	L2	L3
VABM-L1-10…G18-9	52.7	0.5	47.2	15.4	138.5	2	44
VABM-L1-10…G18-10					149		
VABM-L1-10…G18-12					170		
VABM-L1-10…G18-16					212		
VABM-L1-10…G18-20					254		
VABM-L1-10…G18-24					296		

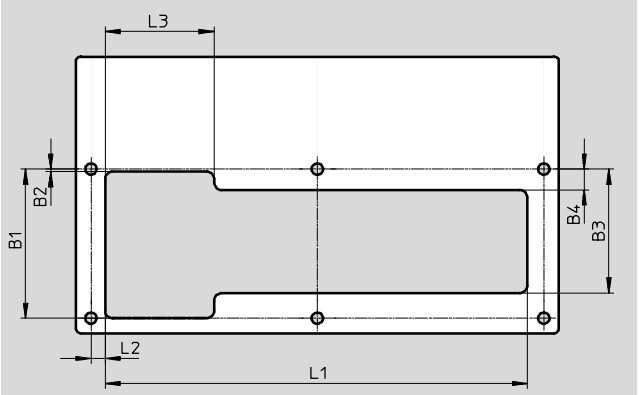
Dimensions – Recess for control cabinet installation, outlet orientation underneath, size 14

Up to 7 valves



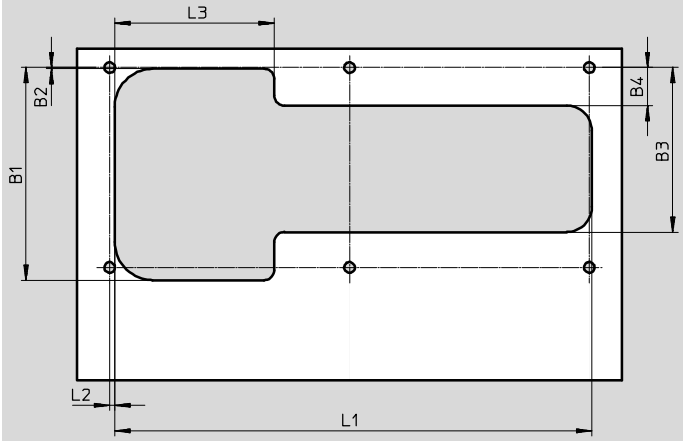
Type	B1	B2	L1	L2
VABM-L1-14…G14-4	59.3	1	103.9	5.6
VABM-L1-14…G14-5			119.9	
VABM-L1-14…G14-6			135.9	
VABM-L1-14…G14-7			151.9	

8 or more valves



Type	B1	B2	B3	B4	L1	L2	L3
VABM-L1-14…G14-8	59.3	1	49.3	8.3	167.9	5.6	43.4
VABM-L1-14…G14-9					183.9		
VABM-L1-14…G14-10					199.9		
VABM-L1-14…G14-12					231.9		
VABM-L1-14…G14-16					295.9		
VABM-L1-14…G14-20					359.9		
VABM-L1-14…G14-24					423.9		

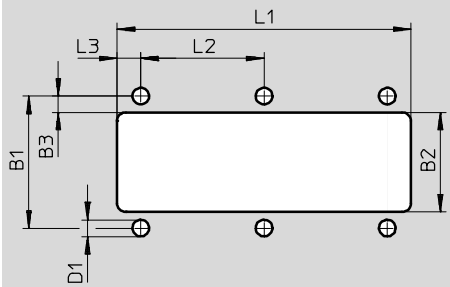
Dimensions – Recess for control cabinet installation, outlet orientation underneath, size 18



Type	B1	B2	B3	B4	L1	L2	L3
VABM-L1-18...G38-4	83.5	0.5	65	15	112.5	2	63
VABM-L1-18...G38-5					131.5		
VABM-L1-18...G38-6					150.5		
VABM-L1-18...G38-7					169.5		
VABM-L1-18...G38-8					188.5		
VABM-L1-18...G38-9					207.5		
VABM-L1-18...G38-10					226.5		
VABM-L1-18...G38-12					264.5		
VABM-L1-18...G38-16					340.5		
VABM-L1-18...G38-20					416.5		
VABM-L1-18...G38-24					492.5		

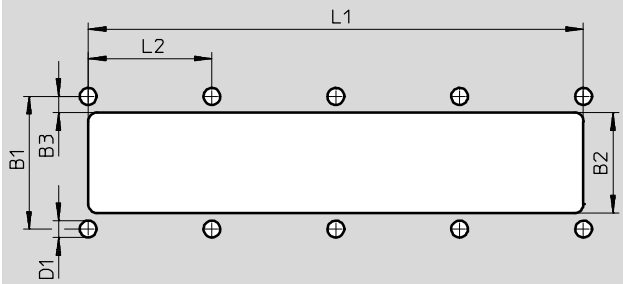
Dimensions – Recess for control cabinet installation, outlet direction: front, size 10

Single feed, up to 8-fold



Type	B1	B2	B3	D1	L1	L2	L3
VABM-L1-10HWS1-G18-4-GR	45	34	5.5	5.7	100.2	42	8.1
VABM-L1-10HWS1-G18-8-GR					143.2		

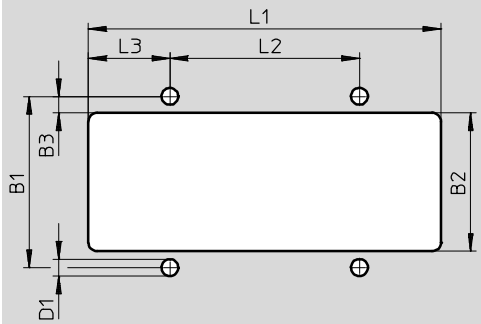
Double feed, as of 8-fold



Type	B1	B2	B3	D1	L1	L2
VABM-L1-10HWS2-...G18-8-GR	45	34	5.5	5.7	168	42
VABM-L1-10HWS2-...G18-12-GR					210	
VABM-L1-10HWS2-...G18-16-GR					252	
VABM-L1-10HWS2-...G18-24-GR					336	

Dimensions – Recess for control cabinet installation, outlet orientation: front, size 14

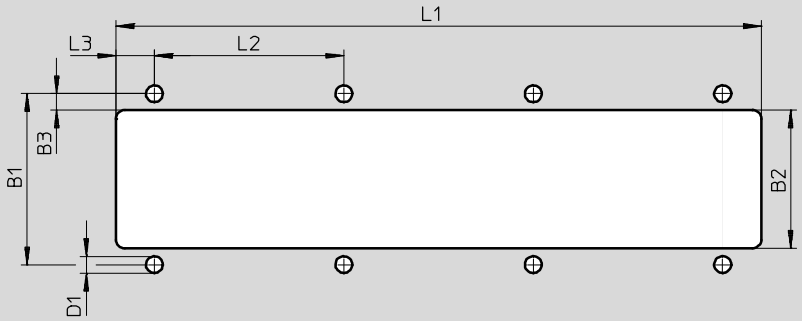
Single feed, up to 8-fold



Type	B1	B2	B3	D1	L1	L2	L3
VABM-L1-14HWS1-G14-4-GR	57.8	46.8	5.5	5.7	119	64	27.5
VABM-L1-14HWS1-G14-8-GR					183		

Dimensions – Recess for control cabinet installation, outlet orientation: front, size 14

Double feed, as of 8-fold

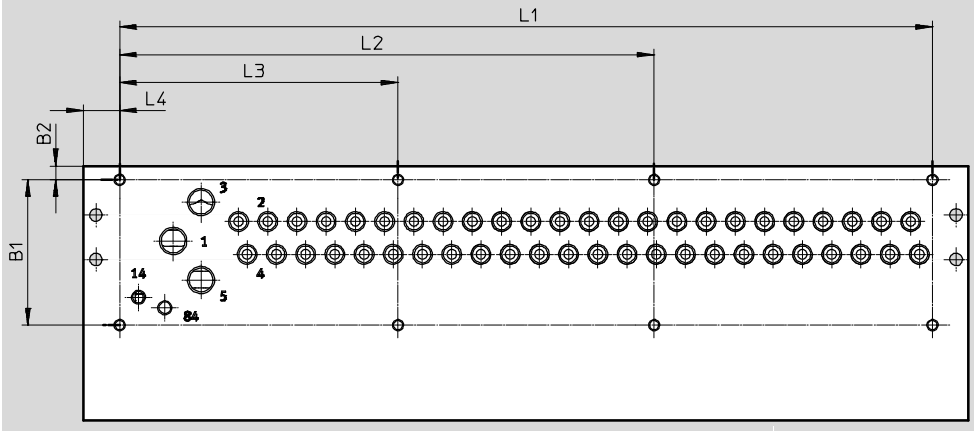


Type	B1	B2	B3	D1	L1	L2	L3
VABM-L1-14HWS2-G14-...-8-GR	57.8	46.8	5.5	5.7	218	64	13
VABM-L1-14HWS2-G14-...-12-GR					282		
VABM-L1-14HWS2-G14-...-16-GR					346		
VABM-L1-14HWS2-G14-...-24-GR					474		

Dimensions – Mounting holes for control cabinet installation, size 10

Download CAD data ➔ **www.festo.com**

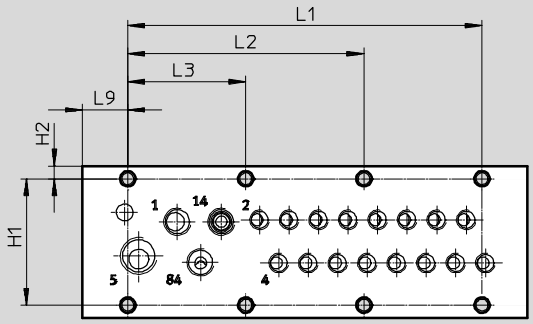
Outlet orientation underneath



Type		Outlet orientation of electrical components on top						I-Port interface on the side
		B1	B2	L1	L2	L3	L4	L4
VABM-L1-10...-G18-4	Up to 8 valves	52.2	5	82	–	–	13	62.5
VABM-L1-10...-G18-5				92.5	–	–		
VABM-L1-10...-G18-6				103	–	–		
VABM-L1-10...-G18-7				113.5	–	–		
VABM-L1-10...-G18-8				124	–	–		
VABM-L1-10...-G18-9	Up to 20 valves	52.2	5	134.5	–	67.25	13	62.5
VABM-L1-10...-G18-10				145	–	72.5		
VABM-L1-10...-G18-12				166	–	83		
VABM-L1-10...-G18-16				208	–	104		
VABM-L1-10...-G18-20				250	–	125		
VABM-L1-10...-G18-24	24 valves	52.2	5	292	192	100	13	62.5

Dimensions – Mounting holes for control cabinet installation, size 10 Download CAD data ➔ **www.festo.com**

