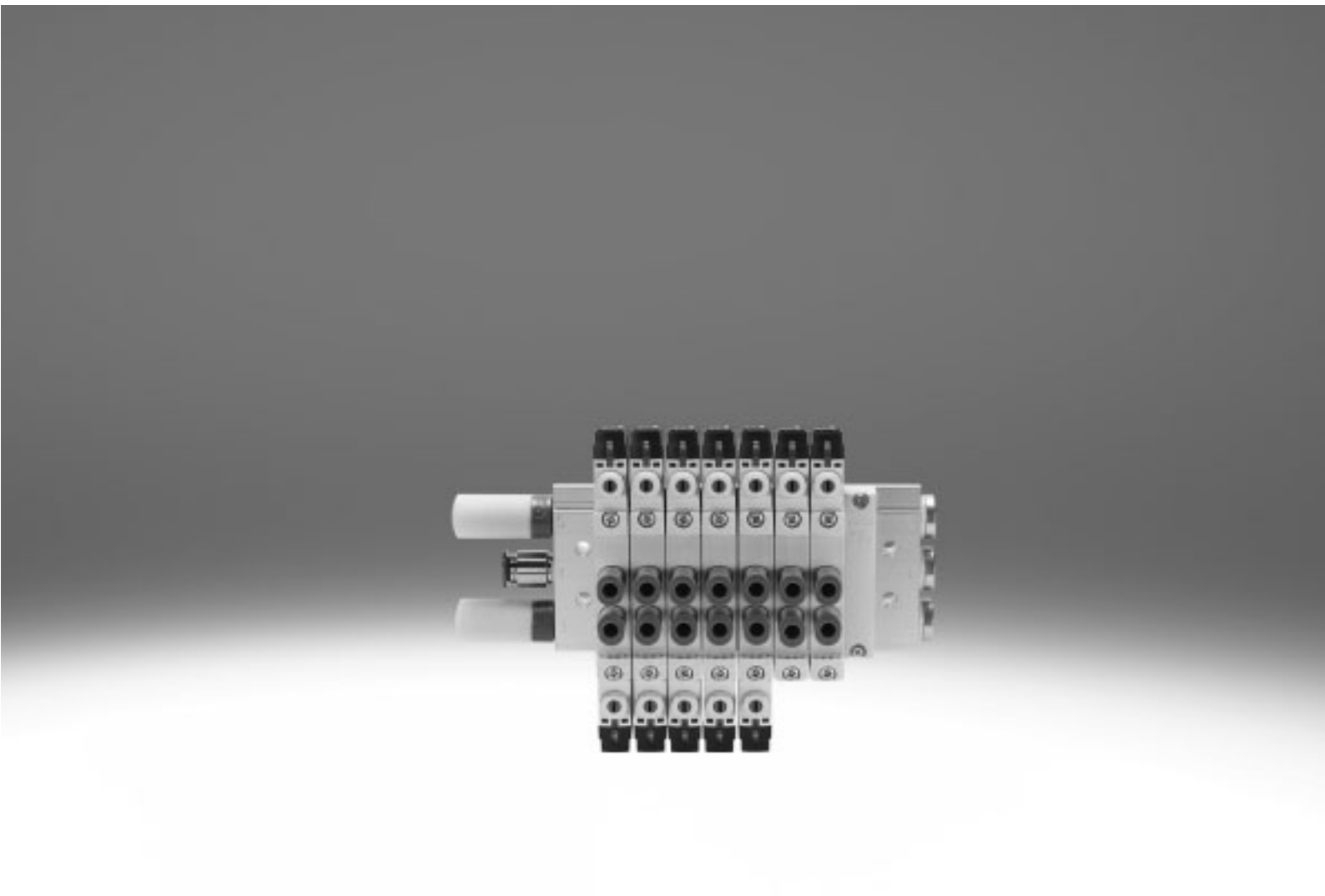
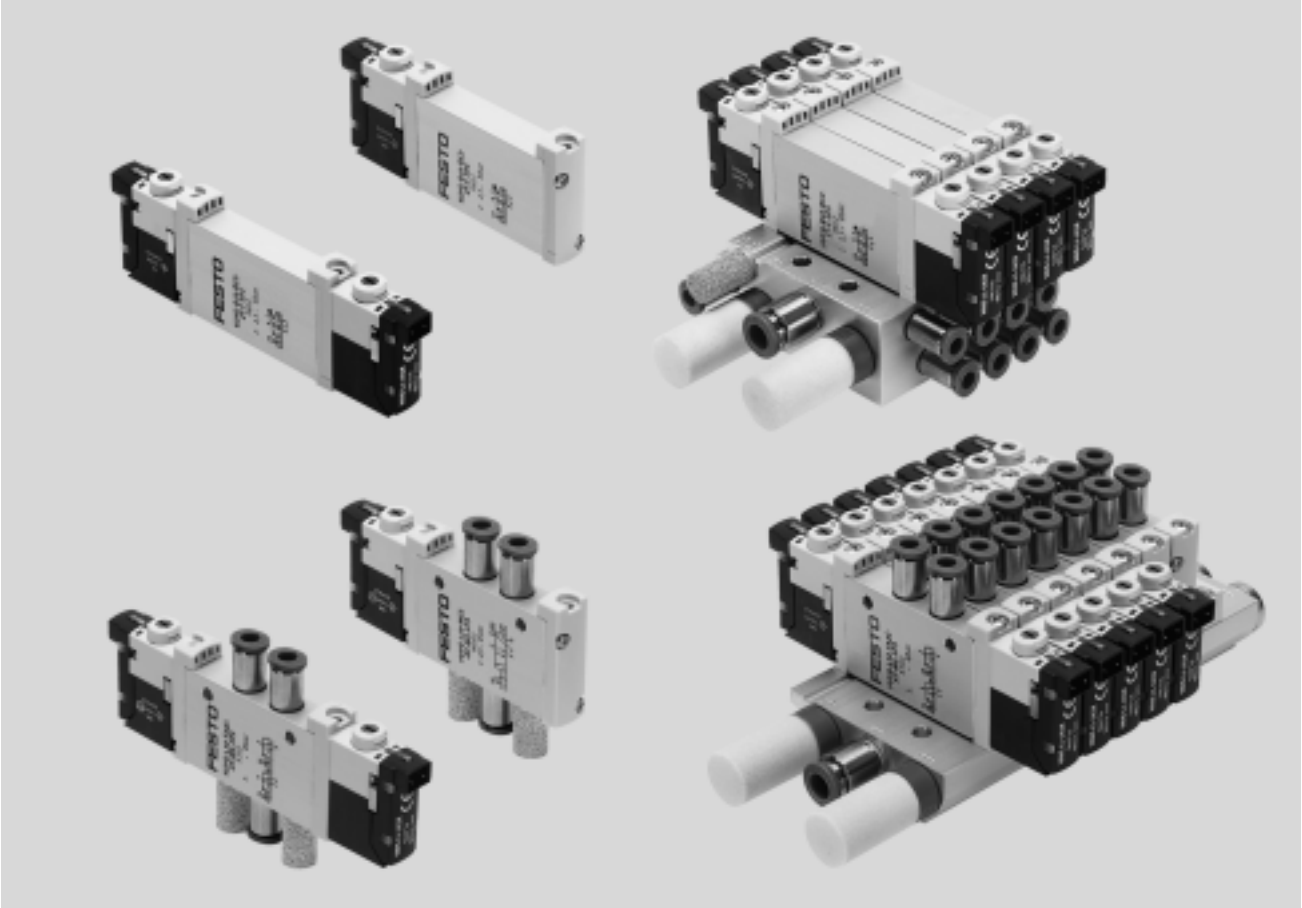
Solenoid valves VUVG/valve terminals VTUG

FESTO



Solenoid valves VUVG

Key features



Innovative

- Both internal and external pilot air supply can be used for manifolds with sub-base valves
- Connection technology easy to change via the E-box
- Max. pressure 10 bar

Versatile

- Wide range of valve functions
- Choice of quick plug connectors
- In-line valves can be used as individual valves or manifold valves
- M5 and M7 in-line valves can be combined on one manifold rail
- Identical sub-base valves for M5 or M7 manifold rail
- Manifolds with pressure zones
- IP40, IP65

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 thanks to captive screws and seal
- Connection technology easy to change via the E-box
- Inscription label 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

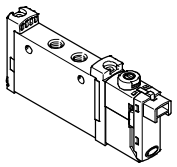
- Individual electrical connection

➔ Internet: vtug

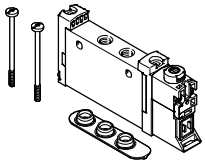
Solenoid valves VUVG

Key features – Pneumatic components

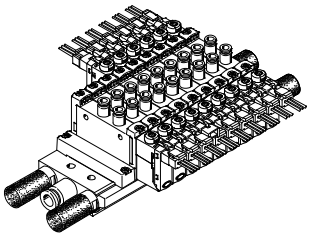
Individual valves and valve manifolds



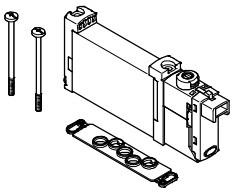
In-line valve VUVG-L as individual valve



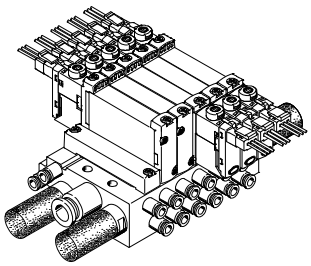
In-line valve VUVG-S for manifold assembly



Valve manifold VTUG consisting of in-line valves VUVG-S

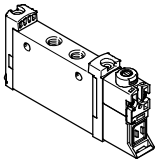


Sub-base valve VUVG-B for manifold assembly



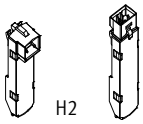
Valve manifold VTUG consisting of sub-base valves VUVG-B

Basic valves VUVG



- Width 10, 14 and 18 mm
- In-line valves
- Sub-base valves
- 2x3/2-way, 5/2-way and 5/3-way valves

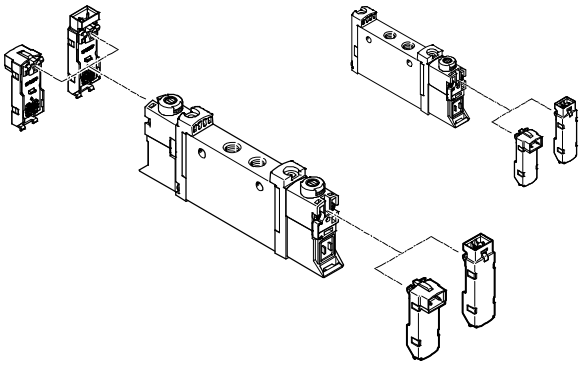
E-boxes

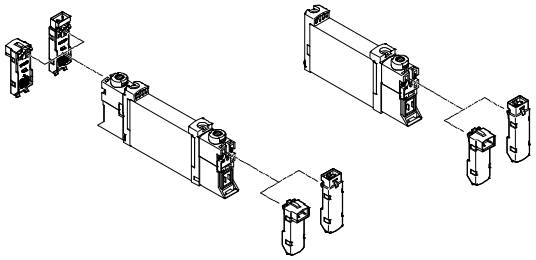


H2 H3

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

Basic valve and E-box combinations





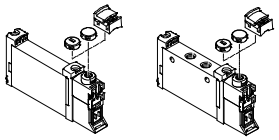
- Note

More E-boxes ➔ page 82

Solenoid valves VUVG

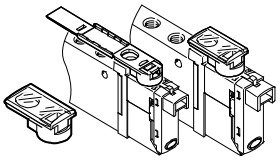
Key features – Pneumatic components

Cover caps for manual override



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

Inscription label holder



- The inscription label holder can be used in place of the slotted cover cap
- The hinged inscription label holder covers the mounting screw and the manual override

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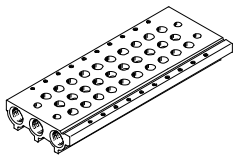
➔ Internet: vtug

Manifold rail for in-line valves

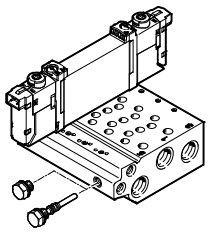


- For in-line valves M3, M5, M7, G⅛ and G¼
- For 2x3/2-way, 5/2-way and 5/3-way valves
- 2 to 10 and 12, 14, 16 valve positions

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

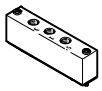


- For sub-base valves 10A, 10, 14 and 18
- Manifold rail with M5, M7, ⅛ and ¼ working ports
- For 2x3/2-way, 5/2-way and 5/3-way valves
- 2 to 10, 12, 14 and 16 valve positions
- The sub-base valves always have external pilot air. The pilot air is set via the manifold rail. A short and a long blanking plug are included with the manifold rail for this purpose.

Blanking plate for vacant position

- Vacant position cover

Supply plate



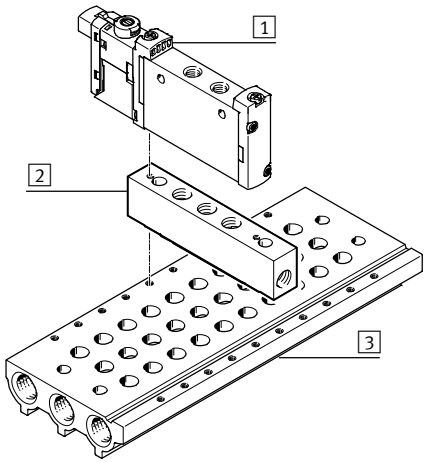
- For additional air supply and exhaust via a valve position

Separator for pressure zones

- For creating multiple pressure zones in a valve manifold

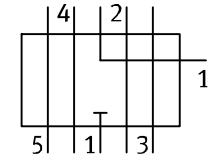
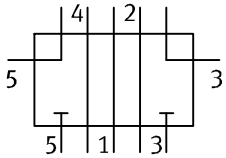
Vertical pressure supply plate

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

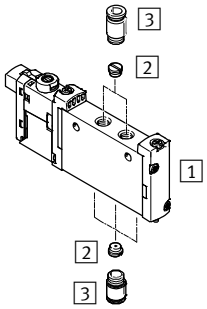


1 Semi in-line valve VUVG
2 Vertical pressure supply plate
3 Manifold rail

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	Width		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.

Flow control valve



1 Valves VUVG with individual electrical connection
2 Restrictor
3 Fitting

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

Sub-base valve, individual electrical connection: the restrictor can be fitted in port 2/4.