Outlet orientation: front

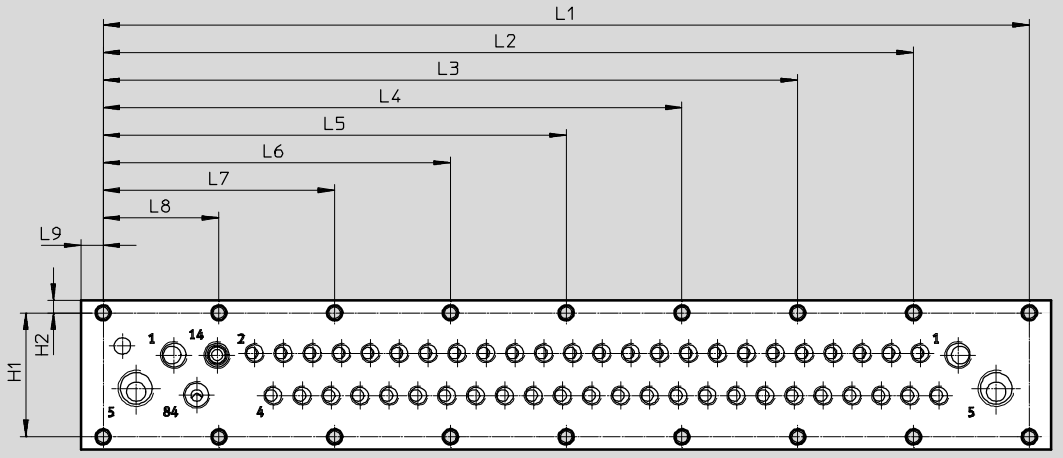


Type	H1	H2	L1	L2	L3	L9
VABM-L1-10HWS1-G18-4-GR	45	4.5	84	–	42	16.1
VABM-L1-10HWS1-G18-8-GR	45	4.5	126	84	42	16.1

Type	No. of valve positions	No. of mounting holes
VABM-L1-10HWS1-G18-4-GR	4	3
VABM-L1-10HWS1-G18-8-GR	8	4

Dimensions – Mounting holes for control cabinet installation, size 10 Download CAD data ➔ **www.festo.com**

Outlet orientation: front

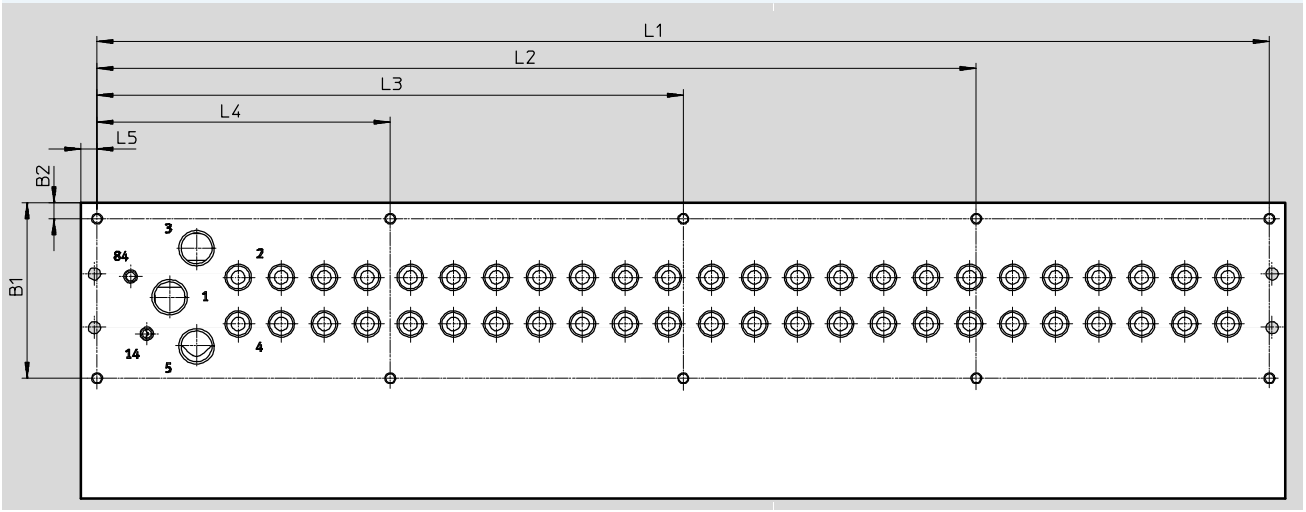


Type	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9
VABM-L1-10HWS2-...-8-GR	45	4.5	168	–	–	–	–	126	84	42	8
VABM-L1-10HWS2-...-12-GR	45	4.5	210	–	–	–	168	126	84	42	8
VABM-L1-10HWS2-...-16-GR	45	4.5	252	–	–	210	168	126	84	42	8
VABM-L1-10HWS2-...-24-GR	45	4.5	336	294	252	210	168	126	84	42	8

Type	No. of valve positions	No. of mounting holes
VABM-L1-10HWS2-...-8-GR	8	5
VABM-L1-10HWS2-...-12-GR	12	6
VABM-L1-10HWS2-...-16-GR	16	7
VABM-L1-10HWS2-...-24-GR	24	9

Dimensions – Mounting holes for control cabinet installation, size 14 Download CAD data ➔ **www.festo.com**

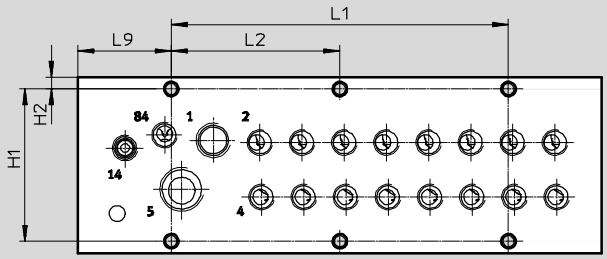
Outlet orientation underneath



Type		Outlet orientation of electrical components on top							I-Port interface on the side
		B1	B2	L1	L2	L3	L4	L5	L4
VABM-L1-14...-G14-4	Up to 8 valves	59.3	6	116	–	–	–	6	55.5
VABM-L1-14...-G14-5				132	–	–	–		
VABM-L1-14...-G14-6				148	–	–	–		
VABM-L1-14...-G14-7				164	–	–	–		
VABM-L1-14...-G14-8	8 to 10 valves	59.3	6	180	–	–	90	6	55.5
VABM-L1-14...-G14-9				196	–	–	98		
VABM-L1-14...-G14-10				212	–	–	106		
VABM-L1-14...-G14-12	12 valves and 16 valves	59.3	6	244	–	162	82	6	55.5
VABM-L1-14...-G14-16				308	–	204	104		
VABM-L1-14...-G14-20	20 valves and 24 valves	59.3	6	372	279	186	93	6	55.5
VABM-L1-14...-G14-24				436	327	218	109		

Dimensions – Mounting holes for control cabinet installation, size 14 Download CAD data ➔ **www.festo.com**

Outlet orientation: front

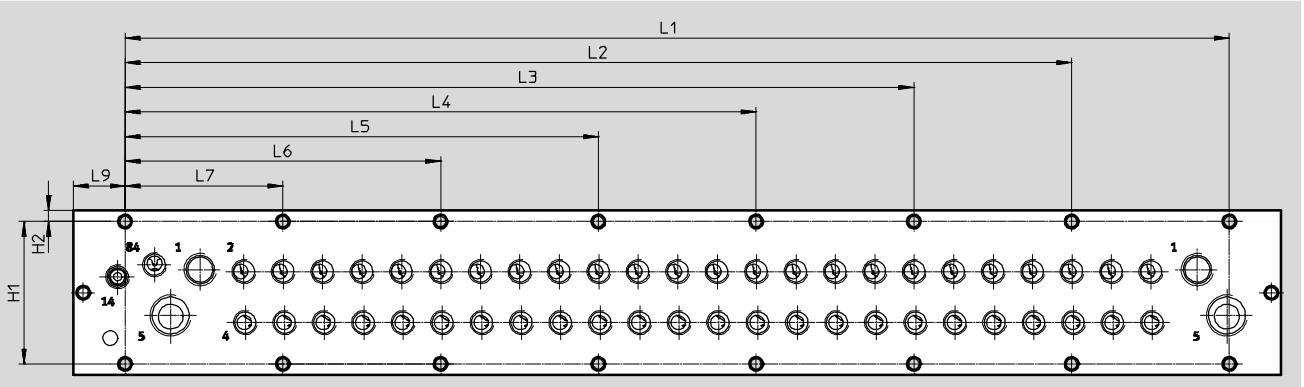


Type	H1	H2	L1	L2	L9
VABM-L1-14HWS1-G14-4-GR	57.8	4.5	64	–	35.5
VABM-L1-14HWS1-G14-8-GR	57.8	4.5	128	64	35.5

Type	No. of valve positions	No. of mounting holes
VABM-L1-14HWS1-G14-4-GR	4	2
VABM-L1-14HWS1-G14-8-GR	8	3

Dimensions – Mounting holes for control cabinet installation, size 14 Download CAD data ➔ **www.festo.com**

Outlet orientation: front

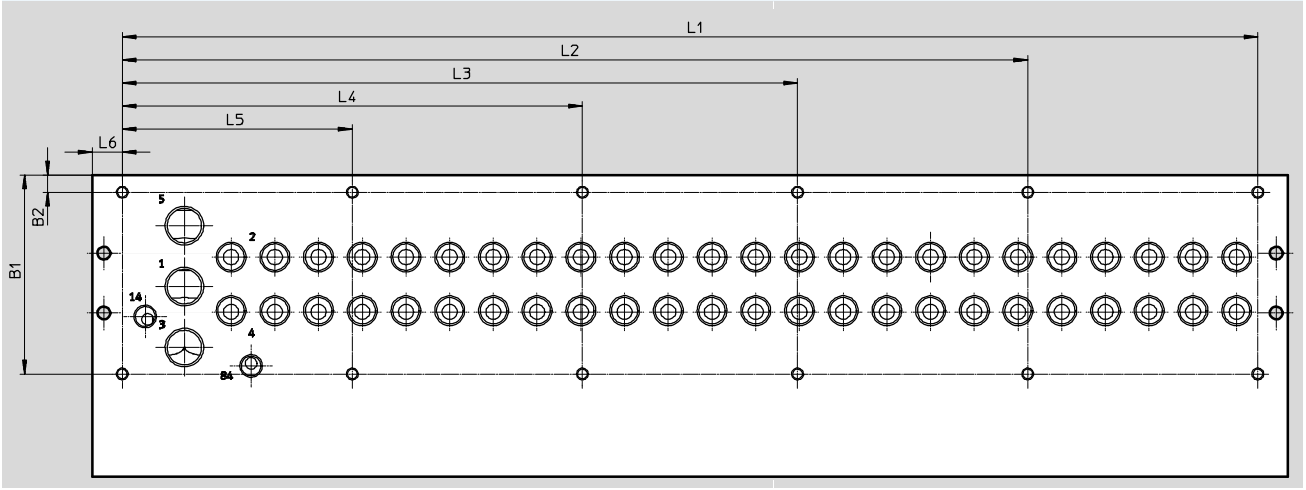


Type	H1	H2	L1	L2	L3	L4	L5	L6	L7	L9
VABM-L1-14HWS2-...-8-GR	57.8	4.5	192	–	–	–	–	128	64	21
VABM-L1-14HWS2-...-12-GR	57.8	4.5	256	–	–	–	192	128	64	21
VABM-L1-14HWS2-...-16-GR	57.8	4.5	320	–	–	256	192	128	64	21
VABM-L1-14HWS2-...-24-GR	57.8	4.5	448	384	320	256	192	128	64	21