Creating pressure zones and separating exhaust air

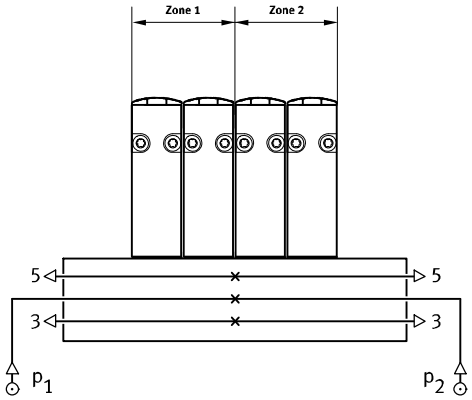
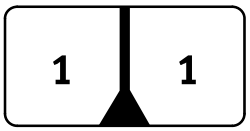
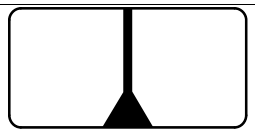
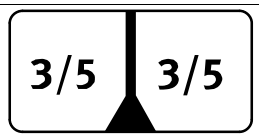
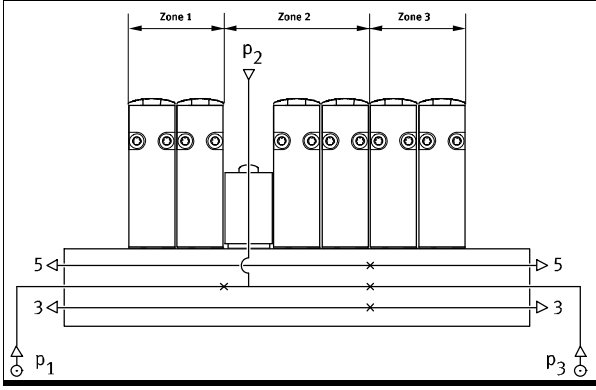
Compressed air is supplied and exhausted via the manifold rail and via supply plates.
The position of the supply plates and duct separations can be freely selected with the VUVG.

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

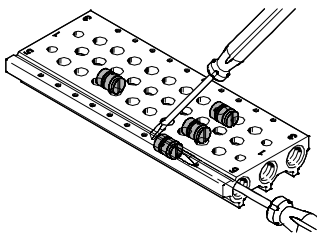
Pressure zone separation can be used for the following ducts:
- Duct 1
- Duct 3
- Duct 5

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 with pilot air supply (duct 12/14)

Duct separation

	Description
	The pressure zones can be freely configured with the VUVG. 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 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.

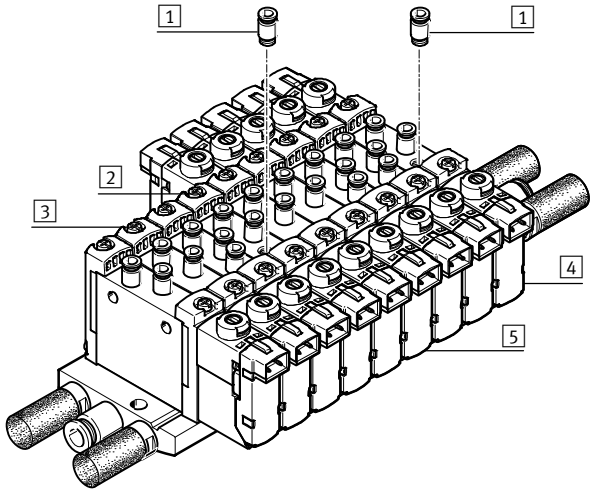
External pilot air supply

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 port

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

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



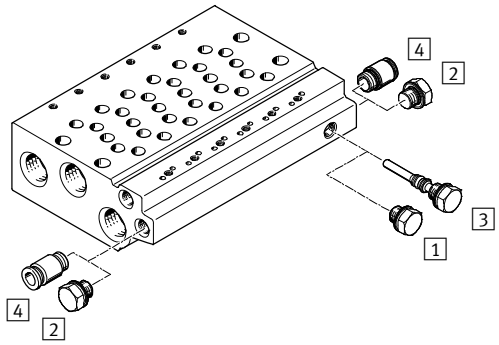
1 QS fitting for external pilot air at port 12/14
2 Single solenoid valve with external pilot air supply
3 Single solenoid valve with internal pilot air supply
4 Double solenoid valve with external pilot air supply
5 Double solenoid valve with internal pilot air supply

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 external 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 QS fitting for duct 12/14 with external pilot air

The manifold rails for sub-base valves 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.

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 energy for the return movement is obtained from 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.

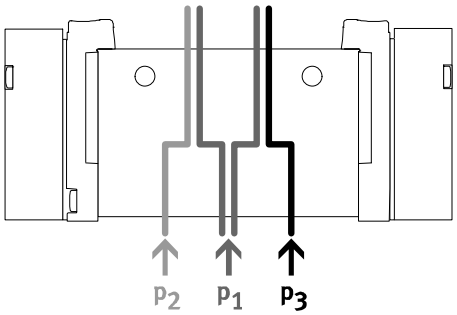
Reverse operation

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.

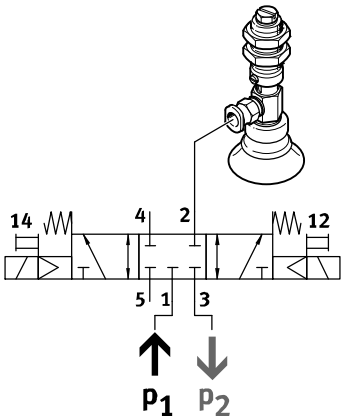
- Note

- With internal pilot air, 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

Advantages

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

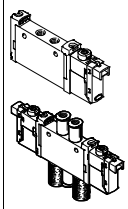
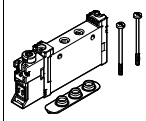
Vacuum, ejector pulse and normal position

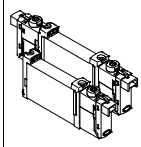


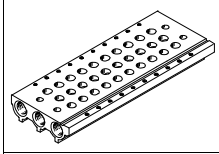
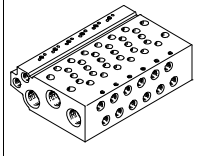
Vacuum, ejector pulse and normal position with internal pilot air can be achieved by connecting vacuum at duct 3 and pressure for the ejector pulse at duct 1.

Solenoid valves VUVG

Product range overview

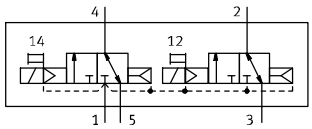
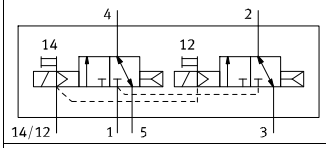
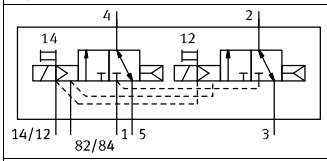
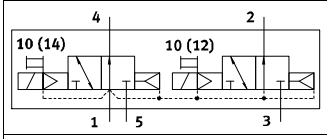
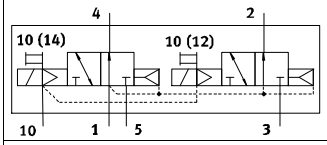
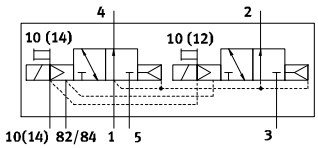
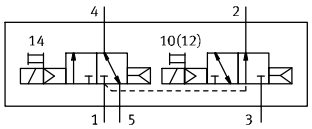
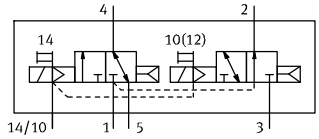
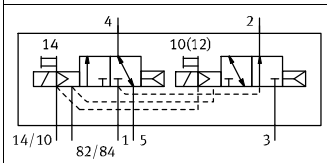
Design	Working port	Type code	Functions and flow rate [l/min]												➔ Page/ Internet
			T32C	T32U	T32H	T32C/M	T32U/M	T32H/M	M52	M52/M	B52	P53C	P53U	P53E	
In-line valve as individual valve, solenoid valve VUVG-L															
	M3	10A	–	–	–	–	–	–	■ 100	■ 80	■ 100	■ 90	■ 90	■ 90	17
	M5	10	■ 150	■ 150	■ 150	■ 135	■ 125	■ 125	■ 220	■ 190	■ 220	■ 210	■ 210	■ 210	25
	M7	10	■ 190	■ 190	■ 190	■ 150	■ 140	■ 140	■ 380	■ 320	■ 380	■ 320	■ 320	■ 320	29
	G1⁄8	14	■ 650	■ 600	■ 650	■ 550	■ 500	■ 500	■ 780	■ 780	■ 780	■ 650	■ 600	■ 600	37
	G1⁄4	18	■ 1000	■ 1000	■ 1000	■ 1000	■ 1000	■ 1000	■ 1300	■ 1300	■ 1380	■ 1200	■ 1000	■ 1000	45
In-line valve for manifold assembly, solenoid valve VUVG-S															
	M3	10A	–	–	–	–	–	–	■ 100	■ 80	■ 100	■ 90	■ 90	■ 90	17
	M5	10	■ 150	■ 150	■ 150	■ 135	■ 125	■ 125	■ 220	■ 190	■ 220	■ 210	■ 210	■ 210	25
	M7	10	■ 170	■ 170	■ 170	■ 140	■ 130	■ 130	■ 340	■ 290	■ 340	■ 300	■ 300	■ 300	29
	G1⁄8	14	■ 620	■ 580	■ 580	■ 520	■ 480	■ 480	■ 730	■ 730	■ 730	■ 620	■ 580	■ 580	37
	G1⁄4	18	■ 1000	■ 1000	■ 1000	■ 1000	■ 1000	■ 1000	■ 1300	■ 1300	■ 1380	■ 1200	■ 1000	■ 1000	45

Design	Working port	Type code	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-B															
	M5	10A	–	–	–	–	–	–	■ 100	■ 80	■ 100	■ 90	■ 90	■ 90	53
	M5	10	■ 150	■ 150	■ 150	■ 130	■ 120	■ 120	■ 210	■ 180	■ 210	■ 200	■ 200	■ 200	60
	M7	10	■ 160	■ 160	■ 160	■ 140	■ 130	■ 130	■ 270	■ 230	■ 270	■ 250	■ 250	■ 250	60
	G1⁄8	14	■ 540	■ 510	■ 540	■ 430	■ 410	■ 410	■ 580	■ 580	■ 580	■ 540	■ 510	■ 510	67
	G1⁄4	18	■ 800	■ 800	■ 800	■ 800	■ 800	■ 800	■ 1000	■ 1000	■ 1000	■ 950	■ 950	■ 950	74

Design	Type code	Description	➔ Page/ Internet
Manifold rail VABM- ... -S- ..., for in-line valves (manifold assembly)			
	10AS	Valve size M3	vabm
	10S	Valve size M5, M7	
	14S	Valve size G1⁄8	
	18S	Valve size G1⁄4	
Manifold rail VABM, for sub-base valves			
	10AW	Connection size M3	vabm
	10W	Connection size M5	
	10HW	Connection size M7	
	14W	Connection size G1⁄8	
	18W	Connection size G1⁄4	

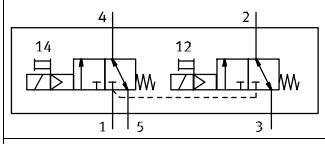
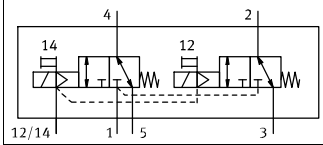
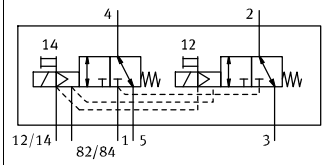
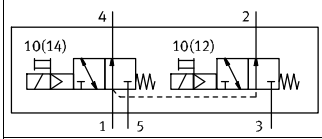
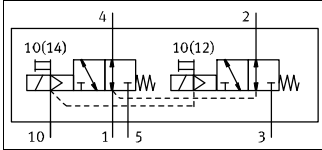
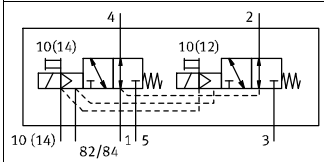
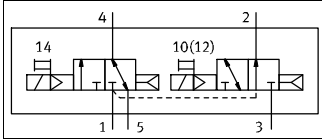
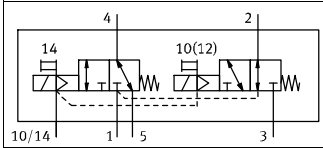
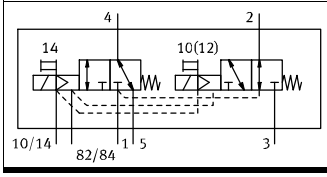
Solenoid valves VUVG

Overview of valve functions

Valve	Valve code	Description	Valve terminal/ position function order code	Size			
				M3	M5/M7	G1/8	G1/4
2x3/2-way valve, normally closed, pneumatic spring							
	T32C-A	In-line valve, internal pilot air supply	K	–	■	■	■
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					
2x3/2-way valve, normally open, pneumatic spring							
	T32U-A	In-line valve, internal pilot air supply	N	–	■	■	■
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					
2x3/2-way valve, 1x normally open, 1x normally closed, pneumatic spring							
	T32H-A	In-line valve, internal pilot air supply	H	–	■	■	■
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					

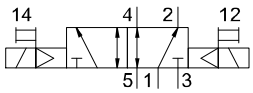
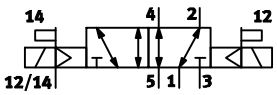
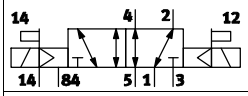
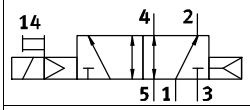
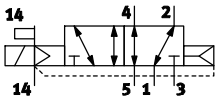
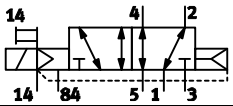
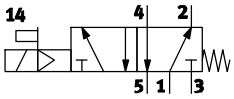
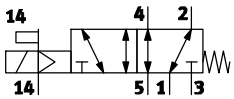
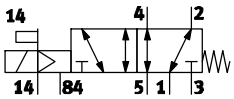
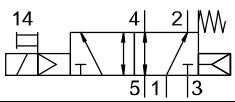
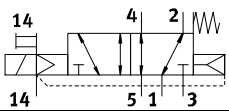
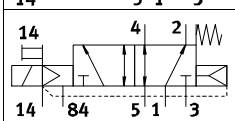
Solenoid valves VUVG

Overview of valve functions

Valve	Valve code	Description	Valve terminal/ position function order code	Size			
				M3	M5/M7	G1/8	G1/4
2x3/2-way valve, normally closed, mechanical spring							
	T32C-M	In-line valve, internal pilot air supply	VK	–	■	■	■
		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	VN	–	■	■	■
		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	VH	–	■	■	■
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					

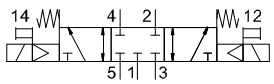
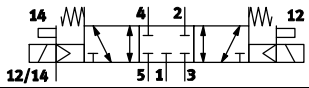
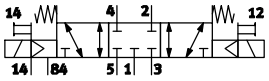
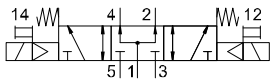
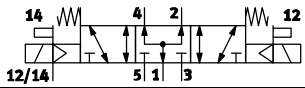
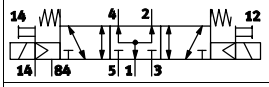
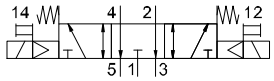
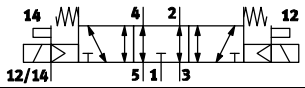
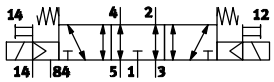
Solenoid valves VUVG

Overview of valve functions

Valve	Valve code	Description	Valve terminal/ position function order code	Size			
				M3	M5/M7	G1/8	G1/4
5/2-way double solenoid valve							
	B52	In-line valve, internal pilot air supply	J	■	■	■	■
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					
5/2-way single solenoid valve, pneumatic spring							
	M52-A	In-line valve, internal pilot air supply	M	–	–	■	–
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					
5/2-way single solenoid valve, mechanical spring							
	M52-M	In-line valve, internal pilot air supply	A	■	■	■	■
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					
5/2-way single solenoid valve, pneumatic/mechanical spring							
	M52-R	In-line valve, internal pilot air supply	P	■	■	–	■
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					

Solenoid valves VUVG

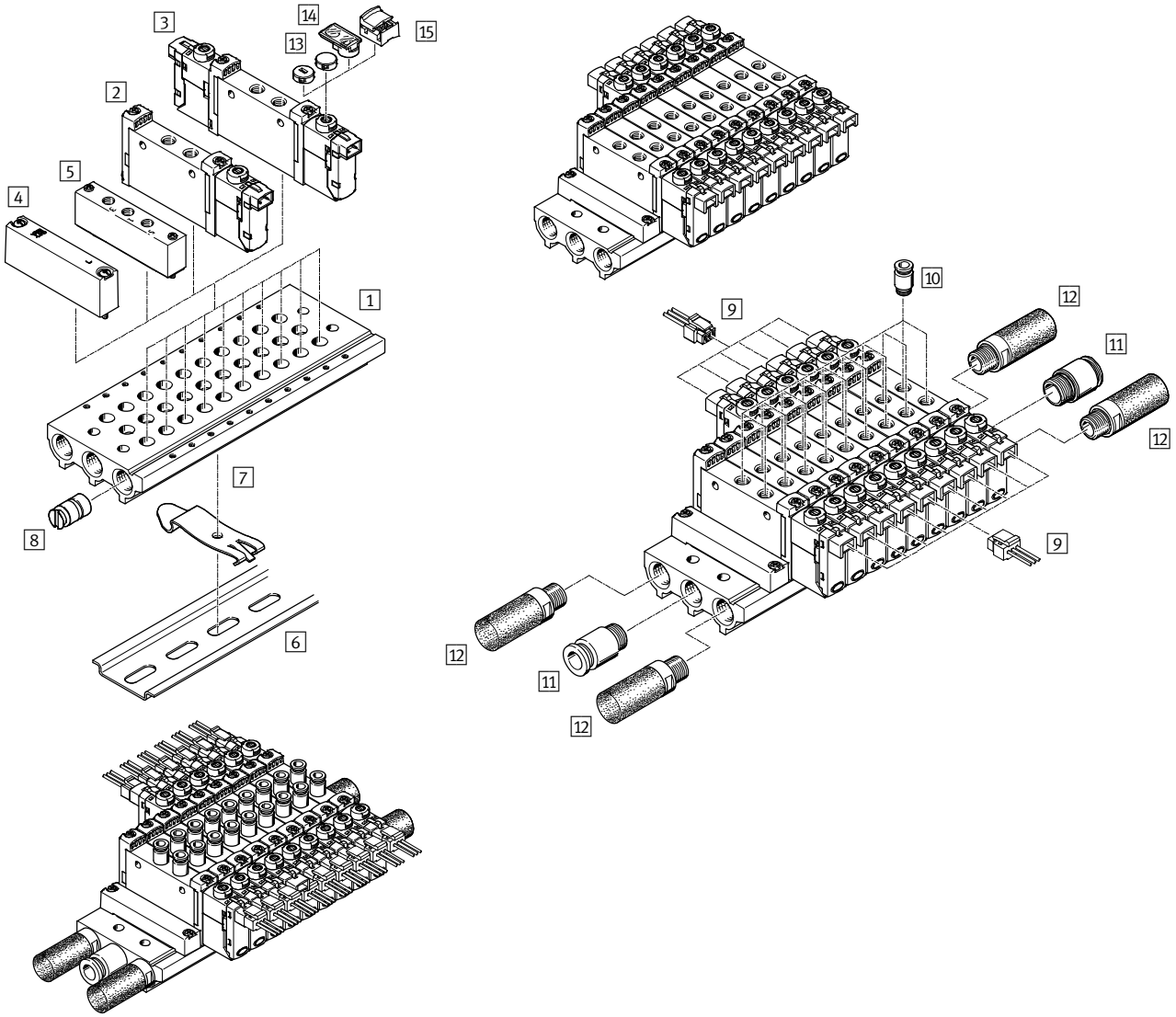
Overview of valve functions

Valve	Valve code	Description	Valve terminal/ position function order code	Size			
				M3	M5/M7	G1/8	G1/4
5/3-way valve, mid-position closed							
	P53C	In-line valve, internal pilot air supply	G	■	■	■	■
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					
5/3-way valve, mid-position pressurised							
	P53U	In-line valve, internal pilot air supply	B	■	■	■	■
		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	E	■	■	■	■
		In-line valve, external pilot air supply					
		Sub-base valve, external pilot air supply					

Solenoid valves VUVG

Sample system overview – VUVG-L10 and VUVG-S10, in-line valves M5/M7

Manifold assembly



Manifold assembly and accessories

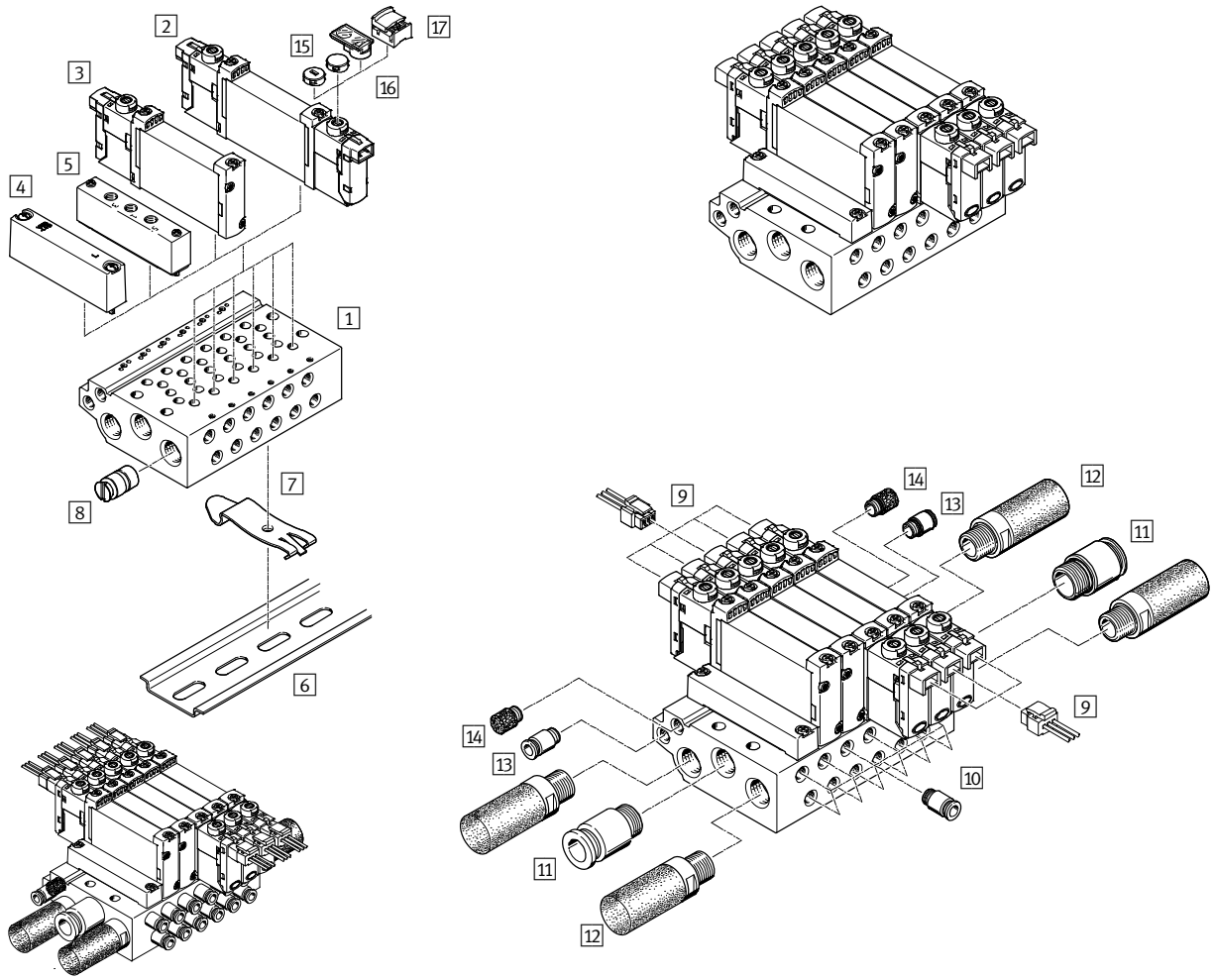
		Type	Brief description	➔ Page/Internet
1	Manifold rail	VABM-L1-10S-G18-...	For 2 to 10, 12, 14 and 16 valve positions	34
2	Solenoid valve	VUVG- ...	In-line valve, 5/2-way single solenoid	25
3	Solenoid valve	VUVG- ...	In-line valve, 2x3/2-way, 5/2-way double solenoid and 5/3-way valve	25
4	Blanking plate	VABB-L1-10-S	For covering an unused valve position	34
5	Supply plate	VABF-L1-10-P3A4- ...	For air supply port 1 and outlet port 3 and 5	34
6	H-rail	NRH-35-2000	For mounting the valve manifold	86
7	H-rail mounting	VAME-T-M4	2 pieces for fitting the valve manifold on an H-rail	86
8	Separator	VABD-...	For creating pressure zones	34
9	Plug socket with cable	NEBV-H1G2-...-LE2	For E-box H2 and H3	84
10	Push-in fitting	QS...	Push-in fitting for outlet port 2 and 4	85
11	Push-in fitting	QS...	Push-in fitting for air supply port 1	85
12	Silencer	U...	For outlet port 3 and 5	85
13	Cover cap	VMPA-HB...-B	For manual override	86
14	Inscription label holder	ASLR-D	For labelling the valves, covering the mounting screw and the manual override	86
15	Cover	VAMC	For manual override	86

Solenoid valves VUVG

Sample system overview – VUVG-B10, sub-base valves

FESTO

Manifold assembly



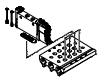
Manifold assembly and accessories			
	Type	**Brief description**	**➔ Page/Internet**
1 Manifold rail	VABM-L1-10 ...-G18- ...	For 2 to 10, 12, 14 and 16 valve positions	64
2 Solenoid valve	VUVG- ...	Sub-base valve, 5/2-way single solenoid	60
3 Solenoid valve	VUVG- ...	Sub-base valve, 2x3/2-way, 5/2-way double solenoid and 5/3-way valve	60
4 Blanking plate	VABB-L1-10-W	For covering an unused valve position	65
5 Supply plate	VABF-L1-10-P3A4- ...	For air supply port 1 and outlet port 3 and 5	65
6 H-rail	NRH-35-2000	For mounting the valve manifold	86
7 H-rail mounting	VAME-T-M4	2 pieces for fitting the valve manifold on an H-rail	86
8 Separator	VABD- ...	For creating pressure zones	65
9 Plug socket with cable	NEBV-H1G2-KN-...-LE2	For E-box H2 and H3	84
10 Push-in fitting	QS...	Push-in fitting for outlet port 2 and 4	85
11 Push-in fitting	QS...	Push-in fitting for air supply port 1	85
12 Silencer	U...	For outlet port 3 and 5	85
13 Push-in fitting	QS...	Push-in fitting for pilot air supply port 12/14	85
14 Silencer	U...	Silencer for pilot air outlet 82/84	85
15 Cover cap	VMPA-HB...-B	For manual override	86
16 Inscription label holder	ASLR-D	For labelling the valves, covering the mounting screw and the manual override	86
17 Cover	VAMC	For manual override	86

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

Order code – In-line valves M3

VUVG	–		10A	–		–					–		–				L	–	

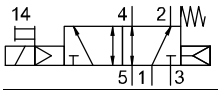
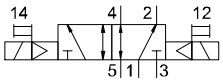
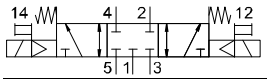
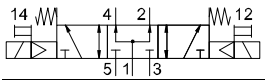
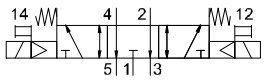
Valve design

 In-line, individual valve	**L**
 In-line, manifold valve incl. seal and screws	**S**

Width

10 mm	**10A**

Valve functions

	**M52**
	**B52**
	**P53C**
	**P53U**
	**P53E**

Reset method

Mech. spring for M52	**M**
Pneu./mech. spring for M52	**R**
With B52 and P53	**–**

Pilot air supply

Internal	**–**
External	**Z**

Manual override

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

Connecting cables

W1…4	Not sheathed	for H
C1…4	Sheathed	
WS1…4	Not sheathed	for S
S1…4	Sheathed	
N1…4	M8x1, 3-pin	
N5…8	M8x1, 4-pin	

Display

L	LED

Protective circuit

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

E-box

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

Operating voltage

1	24 V DC
5	12 V DC
4	5 V DC

Exhausting with VUVG-L

QN	QS if QS
U	Silencer
–	M3

Pneumatic connection

M3	Thread M3
T18	Push-in connector 1/8"
T532	Push-in connector 5/32"
Q3	Push-in connector 3 mm/M3
Q4	Push-in connector 4 mm/M3

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 10

Width 10 mm

Flow rate
90 ... 100 l/min

Voltage
5, 12 and 24 V DC

General technical data							
Valve function		M52-R	B52	M52-M	P53		
Normal position		–	–	–	C[1]	U[2]	E[3]
Stable position		Monostable	Bistable	Monostable	Monostable		
Pneumatic spring reset method		Yes[4]	–	No	No		
Mechanical spring reset method		Yes[4]	–	Yes	Yes		
Vacuum operation at port 1		Only with external pilot air supply					
Design		Piston spool valve					
Sealing principle		Soft					
Actuation type		Electric					
Type of control		Piloted					
Pilot air supply		Internal or external					
Exhaust function		With flow control					
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		Any					
Nominal size	[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		
Width	[mm]	10					
Port 1, 2, 3, 4, 5; 14		M3					
Product weight	[g]	38	49	37			
Certification		c UL us - Recognized (OL)					
		c CSA us (OL)					
CE marking (see declaration of conformity)		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=Normally exhausted
4) Combined reset method
5) If several valves are to be screwed together via the through-holes to form a block, a minimum gap 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

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 in accordance with 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, –5 ... +60 with holding current reduction			
Temperature of medium		[°C]	–5 ... +50, –5 ... +60 with holding current reduction			

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

Electrical data		
Electrical connection		Via E-box
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle	[%]	100
Protection class to EN 60529		IP40 (with plug socket), IP65 (with M8)

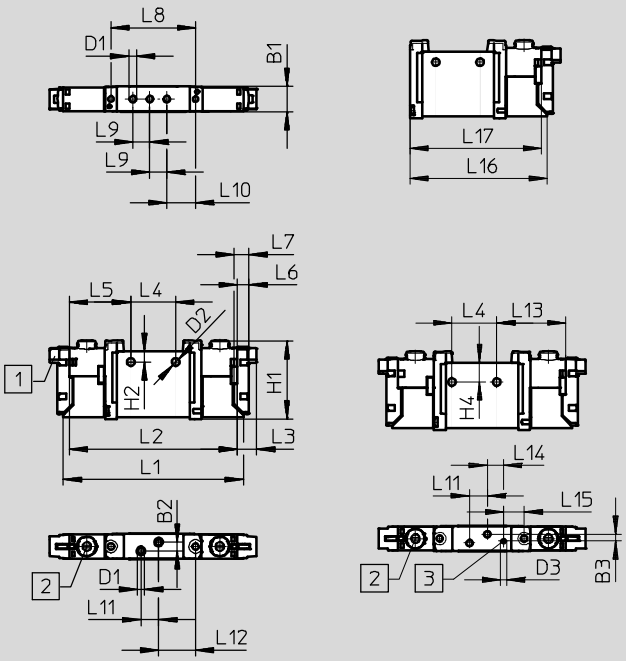
Information on materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR
Note on materials	RoHS-compliant

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
E-boxes
➔ page 82

1 Horizontal electrical connection

2 Manual override

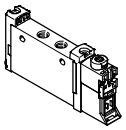
3 Port for external pilot air supply

Type	B1	B2	B3	D1	D2	D3	H1	H2	L1	L2	L3	L4	L5
VUVG-L-10 -...-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-S-10 -...-M3 ...													