Type	No. of valve positions	No. of mounting holes
VABM-L1-14HWS2-...-8-GR	8	4
VABM-L1-14HWS2-...-12-GR	12	5
VABM-L1-14HWS2-...-16-GR	16	6
VABM-L1-14HWS2-...-24-GR	24	8

Dimensions – Mounting holes for control cabinet installation, size 18 Download CAD data ➔ **www.festo.com**

Outlet orientation underneath

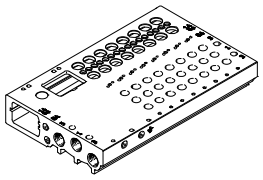


Type		Outlet orientation of electrical components							I-Port interface on the side
		B1	B2	L1	L2	L3	L4	L5	L4
VABM-L1-18...-G38-4	4 valves and 5 valves	86.5	7.5	113.5	–	–	–	–	54.5
VABM-L1-18...-G38-5				132.5	–	–	–	–	
VABM-L1-18...-G38-6	6 to 10 valves	86.5	7.5	151.5	–	–	–	75.8	54.5
VABM-L1-18...-G38-7				170.5	–	–	–	85.3	
VABM-L1-18...-G38-8				189.5	–	–	–	94.8	
VABM-L1-18...-G38-9				208.5	–	–	–	104.3	
VABM-L1-18...-G38-10				227.5	–	–	–	113.8	
VABM-L1-18...-G38-12	12 valves	86.5	7.5	265.5	–	–	165.5	100	54.5
VABM-L1-18...-G38-16	16 to 20 positions	86.5	7.5	341.5	–	–	170.8	100	54.5
VABM-L1-18...-G38-20				417.5	–	317.5	208.8	100	
VABM-L1-18...-G38-24	24 valves	86.5	7.5	493.5	393.5	293.5	200	100	54.5

Valve terminals VTUG with multi-pin plug and fieldbus connection

Ordering data

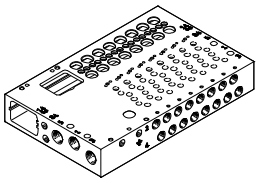
Ordering data

	Description		Part no.	Type
Manifold rail for semi in-line valve				
	Size 10 mm			
	Connections 2, 4 on the valve	4 valve positions	**573423**	**VABM-L1-10G-G18-4-GR**
		5 valve positions	**573424**	**VABM-L1-10G-G18-5-GR**
		6 valve positions	**573425**	**VABM-L1-10G-G18-6-GR**
		7 valve positions	**573426**	**VABM-L1-10G-G18-7-GR**
		8 valve positions	**573427**	**VABM-L1-10G-G18-8-GR**
		9 valve positions	**573428**	**VABM-L1-10G-G18-9-GR**
		10 valve positions	**573429**	**VABM-L1-10G-G18-10-GR**
		12 valve positions	**573430**	**VABM-L1-10G-G18-12-GR**
		16 valve positions	**573431**	**VABM-L1-10G-G18-16-GR**
		20 valve positions	**573432**	**VABM-L1-10G-G18-20-GR**
		24 valve positions	**573433**	**VABM-L1-10G-G18-24-GR**
		8 double solenoid + 8 single solenoid valves	**573927**	**VABM-L1-10G-G18-16-M-GR**
		4 bistable + 16 single solenoid valves	**573928**	**VABM-L1-10G-G18-20-M-GR**
		24 monostable valves	**573929**	**VABM-L1-10G-G18-24-M-GR**
	Size 14 mm			
	Connections 2, 4 on the valve	4 valve positions	**573489**	**VABM-L1-14G-G14-4-GR**
		5 valve positions	**573490**	**VABM-L1-14G-G14-5-GR**
		6 valve positions	**573491**	**VABM-L1-14G-G14-6-GR**
		7 valve positions	**573492**	**VABM-L1-14G-G14-7-GR**
		8 valve positions	**573493**	**VABM-L1-14G-G14-8-GR**
		9 valve positions	**573494**	**VABM-L1-14G-G14-9-GR**
		10 valve positions	**573495**	**VABM-L1-14G-G14-10-GR**
		12 valve positions	**573496**	**VABM-L1-14G-G14-12-GR**
		16 valve positions	**573497**	**VABM-L1-14G-G14-16-GR**
		20 valve positions	**573498**	**VABM-L1-14G-G14-20-GR**
		24 valve positions	**573499**	**VABM-L1-14G-G14-24-GR**
		8 double solenoid + 8 single solenoid valves	**573933**	**VABM-L1-14G-G14-16-M-GR**
		4 bistable + 16 single solenoid valves	**573934**	**VABM-L1-14G-G14-20-M-GR**
		24 monostable valves	**573935**	**VABM-L1-14G-G14-24-M-GR**
	Size 18 mm			
	Connections 2, 4 on the valve	4 valve positions	**8004899**	**VABM-L1-18G-G38-4-G**
		5 valve positions	**8004900**	**VABM-L1-18G-G38-5-G**
		6 valve positions	**8004901**	**VABM-L1-18G-G38-6-G**
		7 valve positions	**8004902**	**VABM-L1-18G-G38-7-G**
		8 valve positions	**8004903**	**VABM-L1-18G-G38-8-G**
		9 valve positions	**8004904**	**VABM-L1-18G-G38-9-G**
		10 valve positions	**8004905**	**VABM-L1-18G-G38-10-G**
		12 valve positions	**8004906**	**VABM-L1-18G-G38-12-G**
		16 valve positions	**8004907**	**VABM-L1-18G-G38-16-G**
		20 valve positions	**8004908**	**VABM-L1-18G-G38-20-G**
		24 valve positions	**8004909**	**VABM-L1-18G-G38-24-G**
		8 double solenoid + 8 single solenoid valves	**8004910**	**VABM-L1-18G-G38-16-M-G**
		4 double solenoid + 16 single solenoid valves	**8004911**	**VABM-L1-18G-G38-20-M-G**
		24 single solenoid valves	**8004912**	**VABM-L1-18G-G38-24-M-G**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Ordering data

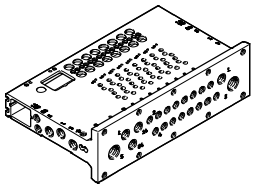
Ordering data

	Description		Part no.	Type
Manifold rail for sub-base valve				
	Size 10 mm			
	Connections 2, 4 at front	4 valve positions	**573434**	**VABM-L1-10HW-G18-4-GR**
		5 valve positions	**573435**	**VABM-L1-10HW-G18-5-GR**
		6 valve positions	**573436**	**VABM-L1-10HW-G18-6-GR**
		7 valve positions	**573437**	**VABM-L1-10HW-G18-7-GR**
		8 valve positions	**573438**	**VABM-L1-10HW-G18-8-GR**
		9 valve positions	**573439**	**VABM-L1-10HW-G18-9-GR**
		10 valve positions	**573440**	**VABM-L1-10HW-G18-10-GR**
		12 valve positions	**573441**	**VABM-L1-10HW-G18-12-GR**
		16 valve positions	**573442**	**VABM-L1-10HW-G18-16-GR**
		20 valve positions	**573443**	**VABM-L1-10HW-G18-20-GR**
		24 valve positions	**573444**	**VABM-L1-10HW-G18-24-GR**
		8 double solenoid + 8 single solenoid valves	**573930**	**VABM-L1-10HW-G18-16-M-GR**
		4 bistable + 16 single solenoid valves	**573931**	**VABM-L1-10HW-G18-20-M-GR**
		24 monostable valves	**573932**	**VABM-L1-10HW-G18-24-M-GR**
	Size 14 mm			
	Connections 2, 4 at front	4 valve positions	**573500**	**VABM-L1-14W-G14-4-GR**
		5 valve positions	**573501**	**VABM-L1-14W-G14-5-GR**
		6 valve positions	**573502**	**VABM-L1-14W-G14-6-GR**
		7 valve positions	**573503**	**VABM-L1-14W-G14-7-GR**
		8 valve positions	**573504**	**VABM-L1-14W-G14-8-GR**
		9 valve positions	**573505**	**VABM-L1-14W-G14-9-GR**
		10 valve positions	**573506**	**VABM-L1-14W-G14-10-GR**
		12 valve positions	**573507**	**VABM-L1-14W-G14-12-GR**
		16 valve positions	**573508**	**VABM-L1-14W-G14-16-GR**
		20 valve positions	**573509**	**VABM-L1-14W-G14-20-GR**
		24 valve positions	**573510**	**VABM-L1-14W-G14-24-GR**
		8 double solenoid + 8 single solenoid valves	**573936**	**VABM-L1-14W-G14-16-M-GR**
		4 bistable + 16 single solenoid valves	**573937**	**VABM-L1-14W-G14-20-M-GR**
		24 monostable valves	**573938**	**VABM-L1-14W-G14-24-M-GR**
	Size 18 mm			
	Connections 2, 4 at front	4 valve positions	**8004913**	**VABM-L1-18W-G38-4-G**
		5 valve positions	**8004914**	**VABM-L1-18W-G38-5-G**
		6 valve positions	**8004915**	**VABM-L1-18W-G38-6-G**
		7 valve positions	**8004916**	**VABM-L1-18W-G38-7-G**
		8 valve positions	**8004917**	**VABM-L1-18W-G38-8-G**
		9 valve positions	**8004918**	**VABM-L1-18W-G38-9-G**
		10 valve positions	**8004919**	**VABM-L1-18W-G38-10-G**
		12 valve positions	**8004920**	**VABM-L1-18W-G38-12-G**
		16 valve positions	**8004921**	**VABM-L1-18W-G38-16-G**
		20 valve positions	**8004922**	**VABM-L1-18W-G38-20-G**
		24 valve positions	**8004923**	**VABM-L1-18W-G38-24-G**
		8 double solenoid + 8 single solenoid valves	**8004924**	**VABM-L1-18W-G38-16-M-G**
		4 double solenoid + 16 single solenoid valves	**8004925**	**VABM-L1-18W-G38-20-M-G**
		24 single solenoid valves	**8004926**	**VABM-L1-18W-G38-24-M-G**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Ordering data

Ordering data

	Description		Part no.	Type
Manifold rail for sub-base valve, for control cabinet installation, outlet orientation: front				
	Size 10 mm			
	Connections 2, 4 at the front, single feed	4 valve positions	**8058335**	**VABM-L1-10HWS1-G18-4-GR**
		8 valve positions	**8058336**	**VABM-L1-10HWS1-G18-8-GR**
	Connections 2, 4 at the front, double feed	8 valve positions	**8058338**	**VABM-L1-10HWS2-G18-8-GR**
		12 valve positions	**8058339**	**VABM-L1-10HWS2-G18-12-GR**
		16 valve positions	**8058340**	**VABM-L1-10HWS2-G18-16-GR**
		24 valve positions	**8058341**	**VABM-L1-10HWS2-G18-24-GR**
	Size 14 mm			
	Connections 2, 4 at the front, single feed	4 valve positions	**8058342**	**VABM-L1-14HWS1-G14-4-GR**
		8 valve positions	**8058343**	**VABM-L1-14HWS1-G14-8-GR**
	Connections 2, 4 at the front, double feed	8 valve positions	**8058344**	**VABM-L1-14HWS2-G14-8-GR**
		12 valve positions	**8058345**	**VABM-L1-14HWS2-G14-12-GR**
		16 valve positions	**8058346**	**VABM-L1-14HWS2-G14-16-GR**
		24 valve positions	**8058347**	**VABM-L1-14HWS2-G14-24-GR**

Valve terminals VTUG with multi-pin plug connection

Technical data – Multi-pin plug connection

The following multi-pin plug connections are available for the valve terminal VTUG:

- Sub-D (25-pin)
- Sub-D (44-pin)
- Ribbon cable (26-pin)
- Ribbon cable (50-pin)

Electrical multi-pin plug

Each pin on the multi-pin plug can actuate exactly one solenoid coil.

If the maximum configurable number of valve positions is 24, this means that 48 valve functions can be addressed.
The valves can be switched by means of positive or negative logic (positive switching or negative switching).

Mixed operation is generally not possible; however, an exception is made for the V22 ... V25 variants with 25-pin Sub-D. With these variants, a specific range of valve positions (e.g. Com 16...19) is supplied with common voltage.

This allows these ranges to be switched with positive or negative logic and valve groups to be switched off independently of the other ranges. Mixed operation within a range is not permitted.

- Note

A double solenoid valve occupies one valve position and two pins on the multi-pin plug. This means that the number of bistable valves per manifold rail is limited.
(Pin allocation ➔ page 198)

General Technical data

Type	VAEM-L1-S-M1-25	VAEM-L1-S-M1-44	VAEM-L1-S-M3-26	VAEM-L1-S-M3-50
Number of pins	25-pin	44-pin	26-pin	50-pin
Electrical connection	Sub-D plug		Ribbon connectors	
Max. no. of valve positions	24		24	
Degree of protection to EN 60529	IP67		IP40	
Material	PA		PA	
Note on materials	RoHS-compliant		RoHS-compliant	
Approval certificate	c UL us - Recognized (OL)			
	c CSA us (OL)			
CE mark (see declaration of conformity)[1)]	To EU EMC Directive			
Corrosion resistance class CRC[2)]	2			
Weight [g]	53		45	48

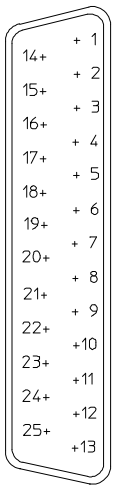
1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Valve terminals VTUG with multi-pin plug connection

Technical data – Multi-pin plug connection

Pin allocation – Sub-D plug, 25-pin

	Pin	Wire colour[1]	M1-25 (V20)								M1-25V1 (V22)	
			12x double solenoid		8x double solenoid 8x single solenoid		4x double solenoid 16x single solenoid		24x single solenoid			
	1	WH	VP0	14	VP0	14	VP0	14	VP0	14	VP0	14
	2	BN	VP0	12	VP0	12	VP0	12	VP23	14	VP0	12
	3	GN	VP1	14	VP1	14	VP1	14	VP1	14	VP1	14
	4	YE	VP1	12	VP1	12	VP1	12	VP22	14	VP1	12
	5	GY	VP2	14	VP2	14	VP2	14	VP2	14	VP2	14
	6	PK	VP2	12	VP2	12	VP2	12	VP21	14	VP2	12
	7	BU	VP3	14	VP3	14	VP3	14	VP3	14	VP3	14
	8	RD	VP3	12	VP3	12	VP3	12	VP20	14	VP3	12
	9	BK	VP4	14	VP4	14	VP4	14	VP4	14	VP4	14
	10	VT	VP4	12	VP4	12	VP19	14	VP19	14	VP4	12
	11	GY PK	VP5	14	VP5	14	VP5	14	VP5	14	VP5	14
	12	RD BU	VP5	12	VP5	12	VP18	14	VP18	14	VP5	12
	13	GN WH	VP6	14	VP6	14	VP6	14	VP6	14	VP6	14
	14	BN GN	VP6	12	VP6	12	VP17	14	VP17	14	VP6	12
	15	YE WH	VP7	14	VP7	14	VP7	14	VP7	14	VP7	14
	16	BN YE	VP7	12	VP7	12	VP16	14	VP16	14	VP7	12
	17	GY WH	VP8	14	VP8	14	VP8	14	VP8	14	VP8	14
	18	BN GY	VP8	12	VP15	14	VP15	14	VP15	14	VP8	12
	19	WH PK	VP9	14	VP9	14	VP9	14	VP9	14	VP9	14
	20	BN PK	VP9	12	VP14	14	VP14	14	VP14	14	VP9	12
	21	BU WH	VP10	14	VP10	14	VP10	14	VP10	14	Com 16 … 19	
	22	BN BU	VP10	12	VP13	14	VP13	14	VP13	14	Com 12 … 15	
	23	RD WH	VP11	14	VP11	14	VP11	14	VP11	14	Com 8 … 11	
	24	BN RD	VP11	12	VP12	14	VP12	14	VP12	14	Com 4 … 7	
	25	BK WH	Com		Com		Com	Com	Com		Com 0 … 3	

1) To IEC 60757
VP Valve position

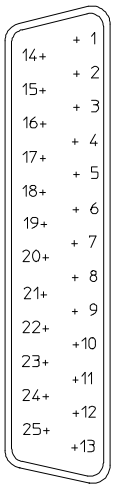
Note

A grey field means that a double solenoid valve can be used, while a white field means that only single solenoid valves can be used.

Valve terminals VTUG with multi-pin plug connection

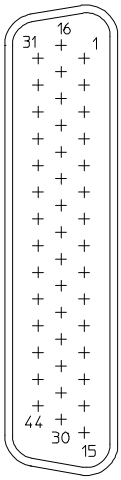
Technical data – Multi-pin plug connection

Pin allocation – Sub-D plug, 25-pin



Pin	Wire colour[1]	M1-25V2 (V23)		M1-25V3 (V24)		M1-25V4 (V25)	
1	WH	VP0	14	VP0	14	VP0	14
2	BN	VP0	12	VP0	12	VP1	14
3	GN	VP1	14	VP1	14	VP2	14
4	YE	VP1	12	VP1	12	VP3	14
5	GY	VP2	14	VP2	14	VP4	14
6	PK	VP2	12	VP2	12	VP5	14
7	BU	VP3	14	VP3	14	VP6	14
8	RD	VP3	12	VP3	12	VP7	14
9	BK	VP4	14	VP4	14	VP8	14
10	VT	VP4	12	VP5	14	VP9	14
11	GY PK	VP5	14	VP6	14	VP10	14
12	RD BU	VP5	12	VP7	14	VP11	14
13	GN WH	VP6	14	VP8	14	VP12	14
14	BN GN	VP6	12	VP9	14	VP13	14
15	YE WH	VP7	14	VP10	14	VP14	14
16	BN YE	VP7	12	VP11	14	VP15	14
17	GY WH	VP8	14	VP12	14	VP16	14
18	BN GY	VP9	14	VP13	14	VP17	14
19	WH PK	VP10	14	VP14	14	VP18	14
20	BN PK	VP11	14	VP15	14	VP19	14
21	BU WH	Com 16 ... 19		Com 16 ... 19		Com 16 ... 19	
22	BN BU	Com 12 ... 15		Com 12 ... 15		Com 12 ... 15	
23	RD WH	Com 8 ... 11		Com 8 ... 11		Com 8 ... 11	
24	BN RD	Com 4 ... 7		Com 4 ... 7		Com 4 ... 7	
25	BK WH	Com 0 ... 3		Com 0 ... 3		Com 0 ... 3	
–							
–							
–							
–							
–							
–							
–							
–							
–							
–							
–							
–							
–							
–							
–							
–							
–							
–							

Pin allocation – Sub-D plug, 44-pin



Pin	Wire colour[1]	M1-44 (V21)	
		18x double solenoid, 6x single solenoid	
1	WH	VP0	14
2	BN	VP0	12
3	GN	VP1	14
4	YE	VP1	12
5	GY	VP2	14
6	PK	VP2	12
7	BU	VP3	14
8	RD	VP3	12
9	BK	VP4	14
10	VT	VP4	12
11	GY PK	VP5	14
12	RD BU	VP5	12
13	GN WH	VP6	14
14	BN GN	VP6	12
15	YE WH	VP7	14
16	BN YE	VP7	12
17	GY WH	VP8	14
18	BN GY	VP8	12
19	WH PK	VP9	14
20	BN PK	VP9	12
21	BU WH	VP10	14
22	BN BU	VP10	12
23	RD WH	VP11	14
24	BN RD	VP11	12
25	BK WH	VP12	14
26	BK BN	VP12	12
27	GN GY	VP13	14
28	YE GY	VP13	12
29	GN PK	VP14	14
30	YE PK	VP14	12
31	GN BU	VP15	14
32	YE BU	VP15	12
33	RD GN	VP16	14
34	RD YE	VP16	12
35	BK GN	VP17	14
36	BK YE	VP17	12
37	BU GY	VP18	14
38	BU PK	VP19	14
39	RD GY	VP20	14
40	RD PK	VP21	14
41	BK GY	VP22	14
42	BK PK	VP23	14
43	BK BU	Com	
44	BK RD		

1) To IEC 60757

VP Valve position

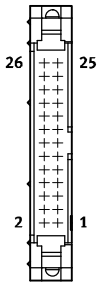
Note

A grey field means that a double solenoid valve can be used, while a white field means that only single solenoid valves can be used.

Valve terminals VTUG with multi-pin plug connection

Technical data – Multi-pin plug connection

Pin allocation – Flat cable, 26-pin

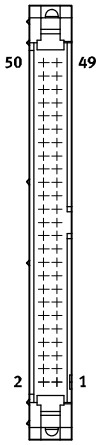


Pin	M3-26 (V20)							
	12x double solenoid		8x double solenoid 8x single solenoid		4x double solenoid 16x single solenoid		24x single solenoid	
1	VP0	14	VP0	14	VP0	14	VP0	14
2	VP0	12	VP0	12	VP0	12	VP23	14
3	VP1	14	VP1	14	VP1	14	VP1	14
4	VP1	12	VP1	12	VP1	12	VP22	14
5	VP2	14	VP2	14	VP2	14	VP2	14
6	VP2	12	VP2	12	VP2	12	VP21	14
7	VP3	14	VP3	14	VP3	14	VP3	14
8	VP3	12	VP3	12	VP3	12	VP20	14
9	VP4	14	VP4	14	VP4	14	VP4	14
10	VP4	12	VP4	12	VP19	14	VP19	14
11	VP5	14	VP5	14	VP5	14	VP5	14
12	VP5	12	VP5	12	VP18	14	VP18	14
13	VP6	14	VP6	14	VP6	14	VP6	14
14	VP6	12	VP6	12	VP17	14	VP17	14
15	VP7	14	VP7	14	VP7	14	VP7	14
16	VP7	12	VP7	12	VP16	14	VP16	14
17	VP8	14	VP8	14	VP8	14	VP8	14
18	VP8	12	VP15	14	VP15	14	VP15	14
19	VP9	14	VP9	14	VP9	14	VP9	14
20	VP9	12	VP14	14	VP14	14	VP14	14
21	VP10	14	VP10	14	VP10	14	VP10	14
22	VP10	12	VP13	14	VP13	14	VP13	14
23	VP11	14	VP11	14	VP11	14	VP11	14
24	VP11	12	VP12	14	VP12	14	VP12	14
25	Com		Com		Com	Com	Com	
26	Com		Com		Com		Com	
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								
–								

- Note

A grey field means that a double solenoid valve can be used,
while a white field means that only single solenoid valves can be used.