Type	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17
VUVG-L-10 -...-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-S-10 -...-M3 ...												

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

Ordering data

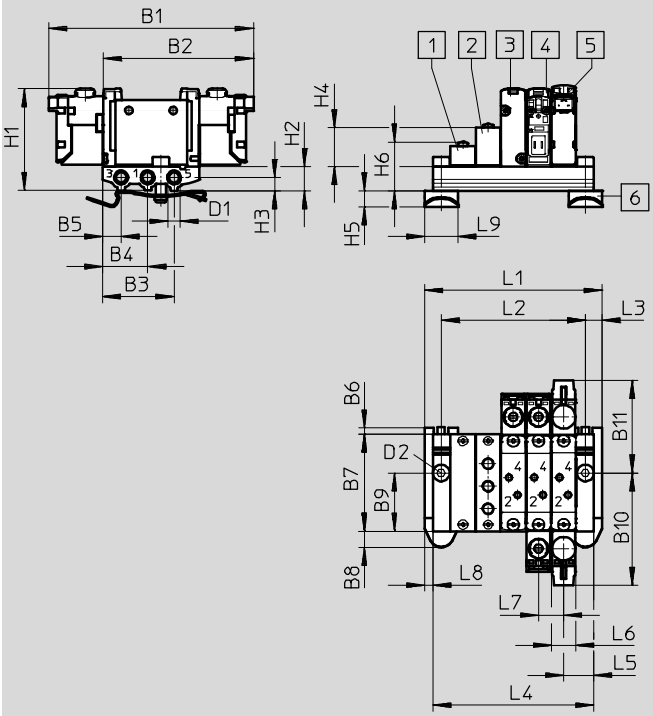
Ordering data			
	Description	Part No.	Type
In-line valve M3, without E-box			
	5/2-way valve, single solenoid		
	Internal pilot air supply, mechanical/pneumatic spring return	**566437**	**VUVG-L10A-M52-RT-M3-1P3**
	External pilot air supply, mechanical/pneumatic spring return	**566443**	**VUVG-L10A-M52-RZT-M3-1P3**
	Internal pilot air supply, mechanical spring return	**574345**	**VUVG-L10A-M52-MT-M3-1P3**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, internal pilot air supply	**566439**	**VUVG-L10A-P53C-T-M3-1P3**
	Mid-position exhausted, internal pilot air supply	**566440**	**VUVG-L10A-P53E-T-M3-1P3**
	Mid-position pressurised, internal pilot air supply	**566441**	**VUVG-L10A-P53U-T-M3-1P3**
	Mid-position closed, external pilot air supply	**566445**	**VUVG-L10A-P53C-ZT-M3-1P3**
	Mid-position exhausted, external pilot air supply	**566446**	**VUVG-L10A-P53E-ZT-M3-1P3**
	Mid-position pressurised, external pilot air supply	**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
E-boxes
➔ page 80

1 Blanking plate
2 Supply plate
3 Single solenoid valve without E-box
4 Double solenoid valve without E-box
5 Solenoid valve, vertical electrical connection
6 H-rail mounting (two M4x16 screws to DIN 912 are required for mounting)

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	D1
VUVG-S10A -...-M3 ...	85.3	62.6	29.7	18.7	7.7	3	40.3	6.8	24.2	46.7	38.6	M5

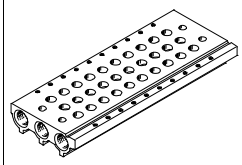
Type	D2	H1	H2	H3	H4	H5	H6	L3	L5	L6	L7	L8	L9
VUVG-S10A -...-M3 ...	Ø 4.5	43.8	10	5.5	16.2	6.8	20.3	7	12.5	10.3	10.5	3.5	14

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1 [mm]	42.5	53	63.5	74	84.5	95	105.5	116	126.5	147.5	168.5	189.5
L2 [mm]	28.5	39	49.5	60	70.5	81	91.5	102	112.5	133.5	154.5	175.5
L4 [mm]	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

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

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

Order code – Manifold rails

VABM	–	**L1**	–	**10A**	**S**	–	**M5**	–	

Manifold assembly parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

Valve width	
10 mm	**10A**

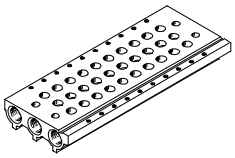
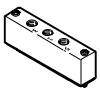
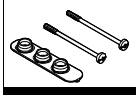
Manifold rail with ports 1, 3, 5	
For M3 in-line valves	**S**

Ports 1, 3, 5	
M5	M5

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

Solenoid valves VUVG-S10A, in-line valves M3

Ordering data

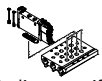
Ordering data – Manifold rail				
	Description		Part No.	Type
Manifold rail for in-line valves (manifold assembly)				
	For valve size M3	2 valve positions	**566522**	**VABM-L1-10AS-M5-2**
		3 valve positions	**566523**	**VABM-L1-10AS-M5-3**
		4 valve positions	**566524**	**VABM-L1-10AS-M5-4**
		5 valve 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**
Blanking plate				Technical data ➔ Internet: vabb
	For manifold rail for M3 in-line valves	Incl. screws and seal	**569986**	**VABB-L1-10A**
Separator				Technical data ➔ Internet: vabd
	For manifold rail for M3 in-line valves	Separator for pressure zones	**570872**	**VABD-4.2-B**
Supply plate				Technical data ➔ Internet: vabf
	For manifold rail for M3 in-line valves	Incl. screws and seal	**569990**	**VABF-L1-10A-P3A4-M5**
Seals for in-line valves				Technical data ➔ Internet: vabd
	M3	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**566670**	**VABD-L1-10AX-S-M3**

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

Order code – In-line valves M5/M7

VUVG	–		10	–		–				–		–				L	–		

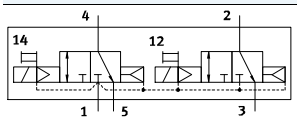
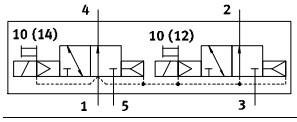
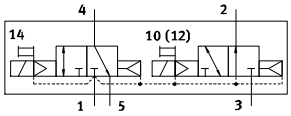
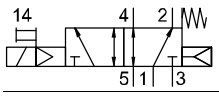
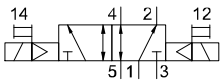
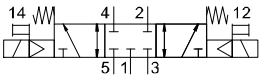
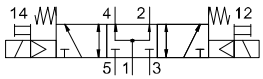
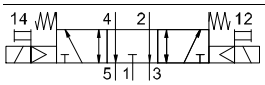
Valve design

 In-line, individual valve	**L**
 In-line, manifold valve incl. seal and screws	**S**

Width

10 mm	**10**

Valve functions

	**T32C**
	**T32U**
	**T32H**
	**M52**
	**B52**
	**P53C**
	**P53U**
	**P53E**

Reset method

Pneumatic spring for T32 and M52	**A**
Mechanical spring for T32 and M52	**M**
Pneu./mech. spring for M52	**R**
With B52 and P53	**–**

Pilot air supply

Internal	**–**
External	**Z**

Manual override

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

Exhausting with VUVG-L

QN	QS if QS
U	Silencer
–	M5/M7

Pneumatic connection

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

Operating voltage

1	24 V DC
5	12 V DC
4	5 V DC

E-box

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

Protective circuit

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

Display

L	LED

Connecting cables

W1...4	Not sheathed	for H
C1...4	Sheathed	
WS1...4	Not sheathed	for S
S1...4	Sheathed	
N1...4	M8x1, 3-pin	
N5...8	M8x1, 4-pin	

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

Technical data

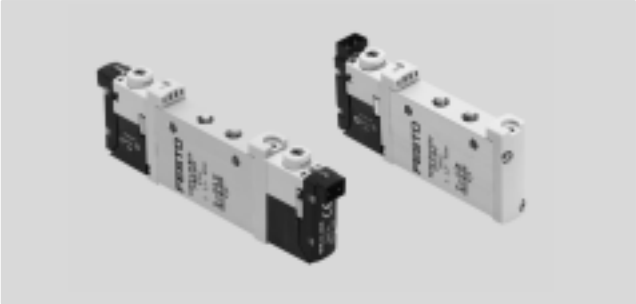
Function
2x3/2C, 2x3/2U, 2x3/2H
5/2-way, single solenoid
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ page 10

Width 10 mm

Flow rate
125 ... 220 l/min

Voltage
5, 12 and 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			Monostable							Bistable	Monostable	Monostable		
Pneumatic spring reset method			Yes			No			Yes[5]	–	No	No		
Mechanical spring reset method			No			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1			No			Only with external pilot air supply								
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Electric											
Type of control			Piloted											
Pilot air supply			Internal or external											
Exhaust function			With flow control											
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			Any											
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	–	16		
Width		[mm]	10											
Port	1, 2, 3, 4, 5		M5											
	12, 14		M3											
Product weight		[g]	55			54			45	55	44	55		
Certification			c UL us - Recognized (OL)											
			c CSA us (OL)											
CE marking (see declaration of conformity)			To EU EMC Directive[7]											
Corrosion resistance class CRC[8]			2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Normally 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 gap 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

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 in accordance with 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, –5 ... +60 with holding current reduction					
Temperature of medium		[°C]	–5 ... +50, –5 ... +60 with holding current reduction					

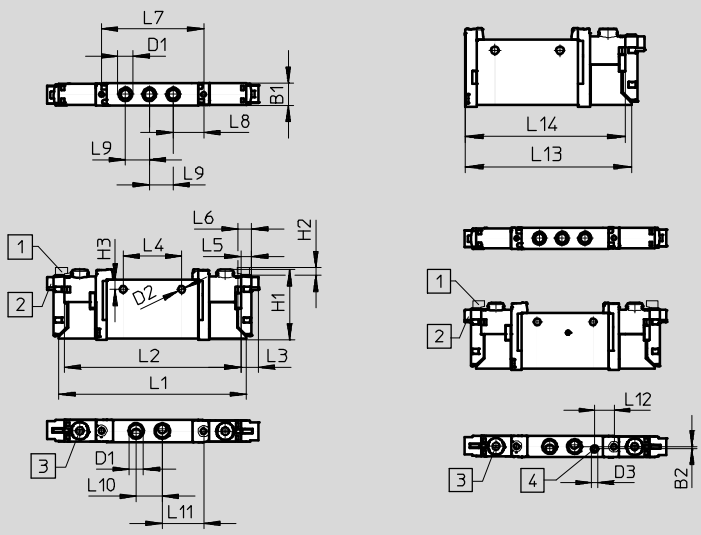
1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via E-box
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle	[%]	100
Protection class 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**

2x3/2-way, 5/2-way and 5/3-way valve



- Note

More dimensions
E-boxes
➔ page 80

1 Vertical electrical connection

2 Horizontal electrical connection

3 Manual override

4 Port for external pilot air supply

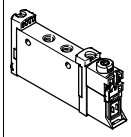
Type	B1	B2	D1	D2	D3	H1	H2	H3	L1	L2	L3	L4
VUVG-L-10 -...-M5 ...	10.2	–	M5	3.2	M3	32.5	3.6	4.4	86.5	81.5	8	27
VUVG-S-10 -...-M5 ...												

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 ...										

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

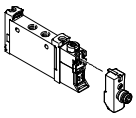
Ordering data

FESTO

Ordering data			
	Description	Part No.	Type
In-line valve M5, without E-box			
	2x3/2-way valve		
	Normally closed, internal pilot air supply, pneumatic spring return	**566454**	**VUVG-L10-T32C-AT-M5-1P3**
	Normally open, internal pilot air supply, pneumatic spring return	**566455**	**VUVG-L10-T32U-AT-M5-1P3**
	1x normally open, 1x normally closed, internal pilot air supply, pneumatic spring return	**566456**	**VUVG-L10-T32H-AT-M5-1P3**
	Normally closed, external pilot air supply, pneumatic spring return	**566463**	**VUVG-L10-T32C-AZT-M5-1P3**
	Normally open, external pilot air supply, pneumatic spring return	**566464**	**VUVG-L10-T32U-AZT-M5-1P3**
	1x normally open, 1x normally closed, external pilot air supply, pneumatic spring return	**566465**	**VUVG-L10-T32H-AZT-M5-1P3**
	Normally closed, internal pilot air supply, mechanical spring return	**574348**	**VUVG-L10-T32C-MT-M5-1P3**
	Normally open, internal pilot air supply, mechanical spring return	**574349**	**VUVG-L10-T32U-MT-M5-1P3**
	1x normally open, 1x normally closed, internal pilot air supply, mechanical spring return	**574350**	**VUVG-L10-T32H-MT-M5-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574352**	**VUVG-L10-T32C-MZT-M5-1P3**
	Normally open, external pilot air supply, mechanical spring return	**574353**	**VUVG-L10-T32U-MZT-M5-1P3**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**574354**	**VUVG-L10-T32H-MZT-M5-1P3**
	5/2-way valve, single solenoid		
	Internal pilot air supply, pneumatic/mechanical spring return	**566457**	**VUVG-L10-M52-RT-M5-1P3**
	External pilot air supply, pneumatic/mechanical spring return	**566466**	**VUVG-L10-M52-RZT-M5-1P3**
	Internal pilot air supply, mechanical spring return	**574351**	**VUVG-L10-M52-MT-M5-1P3**
	External pilot air supply, mechanical spring return	**574355**	**VUVG-L10-M52-MZT-M5-1P3**
	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		
	Mid-position closed, internal pilot air supply	**566459**	**VUVG-L10-P53C-T-M5-1P3**
	Mid-position exhausted, internal pilot air supply	**566460**	**VUVG-L10-P53E-T-M5-1P3**
	Mid-position pressurised, internal pilot air supply	**566461**	**VUVG-L10-P53U-T-M5-1P3**
	Mid-position closed, external pilot air supply	**566468**	**VUVG-L10-P53C-ZT-M5-1P3**
	Mid-position exhausted, external pilot air supply	**566469**	**VUVG-L10-P53E-ZT-M5-1P3**
	Mid-position pressurised, external pilot air supply	**566470**	**VUVG-L10-P53U-ZT-M5-1P3**