Pin allocation – Flat cable, 50-pin

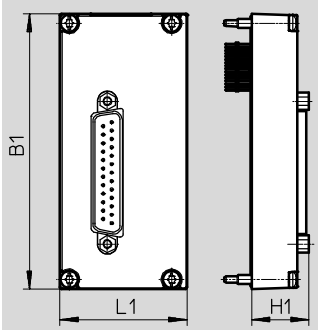


Pin	M3-50 (V26)	
1	VP0	14
2	VP0	12
3	VP1	14
4	VP1	12
5	VP2	14
6	VP2	12
7	VP3	14
8	VP3	12
9	VP4	14
10	VP4	12
11	VP5	14
12	VP5	12
13	VP6	14
14	VP6	12
15	VP7	14
16	VP7	12
17	VP8	14
18	VP8	12
19	VP9	14
20	VP9	12
21	VP10	14
22	VP10	12
23	VP11	14
24	VP11	12
25	VP12	14
26	VP12	12
27	VP13	14
28	VP13	12
29	VP14	14
30	VP14	12
31	VP15	14
32	VP15	12
33	VP16	14
34	VP16	12
35	VP17	14
36	VP17	12
37	VP18	14
38	VP18	12
39	VP19	14
40	VP19	12
41	VP20	14
42	VP20	12
43	VP21	14
44	VP21	12
45	VP22	14
46	VP22	12
47	VP23	14
48	VP23	12
49	Com	
50		

VP Valve position

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

Multi-pin plug connection, Sub-D



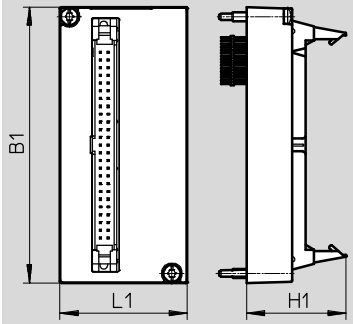
Note

Dimensions of the manifold rail with electrical connection (➔ page 173)

Type	B1	L1	H1
VAEM-L1-S-M1-...	90.5	41.9	18.9

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

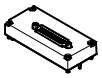
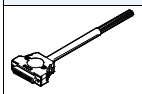
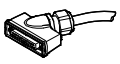
Multi-pin plug connection, ribbon cable



Note

Dimensions of the manifold rail with electrical connection (➔ page 173)

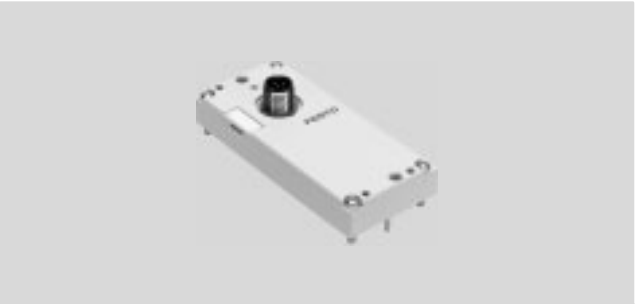
Type	B1	L1	H1
VAEM-L1-S-M3-...	90.5	41.9	32.7

Ordering data – Multi-pin plug connection					
	Description			Part no.	Type
Electrical interface, Sub-D					
	25-pin		For variant M1-25 (V20)	**573445**	**VAEM-L1-S-M1-25**
			For variant M1-25V1 (V22)	**573447**	**VAEM-L1-S-M1-25V1**
			For variant M1-25V2 (V23)	**573448**	**VAEM-L1-S-M1-25V2**
			For variant M1-25V3 (V24)	**573449**	**VAEM-L1-S-M1-25V3**
			For variant M1-25V4 (V25)	**573450**	**VAEM-L1-S-M1-25V4**
	44-pin		For variant M1-44 (V21)	**573446**	**VAEM-L1-S-M1-44**
Electrical interface, flat cable plug					
	26-pin		For variant M3-26 (V20)	**573452**	**VAEM-L1-S-M3-26**
	50-pin		For variant M3-50 (V26)	**573451**	**VAEM-L1-S-M3-50**
Connecting cable for multi-pin plug					
	Sub-D socket, straight	• 25-pin, up to 24 coils, IP40 • Open cable end, 25-wire	2.5 m	**575417**	**NEBV-S1G25-K-2.5-N-LE25-S6**
			5 m	**575418**	**NEBV-S1G25-K-5-N-LE25-S6**
			10 m	**575419**	**NEBV-S1G25-K-10-N-LE25-S6**
		• 44-pin, up to 42 coils, IP40 • Open cable end, 44-wire	2.5 m	**575113**	**NEBV-S1G44-K-2.5-N-LE44-S6**
			5 m	**575114**	**NEBV-S1G44-K-5-N-LE44-S6**
			10 m	**575115**	**NEBV-S1G44-K-10-N-LE44-S6**
	Sub-D socket, angled	• 25-pin, up to 24 coils, IP65 • Open cable end, 25-wire	2.5 m	**575423**	**NEBV-S1WA25-K-2.5-N-LE25-S9**
			5 m	**575424**	**NEBV-S1WA25-K-5-N-LE25-S9**
			10 m	**575425**	**NEBV-S1WA25-K-10-N-LE25-S9**
		• 44-pin, up to 42 coils, IP65 • Open cable end, 44-wire	2.5 m	**575420**	**NEBV-S1WA44-K-2.5-N-LE44-S9**
			5 m	**575421**	**NEBV-S1WA44-K-5-N-LE44-S9**
			10 m	**575422**	**NEBV-S1WA44-K-10-N-LE44-S9**

Valve terminals VTUG, I-Port interface/IO-Link

Technical data – I-Port interface/IO-Link

Festo-specific, standardised interface for direct connection to the fieldbus by mounting the bus node CTEU or to an IO-Link master via a cable (in IO-Link mode).



I-Port interface/IO-Link

Versions:
- I-Port interface for bus nodes (CTEU)
- IO-Link mode for direct connection to a higher-order IO-Link master

The following protocols are supported in connection with the associated CTEU bus node:
- CANopen
- DeviceNet
- PROFIBUS
- CC-LINK
- EtherCAT

The electrical supply/transmission of communication takes place via an M12 plug connector.

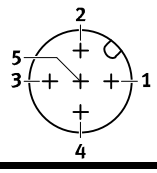
The valve terminal can be equipped with 4 ... 24 (double solenoid) valves.

General Technical data			
Communication types			IO-Link
Electrical connection			• Plug connector M12, 5-pin • A-coded • Metal thread for screening
Baud rate	COM3	[kbps]	230.4
	COM2	[kbps]	38.4
Intrinsic current consumption, logic supply PS		[mA]	30
Intrinsic current consumption, valve supply PL		[mA]	30
Max. number of solenoid coils	VAEM-L1-S-8-PT		16
	VAEM-L1-S-16-PT		32
	VAEM-L1-S-24-PT		48
Max. no. of valve positions	VAEM-L1-S-8-PT		8
	VAEM-L1-S-16-PT		16
	VAEM-L1-S-24-PT		24
Ambient temperature		[°C]	–5 ... +50
Product weight	Outlet on top	[g]	49
	Outlet on the side	[g]	100
Degree of protection to EN 60529			IP67
Approval certificate			c UL us - Recognized (OL)
			c CSA us (OL)
CE mark (see declaration of conformity)[1)]			To EU EMC Directive
Corrosion resistance class CRC[2)]			2

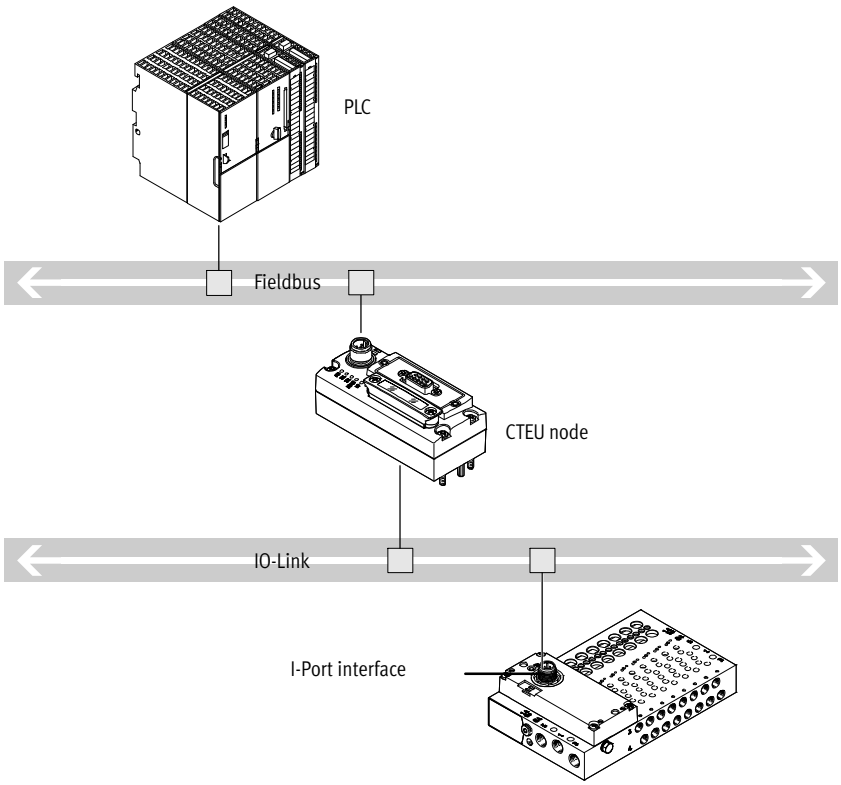
1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

2) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

LED display			
	Colour	Status	Function
Status LED X1	Red/ green	Off	No 24 V logic
		Static green	Everything OK
		Flashing green	Communication error (in the I-Port or IO-Link protocol)
		Flashing red/green	Load supply error (undervoltage or no load supply)
		Static red	Load supply error and communication error

Pin allocation – I-Port interface/IO-Link			
	Pin	Assignment	Description
	1	24 $V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
	2	24 $V_{VAL/OUT}$	Load voltage supply (valves/outputs)
	3	0 $V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
	4	C/Q	Data communication
	5	0 $V_{VAL/OUT}$	Load voltage supply (valves/outputs)

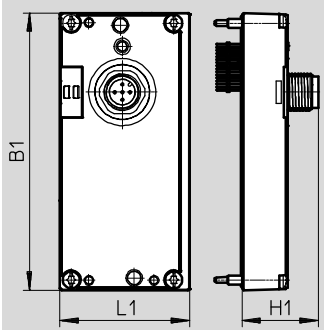
System overview – IO-Link



- Communication with the higher-order controller via fieldbus
- Use a bus node CTEU compatible with the fieldbus protocol
- Up to 64 inputs/outputs (solenoid coils), depending on the valve terminal
- No preprocessing

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

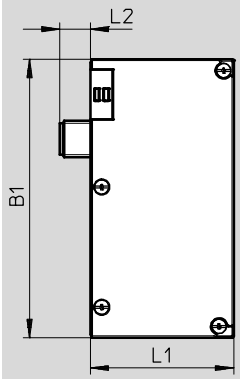
I-Port interface, outlet on top



Note

Dimensions of the manifold rail with electrical connection ➔ page 173

I-Port interface, outlet on side

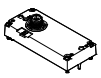


Note

Dimensions of the manifold rail with electrical connection ➔ page 173

Type	Outlet on top			Outlet on the side		
	B1	L1	H1	B1	L1	L2
VAEM-L1-S-...	91	42.5	25	91.5	47.1	10

Ordering data

	Description	Part no.	Type
Electrical interface for I-Port interface/IO-Link, outlet on top			
	Actuation of up to 8 double solenoid valve positions	**573384**	**VAEM-L1-S-8-PT**
	Actuation of up to 16 double solenoid valve positions	**573939**	**VAEM-L1-S-16-PT**
	Actuation of up to 24 double solenoid valve positions	**573940**	**VAEM-L1-S-24-PT**
Electrical interface for I-Port interface/IO-Link, outlet on the side			
	Actuation of up to 8 double solenoid valve positions	**574207**	**VAEM-L1-S-8-PTL**
	Actuation of up to 16 double solenoid valve positions	**574208**	**VAEM-L1-S-16-PTL**
	Actuation of up to 24 double solenoid valve positions	**574209**	**VAEM-L1-S-24-PTL**
Connection technology for IO-Link			
	T-Adapter M12, 5-polig für IO-Link und Lastversorgung	**171175**	**FB-TA-M12-5POL**
	Straight Plugs, M12, 5-pin, for T-adapter FB-TA	**175487**	**SEA-M12-5GS-PG7**
Inscription label for I-Port interface/IO-Link			
	40 pieces in frame	**565306**	**ASLR-C-E4**

Valve terminals VTUG, electrical connection box CAPC

Technical data – CAPC

Function

The electrical connection box CAPC enables the decentralised installation of bus nodes CTEU on a valve terminal or input modules with I-Port interface.

Area of application

- M12 connection technology (two interfaces)
- Enables the installation of valve terminals or other devices over a distance of 20 metres
- By using the accessory CAFM the sub-base can be installed on an H-rail

General Technical data		
Type		CAPC-F1-E-M12
Dimensions W x L x H	[mm]	50 x 148 x 28
Fieldbus interface		2x M12 socket, 5-pin
Operating voltage range	[V DC]	18 ... 30
Max. power supply	[A]	2
Nominal operating voltage	[V DC]	24
Product weight	[g]	85
Cable length	[m]	20

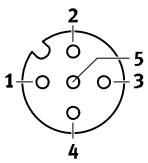
Materials	
Housing	PA reinforced
Note on materials	RoHS-compliant

Operating and environmental conditions		
Degree of protection to EN 60529		IP65, IP67
Ambient temperature	[°C]	–5 ... +50
Storage temperature	[°C]	–20 ... +70
Corrosion resistance class CRC[1)]		2
CE mark (see declaration of conformity)[2)]		In accordance with EU EMC Directive

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

2) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Pin allocation for power supply/IO-Link interfaces



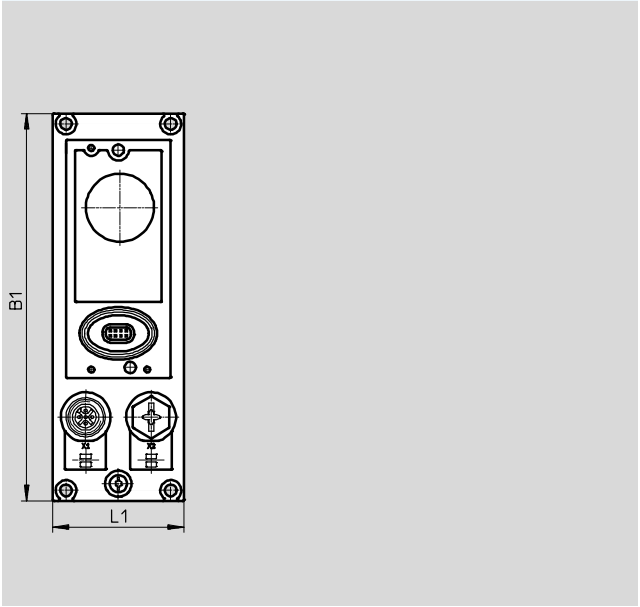
Pin	Assignment	Description
1	24 $V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
2	24 $V_{VAL/OUT}$	Load voltage supply (valves/outputs)
3	0 $V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
4	C/Q	Data communication
5	0 $V_{VAL/OUT}$	Load voltage supply (valves/outputs)
	Housing, FE	Functional earth

Valve terminals VTUG, electrical connection box CAPC

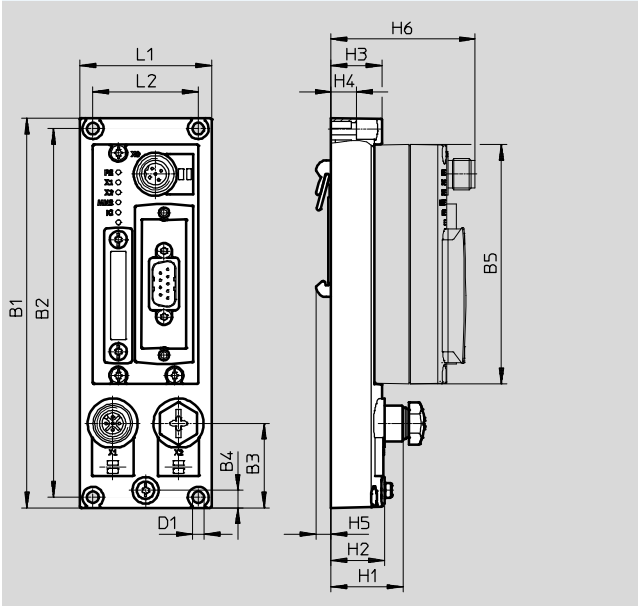
Technical data – CAPC

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

CAPC

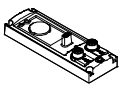
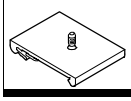


CAPC with mounted bus node CTEU-CO



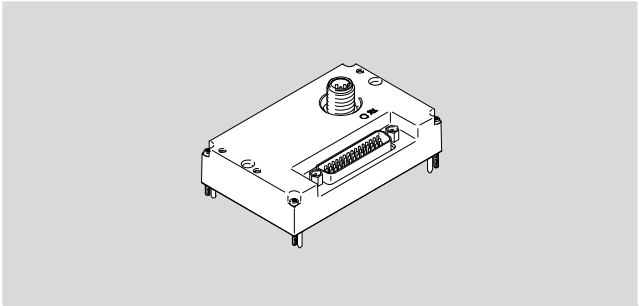
Type	B1	B2	B3	B4	B5	D1Ø	H1	H2	H3	H4	H5	H6	L1	L2
CAPC	148	140	32	6.6	91	4.4	27.3	20.3	19.3	9.6	5.7	54.8	50	40

Ordering data

		Part no.	Type
Electrical connection box			
	For connecting a second device with I-Port interface	**570042**	**CAPC-F1-E-M12**
H-rail mounting			
	For electrical connection block CAPC	**570043**	**CAFM-F1-H**

Valve terminals VTUG with interlock

Technical data – Interlock



Interlock

The interlock function enables the first 16 solenoid coils to be individually supplied externally.

This guarantees the safety-related release of these valves.

The interlock interface is established via external contacts for a single-pin connection or via safety output terminals for a double-pin connection.

General Technical data

Communication types			I-Port/IO-Link®
Number of valve positions			4...24
Max. number of solenoid coils			48
Number of interlock solenoid coils			16
Number of inputs for reading back voltage			18 (16x interlock + 2 group supply)
Mounting position			Any
Nominal flow rate		[l/min]	330
Product weight		[g]	80
Residual ripple		[V_{SS}]	4
Baud rate	COM3	[kbps]	230.4
	COM2	[kbps]	38.4
IO-Link®	Protocol		V1.0
	Connection technology		M12, A-coded
	Port type		Type B
	Number of ports		1
	Process data width OUT		6 bytes
	Process data width IN		4 bytes
	Minimum cycle time		11.5 ms (2.3 ms per frame = 2 bytes of user data)
Corrosion resistance class CRC[1)]			2

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Interlock interface

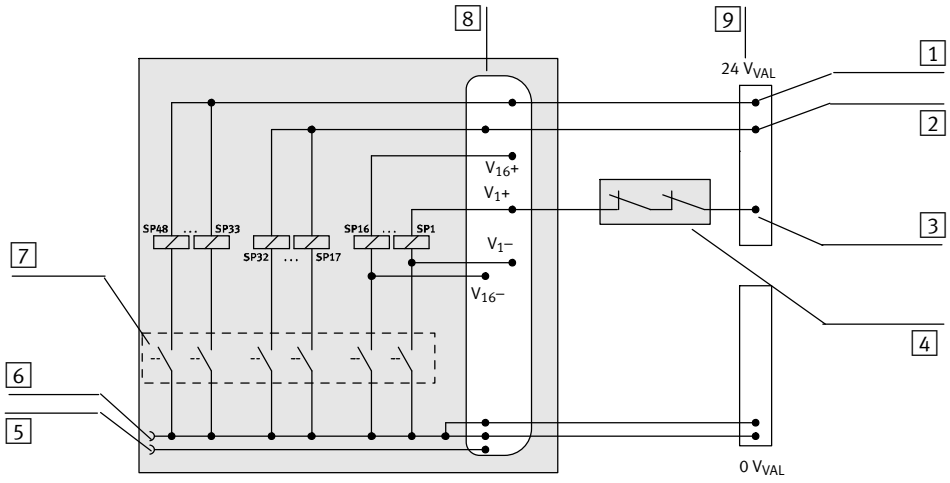
Single-pin interlock interface

- The interlock interface is established via external positive switching contacts or single-pin switching safety terminals
- 16 solenoid coils can be actuated via the interlock (Vn+)
- Solenoid coils that do not require interlock actuation can be supplied directly with 24 V from pins 1 ... 3
- Application of the respective input voltage is reported via the fieldbus as a process image