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

Ordering data

Ordering data			
	Description	Part No.	Type
In-line valve M5, with E-box R8			
	2x3/2-way valve		
	Normally closed, internal pilot air supply, pneumatic spring return	**577347**	**VUVG-L10-T32C-AT-M5-1R8L**
	Normally open, internal pilot air supply, pneumatic spring return	**8031466**	**VUVG-L10-T32U-AT-M5-1R8L**
	1x normally open, 1x normally closed, internal pilot air supply, pneumatic spring return	**8031467**	**VUVG-L10-T32H-AT-M5-1R8L**
	Normally closed, external pilot air supply, mechanical spring return	**8031468**	**VUVG-L10-T32C-MT-M5-1R8L**
	Normally open, external pilot air supply, mechanical spring return	**8031469**	**VUVG-L10-T32U-MT-M5-1R8L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**8031470**	**VUVG-L10-T32H-MT-M5-1R8L**
	5/2-way valve, single solenoid		
	Internal pilot air supply, pneumatic/mechanical spring return	**572634**	**VUVG-L10-M52-RT-M5-1R8L**
	Internal pilot air supply, mechanical spring return	**8031472**	**VUVG-L10-M52-MT-M5-1R8L**
	5/2-way valve, double solenoid		
	Internal pilot air supply	**576664**	**VUVG-L10-B52-T-M5-1R8L**
	5/3-way valve		
	Mid-position closed, internal pilot air supply	**577346**	**VUVG-L10-P53C-T-M5-1R8L**
	Mid-position exhausted, internal pilot air supply	**8031475**	**VUVG-L10-P53E-T-M5-1R8L**
	Mid-position pressurised, internal pilot air supply	**8031476**	**VUVG-L10-P53U-T-M5-1R8L**

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

Technical data

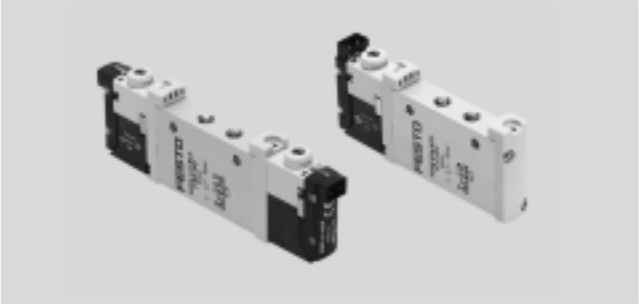
Function
2x3/2C, 2x3/2U, 2x3/2H
5/2-way, single solenoid
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ page 10

Width 10 mm

Flow rate
170 ... 340 l/min

Voltage
5, 12 and 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		Monostable							Bistable	Monostable	Monostable		
Pneumatic spring reset method		Yes			No			Yes[5]	–	No	No		
Mechanical spring reset method		No			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1		No			Only with external pilot air supply								
Design		Piston spool valve											
Sealing principle		Soft											
Actuation type		Electric											
Type of control		Piloted											
Pilot air supply		Internal or external											
Exhaust function		With flow control											
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		Any											
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	380		320	320		
Flow rate on manifold rail	[l/min]	170			140	130	130	340		290	300		
Switching time on/off	[ms]	6/16			8/11			7/19	–	8/24	10/30		
Changeover time	[ms]	–							7		16		
Width	[mm]	10											
Port 1, 2, 3, 4, 5		M7											
Port 12, 14		M3											
Product weight	[g]	55			54			45	55	44	55		
Certification		c UL us - Recognized (OL)											
		c CSA us (OL)											
CE marking (see declaration of conformity)		To EU EMC Directive[7]											
Corrosion resistance class CRC[8]		2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Normally 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 gap 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

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 in accordance with 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, –5 ... +60 with holding current reduction					
Temperature of medium		[°C]	–5 ... +50, –5 ... +60 with holding current reduction					

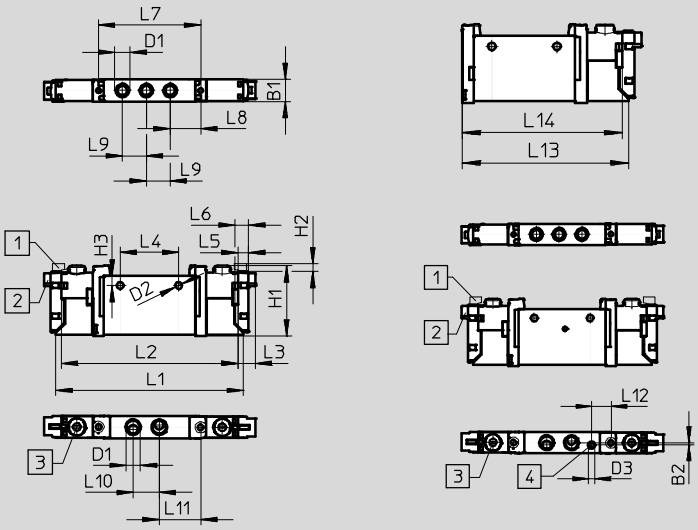
1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via E-box
Operating voltage	[V DC]	5, 12, 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle	[%]	100
Protection class 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**

2x3/2-way, 5/2-way and 5/3-way valve



- Note

More dimensions E-boxes ➔ page 80

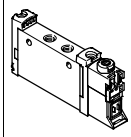
1 Vertical electrical connection
2 Horizontal electrical connection
3 Manual override
4 Port for external pilot air supply

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 ...										

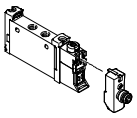
Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M7

Ordering data

Ordering data			
	Description	Part No.	Type
In-line valve M7, without E-box			
	2x3/2-way valve		
	Normally closed, internal pilot air supply, pneumatic spring return	**566471**	**VUVG-L10-T32C-AT-M7-1P3**
	Normally open, internal pilot air supply, pneumatic spring return	**566472**	**VUVG-L10-T32U-AT-M7-1P3**
	Internal pilot air supply, 1x normally open, 1x normally closed, pneumatic spring return	**566473**	**VUVG-L10-T32H-AT-M7-1P3**
	Normally closed, external pilot air supply, pneumatic spring return	**566479**	**VUVG-L10-T32C-AZT-M7-1P3**
	Normally open, external pilot air supply, pneumatic spring return	**566480**	**VUVG-L10-T32U-AZT-M7-1P3**
	External pilot air supply, 1x normally open, 1x normally closed, pneumatic spring return	**566481**	**VUVG-L10-T32H-AZT-M7-1P3**
	Normally closed, internal pilot air supply, mechanical spring return	**574356**	**VUVG-L10-T32C-MT-M7-1P3**
	Normally open, internal pilot air supply, mechanical spring return	**574357**	**VUVG-L10-T32U-MT-M7-1P3**
	1x normally open, 1x normally closed, internal pilot air supply, mechanical spring return	**574358**	**VUVG-L10-T32H-MT-M7-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574360**	**VUVG-L10-T32C-MZT-M7-1P3**
	Normally open, external pilot air supply, mechanical spring return	**574361**	**VUVG-L10-T32U-MZT-M7-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574362**	**VUVG-L10-T32H-MZT-M7-1P3**
	5/2-way valve, single solenoid		
	Internal pilot air supply, mechanical spring return	**574359**	**VUVG-L10-M52-MT-M7-1P3**
	External pilot air supply, mechanical spring return	**574363**	**VUVG-L10-M52-MZT-M7-1P3**
	Internal pilot air supply, pneumatic/mechanical spring return	**566474**	**VUVG-L10-M52-RT-M7-1P3**
	External pilot air supply, pneumatic/mechanical spring return	**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		
	Mid-position closed, internal pilot air supply	**566476**	**VUVG-L10-P53C-T-M7-1P3**
	Mid-position exhausted, internal pilot air supply	**566477**	**VUVG-L10-P53E-T-M7-1P3**
	Mid-position pressurised, internal pilot air supply	**566478**	**VUVG-L10-P53U-T-M7-1P3**
	Mid-position closed, external pilot air supply	**566484**	**VUVG-L10-P53C-ZT-M7-1P3**
	Mid-position exhausted, external pilot air supply	**566485**	**VUVG-L10-P53E-ZT-M7-1P3**
	Mid-position pressurised, external pilot air supply	**566486**	**VUVG-L10-P53U-ZT-M7-1P3**

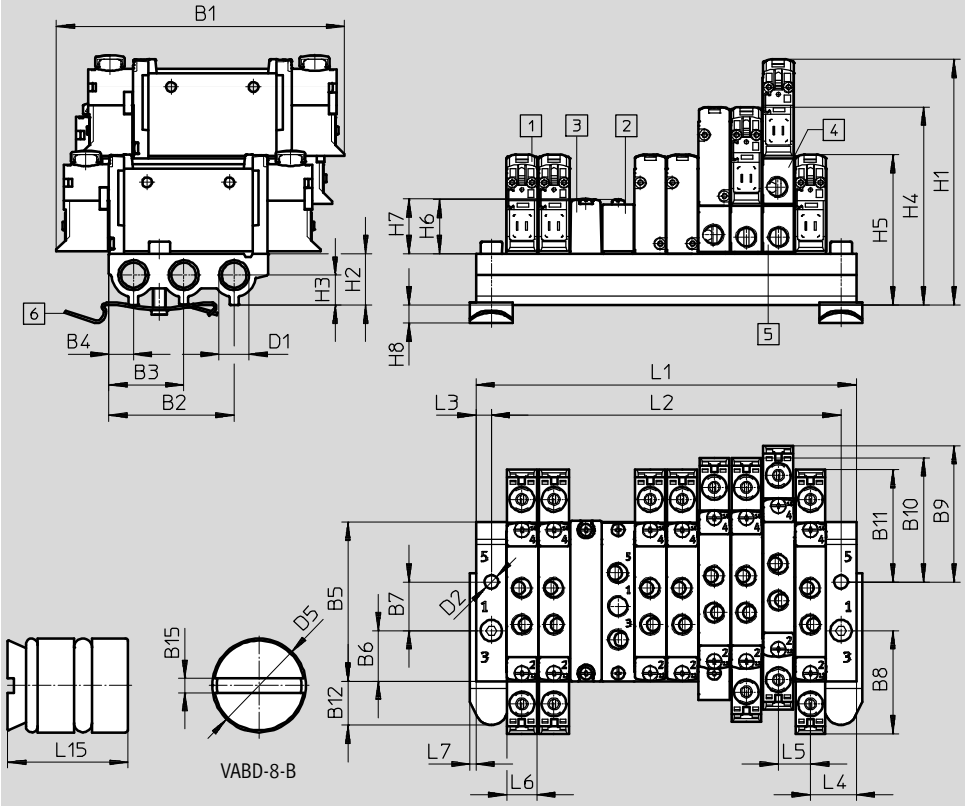
Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M7

Ordering data

Ordering data			
	Description	Part No.	Type
In-line valve M7, with E-box R8			
	2x3/2-way valve		
	Normally closed, internal pilot air supply, pneumatic spring return	**574218**	**VUVG-L10-T32C-AT-M7-1R8L**
	Normally open, internal pilot air supply, pneumatic spring return	**574219**	**VUVG-L10-T32U-AT-M7-1R8L**
	1x normally open, 1x normally closed, internal pilot air supply, pneumatic spring return	**574220**	**VUVG-L10-T32H-AT-M7-1R8L**
	Normally closed, external pilot air supply, mechanical spring return	**8031480**	**VUVG-L10-T32C-MT-M7-1R8L**
	Normally open, external pilot air supply, mechanical spring return	**8031481**	**VUVG-L10-T32U-MT-M7-1R8L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**8031482**	**VUVG-L10-T32H-MT-M7-1R8L**
	5/2-way valve, single solenoid		
	Internal pilot air supply, pneumatic/mechanical spring return	**574221**	**VUVG-L10-M52-RT-M7-1R8L**
	Internal pilot air supply, mechanical spring return	**8031485**	**VUVG-L10-M52-MT-M7-1R8L**
	5/2-way valve, double solenoid		
	Internal pilot air supply	**574222**	**VUVG-L10-B52-T-M7-1R8L**
	5/3-way valve		
	Mid-position closed, internal pilot air supply	**574223**	**VUVG-L10-P53C-T-M7-1R8L**
	Mid-position exhausted, internal pilot air supply	**574225**	**VUVG-L10-P53E-T-M7-1R8L**
	Mid-position pressurised, internal pilot air supply	**574224**	**VUVG-L10-P53U-T-M7-1R8L**

In-line valves for manifold assembly

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



- - Note

More dimensions E-boxes ➔ page 80

1 Solenoid valve, vertical electrical connection
2 Supply plate, ports 1, 3 and 5: M5 or M7
3 Blanking plate
4 Vertical pressure supply plate
5 Vertical pressure exhaust plate
6 H-rail mounting (two M4x20 screws to DIN 912 are required)

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
VUVG-S10 -...-M5 ...	94.3	41	24.5	8	52.1	16.5	16	33.7	44.6	40.7	36.7	14.4

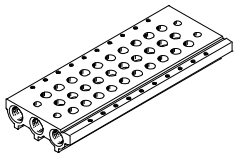
Type	D1	D2	D5	H1	H2	H3	H4	H5	H6	H7	H8	L3	L4	L5	L6	L7
VUVG-S10 -...-M5 ...	G1⁄8	4.5	8	80.6	16.8	9.8	64.9	49.3	17.8	18	5.9	5	15	10.5	10.3	2

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

Ordering data

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16	22
L1 [mm]	40.5	51	61.5	72	82.5	93	103.5	114	124.5	145.5	166.5	187.5	250.5
L2 [mm]	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

	Port	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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
2) Note on materials: RoHS-compliant.