Double-pin interlock interface

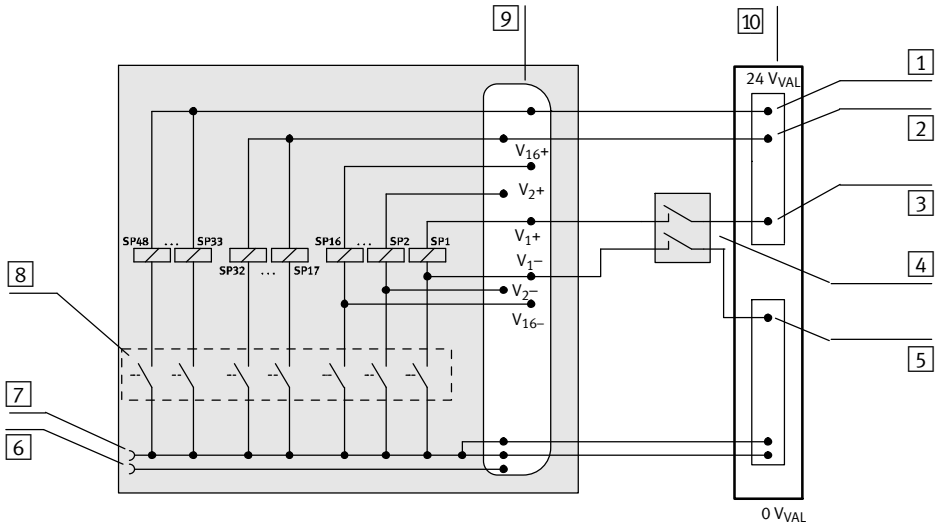
- The interlock interface is established via external positive-negative switching safety terminals
- The solenoid coils of the interlock valves are actuated via the corresponding pins in the sub-D plug connector (pins 7 ... 38)
- The solenoid coils that do not require interlock actuation can be supplied directly with 24 V (e.g. from pins 1 ... 3)
- Any difference in potential between Vn– and 0 VVAL/OUT must be below 5 V

Sample circuit diagram for a single-pin interlock interface



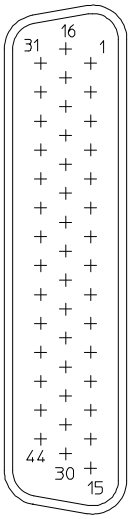
1 Power supply V+, solenoid coils 33 ..... 48 (no interlock)
2 Power supply V+, solenoid coils 17 ..... 32 (no interlock)
3 Actuation Vn+ (via interlock)
4 Interlock contacts of the output terminal
5 I-Port connection pin 2, 24 VVAL/OUT (PL), load voltage supply
6 I-Port connection pin 5, 0 VVAL/OUT (PL), load voltage supply
7 Driver, actuated via fieldbus/ I-Port
8 Interlock Sub-D connection
9 Power supply (interlock)

Sample circuit diagram for a double-pin interlock interface



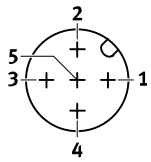
1 Power supply V+, solenoid coils 33 ..... 48 (no interlock)
2 Power supply V+, solenoid coils 17 ..... 32 (no interlock)
3 Actuation Vn+ (via interlock)
4 Interlock contacts of the output terminal
5 Actuation Vn– (via interlock)
6 I-Port connection pin 2, 24 VVAL/OUT (PL), load voltage supply
7 I-Port connection pin 5, 0 VVAL/OUT (PL), load voltage supply
8 Driver, actuated via fieldbus/ I-Port
9 Interlock Sub-D connection
10 Power supply (interlock)

Pin allocation – Interlock



Pin	Coil	Signal	pin	Coil	Signal	Pin	Coil	Signal
1	–	24 $V_{VAL/OUT}$	16	5	V5-	31	13	V13+
2	–	24 $V_{VAL/OUT}$	17	6	V6+	32	13	V13-
3	–	24 $V_{VAL/OUT}$	18	6	V6-	33	14	V14+
4	1 … 48	0 $V_{VAL/OUT}$	19	7	V7+	34	14	V14-
5	1 … 48	0 $V_{VAL/OUT}$	20	7	V7-	35	15	V15+
6	1 … 48	0 $V_{VAL/OUT}$	21	8	V8+	36	15	V15-
7	1	V1+	22	8	V8-	37	16	V16+
8	1	V1-	23	9	V9+	38	16	V16-
9	2	V2+	24	9	V9-	39	17 … 32	V17 … 32+
10	2	V2-	25	10	V10+	40	33 … 48	V33 … 48+
11	3	V3+	26	10	V10-	41	1 … 48	0 $V_{VAL/OUT}$
12	3	V3-	27	11	V11+	42	1 … 48	0 $V_{VAL/OUT}$
13	4	V4+	28	11	V11-	43	1 … 48	0 $V_{VAL/OUT}$
14	4	V4-	29	12	V12+	44	–	n.c.
15	5	V5+	30	12	V12-	Housing		FE

Pin allocation – I-Port interface/IO-Link

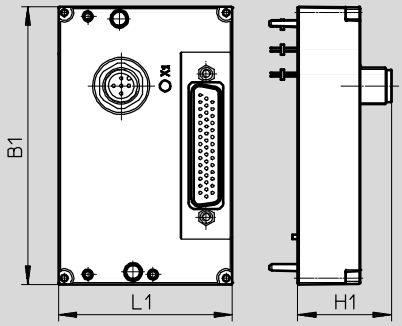


Pin	Assignment	Description
1	24 $V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
2	24 $V_{VAL/OUT}$	Load voltage supply (valves/outputs)
3	0 $V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
4	C/Q	Data communication
5	0 $V_{VAL/OUT}$	Load voltage supply (valves/outputs)
Housing, FE		Functional earth

Dimensions

Download CAD data ➔ **www.festo.com**

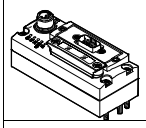
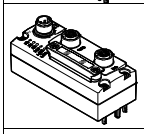
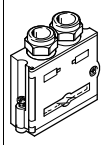
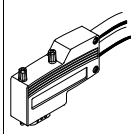
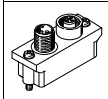
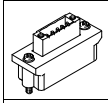
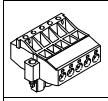
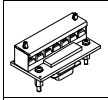
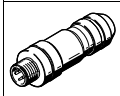
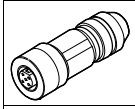
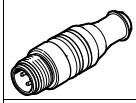
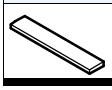
I-Port interface with interlock, outlet on top



- - Note

Dimensions of the manifold rail with electrical connection ➔ page 173

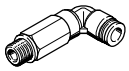
Type	Outlet on top		
	B1	L1	H1
VAEM-L1-S-24-PTK	91	57	30.8

Ordering data – CTEU				
	Description		Part no.	Type
Bus node				
	CANopen bus node		**570038**	**CTEU-CO**
	CC-Link bus node		**1544198**	**CTEU-CC**
	PROFIBUS bus node		**570040**	**CTEU-PB**
	DeviceNet bus node		**570039**	**CTEU-DN**
	EtherCAT bus node		**572556**	**CTEU-EC**
Bus connection				
	Sub-D plug, straight	For CANopen	**532219**	**FBS-SUB-9-BU-2x5POL-B**
		For CC-Link	**532220**	**FBS-SUB-9-GS-2x4POL-B**
		For PROFIBUS	**532216**	**FBS-SUB-9-GS-DP-B**
	Sub-D plug connector, angled, 9-pin	For CANopen	**533783**	**FBS-SUB-9-WS-CO-K**
		For PROFIBUS	**533780**	**FBS-SUB-9-WS-PB-K**
	M12x1, 5-pin	A-coded, for CANopen	**525632**	**FBA-2-M12-5POL**
		B-coded, for PROFIBUS	**533118**	**FBA-2-M12-5POL-RK**
	For 5-pin terminal strip for CANopen		**525634**	**FBA-1-SL-5POL**
	Terminal strip, 5-pin, for DeviceNet/CANopen		**525635**	**FBSD-KL-2x5POL**
	Screw terminal for CC-Link		**197962**	**FBA-1-KL-5POL**
	Straight plug connector, M12x1	5-pin, for CANopen	**175380**	**FBS-M12-5GS-PG9**
		4-pin, D-coded for EtherCAT	**543109**	**NECU-M-S-D12G4-C2-ET**
		5-pin, compatible with FBA-2-M12-5POL-RK for PROFIBUS	**1066354**	**NECU-M-S-B12G5-C2-PB**
	Straight socket, M12x1, 5-pin, for assembling a connecting cable compatible with FBA-2-M12-5POL-RK for PROFIBUS		**1067905**	**NECU-M-B12G5-C2-PB**
	Terminating resistor, M12, B-coded for PROFIBUS		**1072128**	**CACR-S-B12G5-220-PB**
Plug socket				
	For power supply, M12x1, 5-pin, B-coded for CANopen/DeviceNet		**538999**	**NTSD-GD-9-M12-5POL-RK**
	For power supply, M12x1, 5-pin for CC-Link, PROFIBUS, EtherCAT		**18324**	**FBSD-GD-9-5POL**
Inscription label				
	For bus node		**565306**	**ASLR-C-E4**

Valve terminals VTUG with multi-pin plug and fieldbus connection

Accessories – Valve terminal

Ordering data

	Description			Part no.	Type	PU[1]
Push-in fitting, straight						Technical data ➔ Internet: qsm
	M5 thread	For tubing ∅ 3 mm	–	★ 153313	QSM-M5-3-I	10
			Round releasing ring	133003	QSM-M5-3-I-R	10
		For tubing ∅ 4 mm	–	★ 153315	QSM-M5-4-I	10
	M5 thread	For tubing ∅ 4 mm	Round releasing ring	133004	QSM-M5-4-I-R	10
		For tubing ∅ 6 mm	Round releasing ring	133005	QSM-M5-6-I-R	10
	M7 thread	For tubing ∅ 4 mm	–	★ 153319	QSM-M7-4-I	10
		For tubing ∅ 6 mm	Round releasing ring	133007	QSM-M7-6-I-R	10
	G1/8 thread	For tubing ∅ 4 mm	–	★ 186106	QS-G1/8-4-I	10
		For tubing ∅ 6 mm	–	★ 186107	QS-G1/8-6-I	10
		For tubing ∅ 8 mm	–	★ 186109	QS-G1/8-8-I	10
	1/8 thread	For tubing ∅ 10 mm	–	★ 190647	QS-1/8-10-I	10
	1/4 thread	For tubing ∅ 8 mm	–	132280	QS-B-1/4-8-I	1
			–	★ 153016	QS-1/4-8-I	10
		For tubing ∅ 10 mm	–	132842	QS-B-1/4-10-I	1
			–	★ 153018	QS-1/4-10-I	10
		For tubing ∅ 12 mm	–	★ 190649	QS-1/4-12-I	10
	3/8 thread	For tubing ∅ 8 mm	–	130681	QS-3/8-8-50	50
		For tubing ∅ 10 mm	–	130682	QS-3/8-10-50	50
		For tubing ∅ 12 mm	–	130683	QS-3/8-12-20	20
		For tubing ∅ 16 mm	–	★ 164957	QS-3/8-16	1
Push-in fitting, angled						Technical data ➔ Internet: qsl
	M5 thread	For tubing ∅ 3 mm	–	★ 153331	QSML-M5-3	10
		For tubing ∅ 4 mm	–	★ 153333	QSML-M5-4	10
	M7 thread	For tubing ∅ 4 mm	–	★ 186352	QSML-M7-4	10
	G1/8 thread	For tubing ∅ 6 mm	–	★ 186117	QSL-G1/8-6	10
		For tubing ∅ 8 mm	–	★ 186119	QSL-G1/8-8	10
	1/8 thread	For tubing ∅ 10 mm	–	★ 190658	QSL-1/8-10	10
		For tubing ∅ 6 mm	–	130765	QSML-1/8-6-100	100
	1/4 thread	For tubing ∅ 8 mm	–	132220	QSL-B-1/4-8	1
		For tubing ∅ 8 mm	–	130732	QSL-1/4-8-50	50
		For tubing ∅ 10 mm	–	132817	QSL-B-1/4-10	1
		For tubing ∅ 10 mm	–	130733	QSL-1/4-10-50	50
		For tubing ∅ 12 mm	–	130734	QSL-1/4-12-20	20
Push-in fitting, long, angled						Technical data ➔ Internet: qsll
	M5 thread	For tubing ∅ 3 mm	–	130838	QSMLL-M5-3	10
		For tubing ∅ 4 mm	–	153339	QSMLL-M5-4	10
	M7 thread	For tubing ∅ 4 mm	–	186354	QSMLL-M7-4	10
	G1/8 thread	For tubing ∅ 6 mm	–	186128	QSLL-G1/8-6	10
		For tubing ∅ 8 mm	–	186130	QSLL-G1/8-8	10

1) Packaging unit.

Festo core product range

★ Generally ready for shipping ex works in 24 hours

☆ Generally ready for shipping ex works in 5 days

Valve terminals VTUG with multi-pin plug and fieldbus connection

Accessories – Valve terminal

Ordering data

	Description		Part no.	Type	PU[1]
Blanking plug					Technical data ➔ Internet: b
	For thread M5		★ 174308	B-M5-B	10
	For M7 thread		★ 174309	B-M7	10
	For thread G1/8		★ 3568	B-1/8	10
	For G1/4 thread		★ 3569	B-1/4	10
	For thread G1/8		196720	CDVI5.0-B-G1/8	1
	For thread G3/8		196712	CDVI5.0-B-G3/8	1
	For G1/4 thread		8035644	CDVI5.0-B-G1/4	1
Silencer					Technical data ➔ Internet: amte
	For M3 thread		1231120	AMTE-M-LH-M3	20
	For M5 thread		★ 1205858	AMTE-M-LH-M5	20
	For M7 thread		161418	UC-M7	1
	For For thread G1/8	High flow rate	★ 2307	U-1/8	1
		Lower flow rate	161419	UC-1/8	1
	For G1/4 thread	High flow rate	★ 2316	U-1/4	1
			534223	U-1/4-20	20
		Lower flow rate	165004	UC-1/4	1
			534220	UC-1/4-20	20
Blanking plate					
	Vacant position width 10 mm		573422	VABB-L1-10-T	1
	Vacant position width 14 mm		573488	VABB-L1-14-T	1
	Vacant position width 18 mm		8004897	VABB-L1-18-T	1
Supply plate					
	Supply ports 1, 3, 5, width 10 mm		573924	VABF-L1-10-P3A4-M7-T1	1
	Supply ports 1, 3, 5, width 14 mm		573925	VABF-L1-14-P3A4-G18-T1	1
	Supply ports 1, 3, 5, width 18 mm		8004898	VABF-L1-18-P3A4-G14-T1	1
Separator					
	For manifold rail, size 10, M5/M7	For sub-base valves	569994	VABD-6-B	1
		For semi in-line valves	569995	VABD-8-B	1
	For all manifold rails, size 14		569996	VABD-10-B	1
	For all manifold rails, size 18		569997	VABD-12-B	1
Cover cap for manual override					
	Covered		540898	VMPA-HBV-B	10
	Non-detenting		540897	VMPA-HBT-B	10
	Detenting (without accessories)		8002234	VAMC-L1-CD	10
Inscription label holder					Technical data ➔ Internet: aslr
	Holder for an inscription label and covering the mounting screw and manual override		570818	ASLR-D-L1	10

Festo core product range

★ Generally ready for shipping ex works in 24 hours

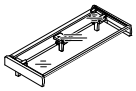
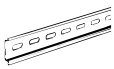
☆ Generally ready for shipping ex works in 5 days

Ordering data

	Description			Part no.	Type	PE[1]
Check valve						
	For manifold rails VABM-L1-10...	For blocking the flow in the event of back pressure in duct 3 and 5		**8047364**	**VABF-L1-10H-H2**	**10**
	For manifold rails VABM-L1-14...			**8047365**	**VABF-L1-14-H2**	**10**
Flow restrictor						
	For manifold rails VABM-L1-10...	For setting the flow rate for pressurisation and exhausting (for threaded connection M5)	Nominal size: 0.5 mm	**8025709**	**VFFG-T-M5-5**	**10**
			Nominal size: 0.6 mm	**8025710**	**VFFG-T-M5-6**	**10**
			Nominal size: 0.7 mm	**8025711**	**VFFG-T-M5-7**	**10**
			Nominal size: 0.85 mm	**8025712**	**VFFG-T-M5-8**	**10**
			Nominal size: 1.05 mm	**8025713**	**VFFG-T-M5-10**	**10**
			Nominal size: 1.2 mm	**8025714**	**VFFG-T-M5-12**	**10**
			Nominal size: 1.55 mm	**8025715**	**VFFG-T-M5-15**	**10**
		For setting the flow rate for pressurisation and exhausting (for ⌀ 4 mm)	Nominal size: 0.5 mm	**8047346**	**VFFG-T-F4-5**	**10**
			Nominal size: 0.6 mm	**8047347**	**VFFG-T-F4-6**	**10**
			Nominal size: 0.7 mm	**8047348**	**VFFG-T-F4-7**	**10**
			Nominal size: 0.85 mm	**8047349**	**VFFG-T-F4-8**	**10**
			Nominal size: 1.05 mm	**8047350**	**VFFG-T-F4-10**	**10**
			Nominal size: 1.2 mm	**8047351**	**VFFG-T-F4-12**	**10**
			Nominal size: 1.55 mm	**8047352**	**VFFG-T-F4-15**	**10**
	For manifold rails VABM-L1-14...	For setting the flow rate for pressurisation and exhausting (for ⌀ 5.8 mm)	Nominal size: 0.7 mm	**8047353**	**VFFG-T-F6-7**	**10**
			Nominal size: 0.85 mm	**8047354**	**VFFG-T-F6-8**	**10**
			Nominal size: 1.05 mm	**8047355**	**VFFG-T-F6-10**	**10**
			Nominal size: 1.15 mm	**8047356**	**VFFG-T-F6-11**	**10**
			Nominal size: 1.4 mm	**8047357**	**VFFG-T-F6-14**	**10**
			Nominal size: 1.6 mm	**8047358**	**VFFG-T-F6-16**	**10**
			Nominal size: 1.8 mm	**8047359**	**VFFG-T-F6-18**	**10**
Restrictor set						
	For manifold rails VABM-L1-10...	Two of each size, for threaded connection M5		**8025716**	**VFFG-T-M5-A-V1**	**14**
		Two of each size, for ∅ 4 mm		**8062200**	**VFFG-T-F4-A-V1**	**14**
	For manifold rails VABM-L1-14...	Two of each size, for ∅ 5.8 mm		**8062201**	**VFFG-T-F6-A-V1**	**14**

1) Packaging unit.

Ordering data

	Description		Part no.	Type
Inscription label holder for valve terminal				
	Size 10	For 4 valve positions	**573453**	**ASCF-H-L1-10-4V**
		For 5 valve positions	**573454**	**ASCF-H-L1-10-5V**
		For 6 valve positions	**573455**	**ASCF-H-L1-10-6V**
		For 7 valve positions	**573456**	**ASCF-H-L1-10-7V**
		For 8 valve positions	**573457**	**ASCF-H-L1-10-8V**
		For 9 valve positions	**573458**	**ASCF-H-L1-10-9V**
		For 10 valve positions	**573459**	**ASCF-H-L1-10-10V**
		For 12 valve positions	**573460**	**ASCF-H-L1-10-12V**
		For 16 valve positions	**573461**	**ASCF-H-L1-10-16V**
		For 20 valve positions	**573462**	**ASCF-H-L1-10-20V**
		For 24 valve positions	**573463**	**ASCF-H-L1-10-24V**
	Size 14	For 4 valve positions	**573511**	**ASCF-H-L1-14-4V**
		For 5 valve positions	**573512**	**ASCF-H-L1-14-5V**
		For 6 valve positions	**573513**	**ASCF-H-L1-14-6V**
		For 7 valve positions	**573514**	**ASCF-H-L1-14-7V**
		For 8 valve positions	**573515**	**ASCF-H-L1-14-8V**
		For 9 valve positions	**573516**	**ASCF-H-L1-14-9V**
		For 10 valve positions	**573518**	**ASCF-H-L1-14-10V**
		For 12 valve positions	**573519**	**ASCF-H-L1-14-12V**
		For 16 valve positions	**573520**	**ASCF-H-L1-14-16V**
		For 20 valve positions	**573521**	**ASCF-H-L1-14-20V**
		For 24 valve positions	**573522**	**ASCF-H-L1-14-24V**
	Size 18	For 4 valve positions	**8004928**	**ASCF-H-L1-18-4V**
		For 5 valve positions	**8004929**	**ASCF-H-L1-18-5V**
		For 6 valve positions	**8004930**	**ASCF-H-L1-18-6V**
		For 7 valve positions	**8004931**	**ASCF-H-L1-18-7V**
		For 8 valve positions	**8004932**	**ASCF-H-L1-18-8V**
		For 9 valve positions	**8004933**	**ASCF-H-L1-18-9V**
		For 10 valve positions	**8004934**	**ASCF-H-L1-18-10V**
		For 12 valve positions	**8004935**	**ASCF-H-L1-18-12V**
		For 16 valve positions	**8004936**	**ASCF-H-L1-18-16V**
		For 20 valve positions	**8004937**	**ASCF-H-L1-18-20V**
		For 24 valve positions	**8004938**	**ASCF-H-L1-18-24V**
H-rail				Technical data ➔ Internet: nrh
	To EN 60715, 35 x 7.5 (WxH)	Length 2 m	**35430**	**NRH-35-2000**
H-rail mounting				Technical data ➔ Internet: vame
	Use the following screws for mounting: Size 10: DIN 912: M4x30 Size 14: DIN 912: M4x40 Size 18: DIN 912: M5x50		★ **569998**	**VAME-T-M4**

Festo core product range

★ Generally ready for shipping ex works in 24 hours

☆ Generally ready for shipping ex works in 5 days