Order code – Manifold rails

VABM	–	L1	–	10	S	–	G18	–	

Manifold assembly parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

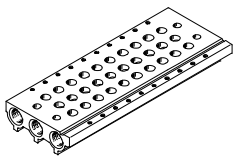
Valve width	
10 mm	**10**

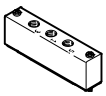
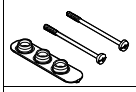
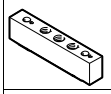
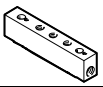
Manifold rail with ports 1, 3, 5	
For M5 and M7 in-line valves	**S**

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

Ports 1, 3, 5	
G18	G1⁄8

Ordering data – Manifold rail

	Description		Part No.	Type
Manifold rail for in-line valve (manifold assembly)				
	For valve 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**

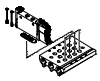
Ordering data – Accessories				
	Description		Part No.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For manifold rail for M5/M7 in-line valves	Incl. screws and seal	**566462**	**VABB-L1-10-S**
Separator				Technical data ➔ Internet: vabd
	For manifold rail for M5/M7 in-line valves	Separator for pressure zones	**569995**	**VABD-8-B**
Supply plate				Technical data ➔ Internet: vabf
	For manifold rail for M5 in-line valves	Incl. screws and seal	**569991**	**VABF-L1-10-P3A4-M5**
	For manifold rail for M7 in-line valves		**569992**	**VABF-L1-10-P3A4-M7**
Seals for in-line valves				Technical data ➔ Internet: vabd
	M5	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**566672**	**VABD-L1-10X-S-M5**
	M7		**566673**	**VABD-L1-10X-S-M7**
Vertical supply plate				
	Pneumatic connection 1: M7	Terminal code CP	**574592**	**VABF-L1-P3A3-M7**
Vertical pressure exhaust plate				
	Pneumatic connection 3, 5: M7	Terminal code CR	**574594**	**VABF-L1-P7A13-M7**

Solenoid valves VUVG-L14 and VUVG-S14, in-line valves

Order code – In-line valves G1/8

VUVG	–		14	–		–					–		–				L	–	

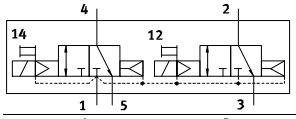
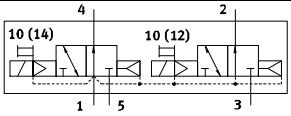
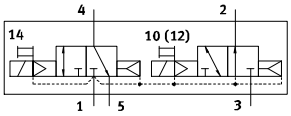
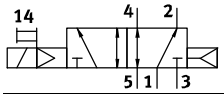
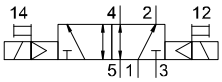
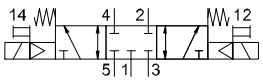
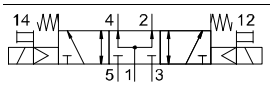
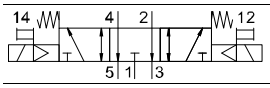
Valve design

 In-line, individual valve	**L**
 In-line, manifold valve incl. seal and screws	**S**

Width

14 mm	**14**

Valve functions

	**T32C**
	**T32U**
	**T32H**
	**M52**
	**B52**
	**P53C**
	**P53U**
	**P53E**

Reset method

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

Pilot air supply

Internal	–
External	**Z**

Manual override

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

Pneumatic connection

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

Exhausting with VUVG-L

QN	QS if QS
U	Silencer
–	G1/8

Operating voltage

1	24 V DC
5	12 V DC
4	5 V DC

E-box

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

Protective circuit

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

Display

L	LED

Connecting cables

W1...4	Not sheathed	for H
C1...4	Sheathed	
WS1...4	Not sheathed	for S
S1...4	Sheathed	
N1...4	M8x1, 3-pin	
N5...8	M8x1, 4-pin	

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

Technical data

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

Circuit symbol ➔ page 10

Width 14 mm

Flow rate
480 ... 730 l/min

Voltage
5, 12 and 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]	C[1]	–	–	–	C[1]	U[2]	E[3]
Stable position			Monostable							Bistable	Monostable			
Pneumatic spring reset method			Yes			No			Yes	–	No	No		
Mechanical spring reset method			No			Yes			No	–	Yes	Yes		
Vacuum operation at port 1			No			Only with external pilot air supply								
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Electric											
Type of control			Piloted											
Pilot air supply			Internal or external											
Exhaust function			With flow control											
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			Any											
Nominal size		[mm]	4.6			4.3			5.6					
Standard nominal flow rate		[l/min]	650	600	650	550	500	500	780			650	600	
Flow rate on manifold rail		[l/min]	620	580		520	480	480	730			620	580	
Switching time on/off		[ms]	8/23			11/15			14/28	–	13/40	12/40		
Changeover time		[ms]	–							8	–	20		
Width		[mm]	14											
Port	1, 2, 3, 4, 5		G1/8											
	14		M5											
Product weight		[g]	89			80			78	89	70	89		
Certification			c UL us - Recognized (OL)											
			c CSA us (OL)											
CE marking (see declaration of conformity)			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=Normally 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 gap 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Solenoid valves VUVG-L14 and VUVG-S14, in-line 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 in accordance with 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[3]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
Ambient temperature		[°C]	−5 ... +50, −5 ... +60 with holding current reduction					
Temperature of medium		[°C]	−5 ... +50, −5 ... +60 with holding current reduction					

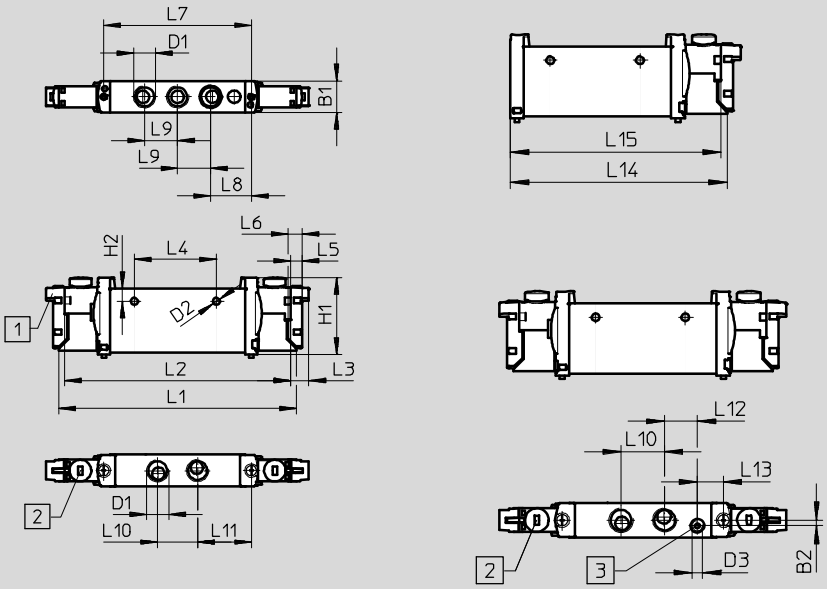
1) Pneumatic spring
2) Mechanical spring
3) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via E-box
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle	[%]	100
Protection class 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**

2x3/2-way, 5/2-way and 5/3-way valve



- Note

More dimensions
E-boxes
➔ page 80

1 Horizontal electrical connection

2 Manual override

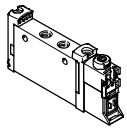
3 Port for external pilot air supply

Type	B1	B2	D1	D2	D3	H1	H2	L1	L2	L3	L4	L5	L6
VUVG-L-14 -...-G18 ...	14.4	2.3	G1⁄8	Ø 3.2	M5	34.8	5.8	107	102	8	37	4.85	6.15
VUVG-S-14 -...-G18 ...													

Type	L7	L8	L9	L10	L11	L12	L13	L14	L15
VUVG-L-14 -...-G18 ...	66.5	18.35	14.9	18	24.25	13.45	10.8	89.4	86.95
VUVG-S-14 -...-G18 ...									

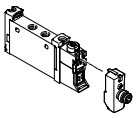
Solenoid valves VUVG-L14 and VUVG-S14, in-line valves G1⁄8

Ordering data

Ordering data			
	Description	Part No.	Type
In-line valve G1⁄8, without E-box			
	2x3/2-way valve		
	Normally closed, internal pilot air supply, pneumatic spring return	**566496**	**VUVG-L14-T32C-AT-G18-1P3**
	Normally open, internal pilot air supply, pneumatic spring return	**566497**	**VUVG-L14-T32U-AT-G18-1P3**
	Internal pilot air supply, 1x normally open, 1x normally closed, pneumatic spring return	**566498**	**VUVG-L14-T32H-AT-G18-1P3**
	Normally closed, external pilot air supply, pneumatic spring return	**566505**	**VUVG-L14-T32C-AZT-G18-1P3**
	Normally open, external pilot air supply, pneumatic spring return	**566506**	**VUVG-L14-T32U-AZT-G18-1P3**
	External pilot air supply, 1x normally open, 1x normally closed, pneumatic spring return	**566507**	**VUVG-L14-T32H-AZT-G18-1P3**
	Normally closed, internal pilot air supply, mechanical spring return	**574368**	**VUVG-L14-T32C-MT-G18-1P3**
	Normally open, internal pilot air supply, mechanical spring return	**574369**	**VUVG-L14-T32U-MT-G18-1P3**
	Internal pilot air supply, 1x normally open, 1x normally closed, mechanical spring return	**574370**	**VUVG-L14-T32H-MT-G18-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574372**	**VUVG-L14-T32C-MZT-G18-1P3**
	Normally open, external pilot air supply, mechanical spring return	**574373**	**VUVG-L14-T32U-MZT-G18-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574374**	**VUVG-L14-T32H-MZT-G18-1P3**
	5/2-way valve, single solenoid		
	Internal pilot air supply, pneumatic spring return	**566499**	**VUVG-L14-M52-AT-G18-1P3**
	External pilot air supply, pneumatic spring return	**566508**	**VUVG-L14-M52-AZT-G18-1P3**
	Internal pilot air supply, mechanical spring return	**574371**	**VUVG-L14-M52-MT-G18-1P3**
	External pilot air supply, mechanical spring return	**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**
	5/3-way valve		
	Mid-position closed, internal pilot air supply	**566501**	**VUVG-L14-P53C-T-G18-1P3**
	Mid-position exhausted, internal pilot air supply	**566502**	**VUVG-L14-P53E-T-G18-1P3**
	Mid-position pressurised, internal pilot air supply	**566503**	**VUVG-L14-P53U-T-G18-1P3**
	Mid-position closed, external pilot air supply	**566510**	**VUVG-L14-P53C-ZT-G18-1P3**
	Mid-position exhausted, external pilot air supply	**566511**	**VUVG-L14-P53E-ZT-G18-1P3**
	Mid-position pressurised, external pilot air supply	**566512**	**VUVG-L14-P53U-ZT-G18-1P3**

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

Ordering data

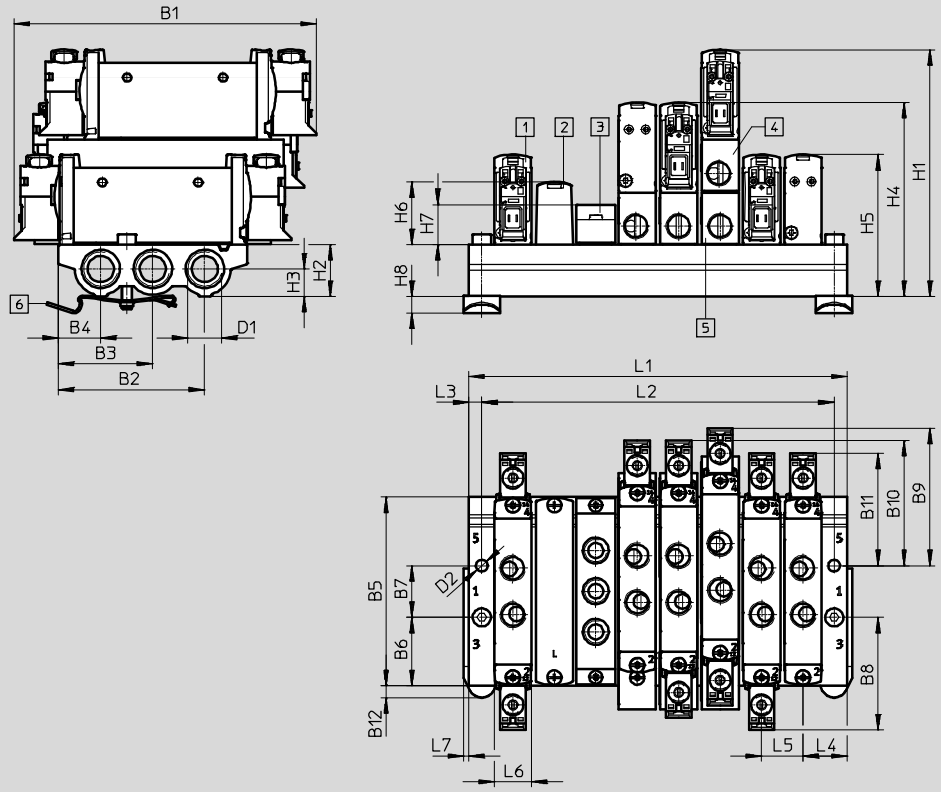
Ordering data			
	Description	Part No.	Type
In-line valve G1⁄8, with E-box R8			
	2x3/2-way valve		
	Normally closed, internal pilot air supply, pneumatic spring return	**574226**	**VUVG-L14-T32C-AT-G18-1R8L**
	Normally open, internal pilot air supply, pneumatic spring return	**574227**	**VUVG-L14-T32U-AT-G18-1R8L**
	1x normally open, 1x normally closed, internal pilot air supply, pneumatic spring return	**574228**	**VUVG-L14-T32H-AT-G18-1R8L**
	Normally closed, external pilot air supply, pneumatic spring return	**8031504**	**VUVG-L14-T32C-MT-G18-1R8L**
	Normally open, external pilot air supply, pneumatic spring return	**8031505**	**VUVG-L14-T32U-MT-G18-1R8L**
	1x normally open, 1x normally closed, external pilot air supply, pneumatic spring return	**8031506**	**VUVG-L14-T32H-MT-G18-1R8L**
	5/2-way valve, single solenoid		
	Internal pilot air supply, pneumatic spring return	**574229**	**VUVG-L14-M52-AT-G18-1R8L**
	Internal pilot air supply, mechanical spring return	**8031508**	**VUVG-L14-M52-MT-G18-1R8L**
	5/2-way valve, double solenoid		
	Internal pilot air supply	**574230**	**VUVG-L14-B52-T-G18-1R8L**
	5/3-way valve		
	Mid-position closed, internal pilot air supply	**574231**	**VUVG-L14-P53C-T-G18-1R8L**
	Mid-position exhausted, internal pilot air supply	**574233**	**VUVG-L14-P53E-T-G18-1R8L**
	Mid-position pressurised, internal pilot air supply	**574232**	**VUVG-L14-P53U-T-G18-1R8L**

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 E-boxes ➔ page 80

1 Solenoid valve, vertical electrical connection
2 Blanking plate
3 Supply plate, ports 1, 3 and 5: G1/8
4 Vertical pressure supply plate
5 Vertical pressure exhaust plate
6 H-rail mounting (two M4x25 screws to DIN 912 are required for mounting)

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	D1	D2
VUVG-S14 -...-G18 ...	116.6	56.6	36.5	16.4	72.9	26.5	20	43.5	53.1	48.3	43.5	4.5	G¼	4.5

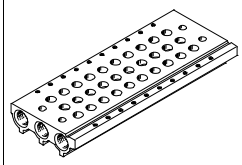
Type	H1	H2	H3	H4	H5	H6	H7	H8	L3	L4	L5	L6	L7
VUVG-S14 -...-G18 ...	95.3	20	10.6	74.9	54.8	23.9	15.4	6.5	5	17	16	14.5	2

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16	22
L1 [mm]	50	66	82	98	114	130	146	162	178	210	242	274	306
L2 [mm]	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

	Port	CRC	Material[2]	Operating pressure	Max. tightening torque for assembly [Nm]		
	1, 3, 5			[bar]	Valve	H-rail	Wall
	G¼	2[1]	Wrought aluminium alloy	–0.9 … 10	0.65	1.5	3

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

Order code – Manifold rails

VABM	–	L1	–	14	S	–	G14	–	

Manifold assembly parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

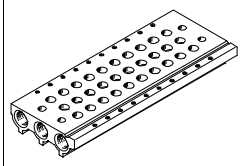
Valve width	
14 mm	**14**

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

Ports 1, 3, 5	
G14	G¼

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

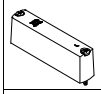
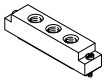
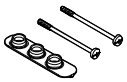
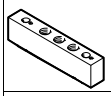
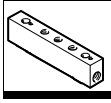
Ordering data – Manifold rail

	Description		Part No.	Type
Manifold rail for in-line valves (manifold assembly)				
	For valve 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**

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 manifold rail for G1⁄8 in-line valves	Incl. screws and seal	**569989**	**VABB-L1-14**
Separator				Technical data ➔ Internet: vabd
	For manifold rail for G1⁄8 in-line valves	Separator for pressure zones	**569996**	**VABD-10-B**
Supply plate				Technical data ➔ Internet: vabf
	For manifold rail for G1⁄8 in-line valves	Incl. screws and seal	**569993**	**VABF-L1-14-P3A4-G18**
Seals for in-line valves				Technical data ➔ Internet: vabd
	G1⁄8	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**566675**	**VABD-L1-14X-S-G18**
Vertical supply plate				
	Pneumatic connection 1: G1/8	Terminal code CP	**574593**	**VABF-L1-P3A3-G18**
Vertical pressure exhaust plate				
	Pneumatic connection 3, 5: G1/8	Terminal code CR	**574595**	**VABF-L1-P7A13-G18**

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

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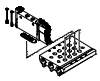
Order code – In-line valves G1/4

VUVG	–		18	–		–					–		–				L	–	

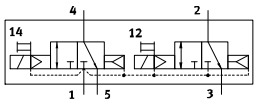
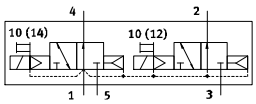
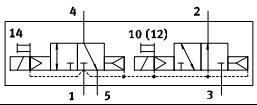
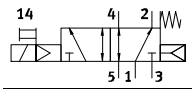
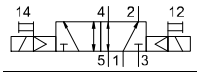
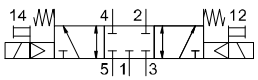
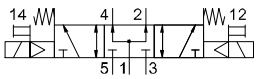
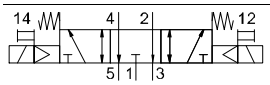
Valve design

 In-line, individual valve	L
 In-line, manifold valve incl. seal and screws	S

Width

18 mm	18

Valve functions

	T32C
	T32U
	T32H
	M52
	B52
	P53C
	P53U
	P53E

Reset method

Pneumatic spring for T32 and M52	A
Mechanical spring for T32 and M52	M
Pneu./mech. spring for M52	R
With B52 and P53	–

Pilot air supply

Internal	–
External	Z

Manual override

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

Connecting cables

W1...4	Not sheathed	 for H
C1...4	Sheathed	
WS1...4	Not sheathed	 for S
S1...4	Sheathed	
N1...4	M8x1, 3-pin	
N5...8	M8x1, 4-pin	

Display

L	LED

Protective circuit

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

E-box

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

Operating voltage

1	24 V DC
5	12 V DC
4	5 V DC

Exhausting with VUVG-L

QN	QS if QS
U	Silencer
–	G1/4

Pneumatic connection

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

Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G¼

Technical data

FESTO

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

Circuit symbol ➔ page 10

Width 18 mm

Flow rate
1000 ... 1380 l/min

Voltage
5, 12 and 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]	C[1]	–	–	–	C[1]	U[2]	E[3]
Stable position			Monostable							Bistable	Monostable			
Pneumatic spring reset method			Yes			No			Yes[5]	–	No	No		
Mechanical spring reset method			No			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1			No			Only with external pilot air supply								
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Electric											
Type of control			Piloted											
Pilot air supply			Internal/external											
Exhaust function			With flow control											
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			Any											
Nominal size		[mm]	5.7						6.9	7.3	6.9	6.5	6.3	
Standard nominal flow rate		[l/min]	1000						1300	1380	1300	1200	1000	
Flow rate on manifold rail			1000						1300	1380	1300	1200	1000	
Switching time on/off		[ms]	13/27			15/22			15/31		10/45	15/48		
Changeover time		[ms]	–							11	–	29		
Width		[mm]	18											
Port	1, 2, 3, 4, 5		G¼											
	12/14		M5											
Product weight		[g]	164						154	164	154	160		
Certification			c UL us - Recognized (OL)											
			c CSA us (OL)											
CE marking (see declaration of conformity)			To EU EMC Directive[7]											
Corrosion resistance class CRC[8]			2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Normally 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 gap 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G¼

Technical data

FESTO

Operating and environmental conditions								
Valve function			T32-A[1]	T32-M[3]	M52-R[2]	B52	M52-M[3]	P53
Operating medium			Compressed air in accordance with 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				
Pilot pressure[4]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
Ambient temperature		[°C]	–5 ... +50, –5 ... +60 with holding current reduction					
Temperature of medium		[°C]	–5 ... +50, –5 ... +60 with holding current reduction					

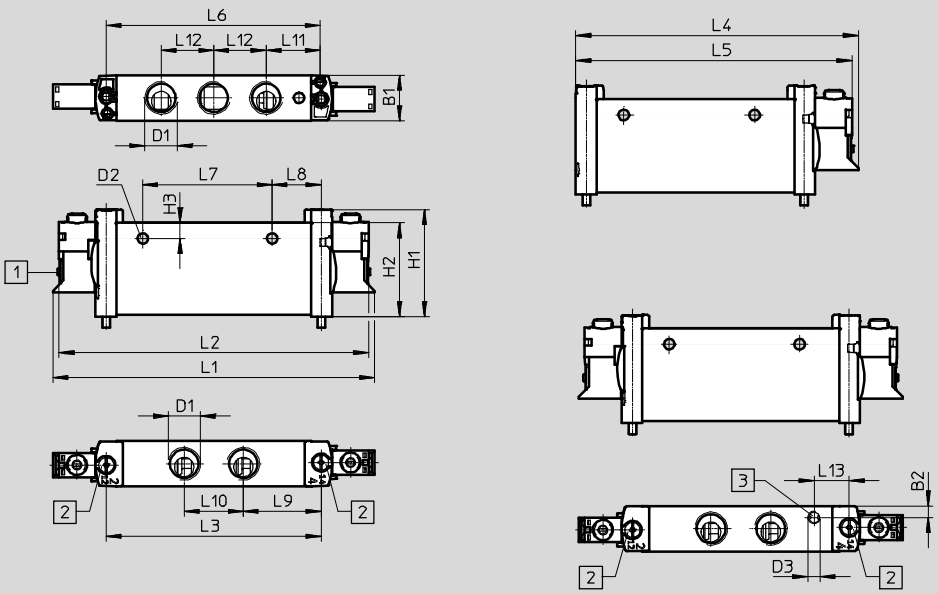
1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via E-box
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle	[%]	100
Protection class 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**

2x3/2-way, 5/2-way and 5/3-way valve



Note

More dimensions E-boxes ➔ page 80

1 Electrical connection

2 Mounting screw

3 Port for external pilot air supply

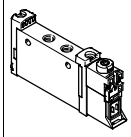
Type	B1	B2	D1	D2	D3	H1	H2	H3	L1	L2	L3	L4	L5
VUVG-L-18 -...	18.3	4.5	G¼	Ø 4.2	M5	43.1	37.8	6.4	129.4	124.4	86.4	112.2	109.7
VUVG-S-18 -...													

Type	L6	L7	L8	L9	L10	L11	L12	L13
VUVG-L-18 -...	86	52	19.7	31.3	23.8	21.7	21.1	14
VUVG-S-18 -...								

Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G¼

FESTO

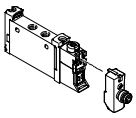
Ordering data

Ordering data			
	Description	Part No.	Type
In-line valve G¼, without E-box			
	2x3/2-way valve		
	Normally closed, internal pilot air supply, pneumatic spring return	**574422**	**VUVG-L18-T32C-AT-G14-1P3**
	Normally open, internal pilot air supply, pneumatic spring return	**574423**	**VUVG-L18-T32U-AT-G14-1P3**
	Internal pilot air supply, 1x normally open, 1x normally closed, pneumatic spring return	**574424**	**VUVG-L18-T32H-AT-G14-1P3**
	Normally closed, internal pilot air supply, mechanical spring return	**574425**	**VUVG-L18-T32C-MT-G14-1P3**
	Normally open, internal pilot air supply, mechanical spring return	**574426**	**VUVG-L18-T32U-MT-G14-1P3**
	Internal pilot air supply, 1x normally open, 1x normally closed, mechanical spring return	**574427**	**VUVG-L18-T32H-MT-G14-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574434**	**VUVG-L18-T32C-MZT-G14-1P3**
	Normally open, external pilot air supply, mechanical spring return	**574435**	**VUVG-L18-T32U-MZT-G14-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574436**	**VUVG-L18-T32H-MZT-G14-1P3**
	5/2-way valve, single solenoid		
	Internal pilot air supply, pneumatic/mechanical spring return	**574428**	**VUVG-L18-M52-RT-G14-1P3**
	Internal pilot air supply, mechanical spring return	**574429**	**VUVG-L18-M52-MT-G14-1P3**
	External pilot air supply, mechanical spring return	**574438**	**VUVG-L18-M52-MZT-G14-1P3**
	External pilot air supply, pneumatic/mechanical spring return	**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**
	5/3-way valve		
	Mid-position closed, internal pilot air supply	**574431**	**VUVG-L18-P53C-T-G14-1P3**
	Mid-position exhausted, internal pilot air supply	**574432**	**VUVG-L18-P53E-T-G14-1P3**
	Mid-position pressurised, internal pilot air supply	**574433**	**VUVG-L18-P53U-T-G14-1P3**
	Mid-position closed, external pilot air supply	**574440**	**VUVG-L18-P53C-ZT-G14-1P3**
	Mid-position exhausted, external pilot air supply	**574441**	**VUVG-L18-P53E-ZT-G14-1P3**
	Mid-position pressurised, external pilot air supply	**574442**	**VUVG-L18-P53U-ZT-G14-1P3**

New

Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G¼

Ordering data

Ordering data			
	Description	Part No.	Type
In-line valve G¼, with E-box R8			
	2x3/2-way valve		
	Normally closed, internal pilot air supply, pneumatic spring return	**8031525**	**VUVG-L18-T32C-AT-G14-1R8L**
	Normally open, internal pilot air supply, pneumatic spring return	**8031526**	**VUVG-L18-T32U-AT-G14-1R8L**
	1x normally open, 1x normally closed, internal pilot air supply, pneumatic spring return	**8031527**	**VUVG-L18-T32H-AT-G14-1R8L**
	Normally closed, external pilot air supply, mechanical spring return	**8031528**	**VUVG-L18-T32C-MT-G14-1R8L**
	Normally open, external pilot air supply, mechanical spring return	**8031529**	**VUVG-L18-T32U-MT-G14-1R8L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**8031530**	**VUVG-L18-T32H-MT-G14-1R8L**
	5/2-way valve, single solenoid		
	Internal pilot air supply, pneumatic/mechanical spring return	**8031531**	**VUVG-L18-M52-RT-G14-1R8L**
	Internal pilot air supply, mechanical spring return	**8031532**	**VUVG-L18-M52-MT-G14-1R8L**
	5/2-way valve, double solenoid		
	Internal pilot air supply	**8031533**	**VUVG-L18-B52-T-G14-1R8L**
	5/3-way valve		
	Mid-position closed, internal pilot air supply	**8031534**	**VUVG-L18-P53C-T-G14-1R8L**
	Mid-position exhausted, internal pilot air supply	**8031535**	**VUVG-L18-P53E-T-G14-1R8L**
	Mid-position pressurised, internal pilot air supply	**8031536**	**VUVG-L18-P53U-T-G14-1R8L**

Solenoid valves VUVG-S18, in-line valves G¼

Manifold assembly

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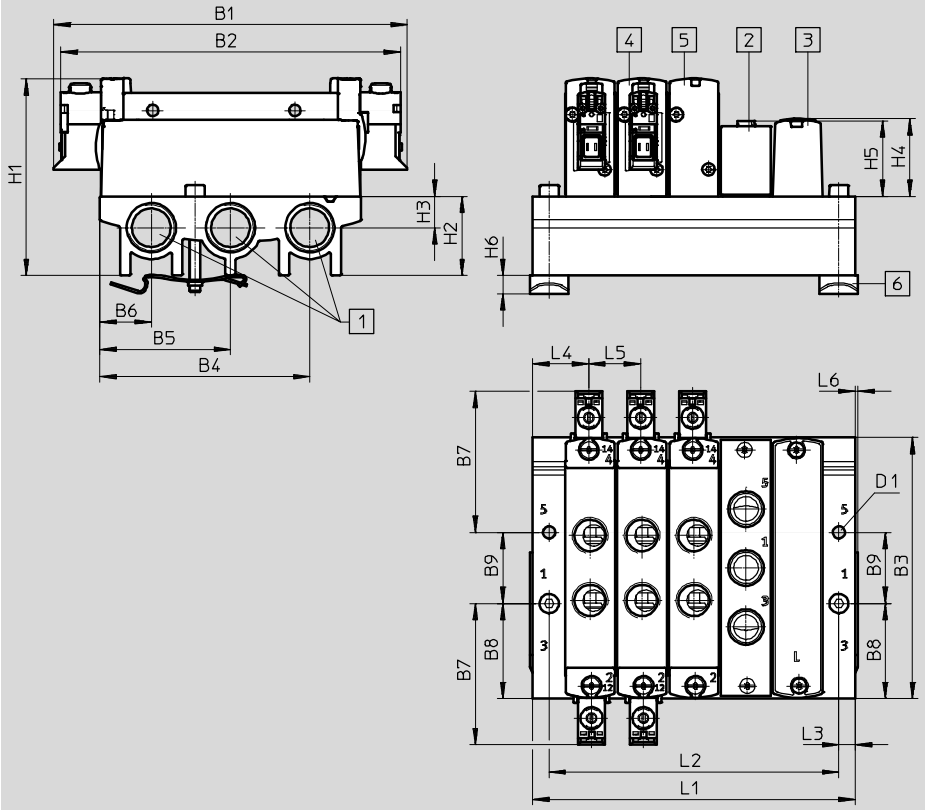
In-line valves for manifold assembly

Dimensions

Download CAD data ➔ **www.festo.com**



- Note

More dimensions E-boxes
➔ page 80

1 Ports 1, 3 and 5: G⅜ (at both ends)
2 Blanking plate
3 Supply plate, ports 1, 3 and 5: G¼
4 Double solenoid valve
5 Single solenoid valve
6 H-rail mounting (two M4x35 screws to DIN 912 are required for mounting)

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1
VUVG-S18 -...-G14 ...	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
VUVG-S18 -...-G14 ...	72.1	29	11.5	28.4	27.6	6.5	6	20.5	19	1

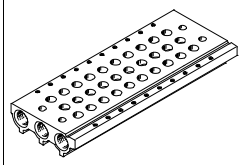
Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1 [mm]	61	80	99	118	137	156	175	194	213	251	289	327
L2 [mm]	49	68	87	106	125	144	163	182	201	239	277	315
VABM weight [g]	118	159	200	241	282	323	364	405	446	528	610	692

Solenoid valves VUVG-S18, in-line valves G¼

Ordering data

FESTO

Technical data – Manifold rails

	Port	CRC	Material[2]	Operating pressure	Max. tightening torque for assembly [Nm]		
	1, 3, 5			[bar]	Valve	H-rail	Wall
	G⅜	2[1]	Wrought aluminium alloy	–0.9 ... 10	1.18	1.5	3

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

Order code – Manifold rails

VABM	–	L1	–	18	S	–	G38	–	

Manifold assembly parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

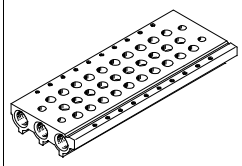
Valve width	
18 mm	**18**

Manifold rail with ports 1, 3, 5	
For G¼ in-line valves	**S**

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

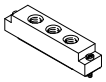
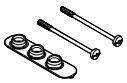
Ports 1, 3, 5	
G38	G⅜

Ordering data – Manifold rail

	Description		Part No.	Type
Manifold rail for in-line valve				
	For valve size G¼	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**

Solenoid valves VUVG-S18, in-line valves G¼

Ordering data

Ordering data – Accessories				
	Description		Part No.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For manifold rail for G¼ in-line valves	Incl. screws and seal	**574482**	**VABB-L1-18**
Separator				Technical data ➔ Internet: vabd
	For manifold rail for G¼ in-line valves	Separator for pressure zones	**574483**	**VABD-14-B**
Supply plate				Technical data ➔ Internet: vabf
	For manifold rail for G¼ in-line valves	Incl. screws and seal	**574481**	**VABF-L1-18-P3A4-G14**
Seals for in-line valves				Technical data ➔ Internet: vabd
	G¼	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**574479**	**VABD-L1-18X-S-G14**

Note

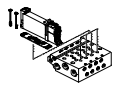
Connect supply plate at port 1 with compressed air. Reverse operation (compressed air at port 3/5) is not permissible.

Solenoid valves VUVG-B10A, sub-base valves

Order code – Sub-base valves M3

VUVG	–	B	10A	–		–		Z	

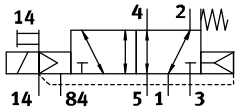
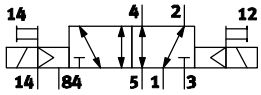
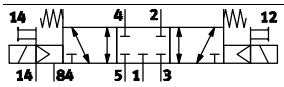
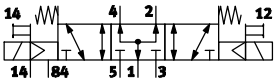
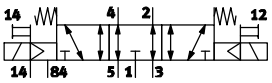
Valve design

 Sub-base, manifold valve incl. seal and screws	**B**

Width

10 mm	**10A**

Valve functions

	**M52**
	**B52**
	**P53C**
	**P53U**
	**P53E**

Reset method

Mech. spring for M52	**M**
Pneu./mech. spring for M52	**R**
With B52 and P53	**–**

Pilot air supply

External	**Z**

Manual override

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

F	–				L	–		

Connecting cables

W1…4	Not sheathed	 for H
C1…4	Sheathed	
WS1…4	Not sheathed	 for S
S1…4	Sheathed	
N1…4	M8x1, 3-pin	
N5…8	M8x1, 4-pin	

Display

L	LED

Protective circuit

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

E-box

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

Operating voltage

1	24 V DC
5	12 V DC
4	5 V DC

Pneumatic connection

F	In the manifold rail

Solenoid valves VUVG-B10A, sub-base valves

Technical data

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

Circuit symbol ➔ page 10

Width 10 mm

Flow rate
90 ... 100 l/min

Voltage
5, 12 and 24 V DC

General technical data								
Valve function			M52-R	B52	M52-M	P53		
Normal position			–	–	–	C[1]	U[2]	E[3]
Stable position			Monostable	Bistable	Monostable	Monostable		
Pneumatic spring reset method			Yes[4]	–	No	No		
Mechanical spring reset method			Yes[4]	–	Yes	Yes		
Vacuum operation at port 1			Only with external pilot air supply					
Design			Piston spool valve					
Sealing principle			Soft					
Actuation type			Electric					
Type of control			Piloted					
Pilot air supply			External, internal; can be selected via sub-base					
Exhaust function			With flow control					
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting					
Type of mounting			On manifold rail					
Mounting position			Any					
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		
Width		[mm]	10					
Port	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		
Certification			c UL us - Recognized (OL)					
			c CSA us (OL)					
CE marking (see declaration of conformity)			To EU EMC Directive[5]					
Corrosion resistance class CRC[6]			2					

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Normally 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Solenoid valves VUVG-B10A, sub-base valves

Technical data

Operating and environmental conditions						
Valve function			M52-R[1]	B52	M52-M[2]	P53
Operating medium			Compressed air in accordance with 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, –5 ... +60 with holding current reduction			
Temperature of medium		[°C]	–5 ... +50, –5 ... +60 with holding current reduction			

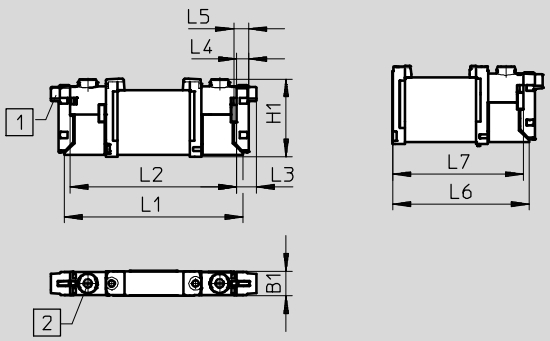
1) Mixed, pneumatic/mechanical spring
2) Mechanical spring
3) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via E-box
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle	[%]	100
Protection class 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
E-boxes
➔ page 80

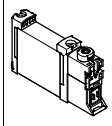
1 Vertical electrical connection

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

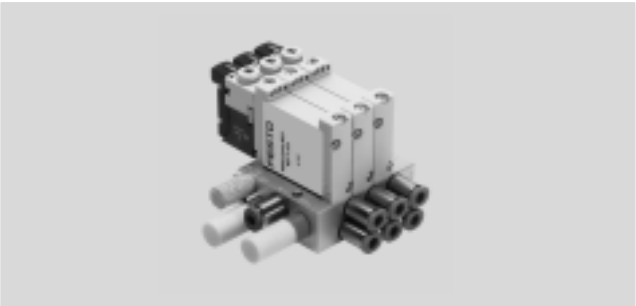
Ordering data

Ordering data			
	Description	Part No.	Type
Sub-base valve M3, without E-box			
	5/2-way valve, single solenoid		
	External pilot air supply, pneumatic/mechanical spring return	**566448**	**VUVG-B10A-M52-RZT-F-1P3**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**566450**	**VUVG-B10A-P53C-ZT-F-1P3**
	Mid-position exhausted, external pilot air supply	**566451**	**VUVG-B10A-P53E-ZT-F-1P3**
	Mid-position pressurised, external pilot air supply	**566452**	**VUVG-B10A-P53U-ZT-F-1P3**

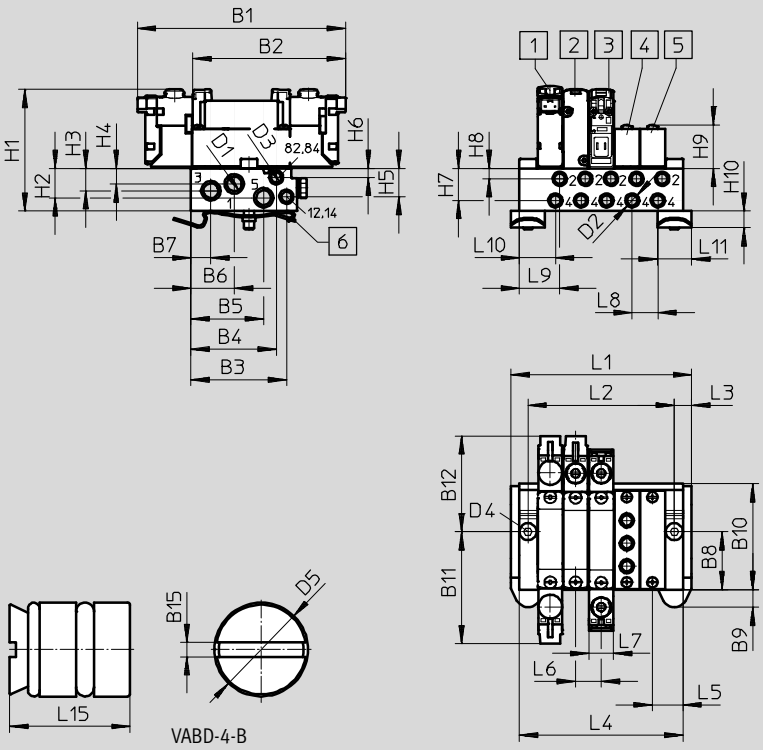
Solenoid valves VUVG-B10A, sub-base valves

Manifold assembly

Sub-base valve for manifold assembly
M5 connection



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



- Note

More dimensions
E-boxes
➔ page 80

1 Solenoid valve
2 Solenoid valve
3 Solenoid valve
4 Supply plate
5 Blanking plate
6 H-rail mounting (two screws M4x25 to DIN 912 are required)

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
VUVG-B10A -...-F- ...	84.9	62.4	39.12	34.95	29.83	17.75	8.15	24	7.15	43.5	45.75	39.15

Type	B15	D1	D2	D3	D4	D5	H1	H2	H3	H4	H5	H6
VUVG-B10A -...-F- ...	0.48	M7	M5	M5	Ø 4.5	Ø 4	53.1	12	9.1	6.3	11.57	3.6

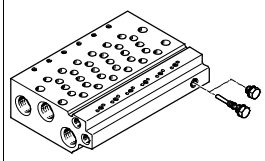
Type	H7	H8	H9	H10	H15	L3	L5	L6	L7	L8	L9	L10	L11	L15
VUVG-B10A -...-F- ...	13.1	4.2	16.2	6.8	1.9	7.5	12.5	10.5	10.2	10.5	16.5	14.7	14	8.5

Solenoid valves VUVG-B10A, sub-base valves

Ordering data

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1 [mm]	43.5	54	64.5	75	85.5	97	107.5	117	127.5	148.5	169.5	190.5
L2 [mm]	28.5	39	49.5	60	70.5	81	91.5	102	112.5	133.5	154.5	175.5
L4 [mm]	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)]

	Port			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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
3) Note on materials: RoHS-compliant.

Order code – Manifold rails M3

VABM	–	L1	–	10A		–	M7	–	

Manifold assembly parts
Manifold rail **VABM**

Valve series
VUVG **L1**

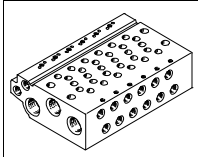
Valve width
10 mm **10A**

Rail with ports 1, 2, 3, 4, 5, 12/14, 82/84
Port 2 and 4 in M5 **W**

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

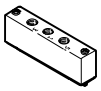
Ports 1, 3, 5
M7 M7

Ordering data – Manifold rails

	Description		Part No.	Type
Manifold rail for sub-base valves				
	For valve 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**

Solenoid valves VUVG-B10A, sub-base valves

Ordering data

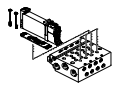
Ordering data – Accessories				
	Description		Part No.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For manifold rail 10AW	Incl. screws and seal	**569986**	**VABB-L1-10A**
Separator				Technical data ➔ Internet: vabd
	For manifold rail 10AW	Separator for pressure zones	**570872**	**VABD-4.2-B**
Supply plate				Technical data ➔ Internet: vabf
	For manifold rail 10AW	Incl. screws and seal	**569990**	**VABF-L1-10A-P3A4-M5**
Seals				Technical data ➔ Internet: vabd
	For sub-base valves B10A	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**566671**	**VABD-L1-10AB-S-M3**

Solenoid valves VUVG-B10, sub-base valves

Order code – Sub-base valves M5/M7

VUVG	–	B	10	–		–		Z	

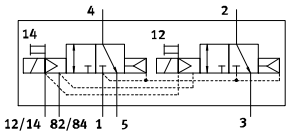
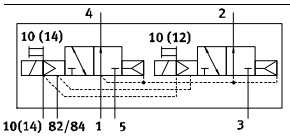
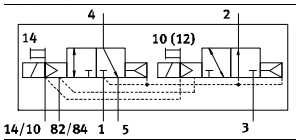
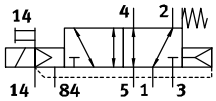
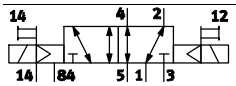
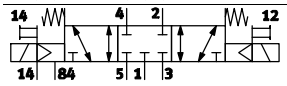
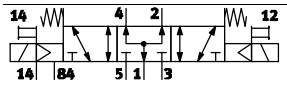
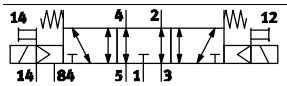
Valve design

 Sub-base, manifold valve incl. seal and screws	B

Width

10 mm	10

Valve functions

	T32C
	T32U
	T32H
	M52
	B52
	P53C
	P53U
	P53E

Reset method

Pneumatic spring for T32 and M52	A
Mechanical spring for T32 and M52	M
Pneu./mech. spring for M52	R
With B52 and P53	–

Pilot air supply

External	Z

Manual override

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

F	–				L	–	

Connecting cables

W1...4	Not sheathed	 for H
C1...4	Sheathed	
WS1...4	Not sheathed	 for S
S1...4	Sheathed	
N1...4	M8x1, 3-pin	
N5...8	M8x1, 4-pin	

Display

L	LED

Protective circuit

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

E-box

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

Operating voltage

1	24 V DC
5	12 V DC
4	5 V DC

Pneumatic connection

F	In the manifold rail

Solenoid valves VUVG-B10, sub-base valves

Technical data

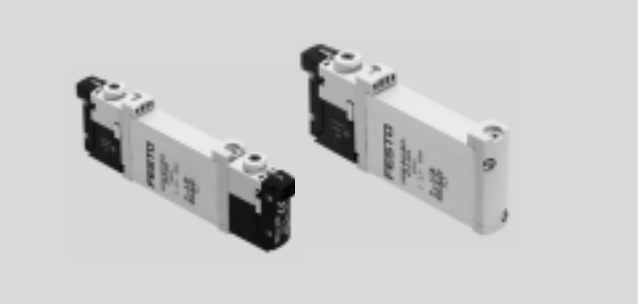
Function
2x3/2C, 2x3/2U, 2x3/2H
5/2-way, single solenoid
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ page 10

Width 10 mm

Flow rate
120 ... 270 l/min

Voltage
5, 12 and 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			Monostable							Bistable	Monostable	Monostable		
Pneumatic spring reset method			Yes			No			Yes[5]	–	No	No		
Mechanical spring reset method			No			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1			No			Only with external pilot air supply								
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Electric											
Type of control			Piloted											
Pilot air supply			External, internal; can be selected via sub-base											
Exhaust function			With flow control											
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting			On manifold rail											
Mounting position			Any											
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	10/30		
Changeover time		[ms]	–							7		16		
Width		[mm]	10											
Port	1, 3, 5		G⅛ 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		
Certification			c UL us - Recognized (OL)											
			c CSA us (OL)											
CE marking (see declaration of conformity)			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=Normally 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Solenoid valves VUVG-B10, sub-base valves

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 in accordance with 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, –5 ... +60 with holding current reduction					
Temperature of medium		[°C]	–5 ... +50, –5 ... +60 with holding current reduction					

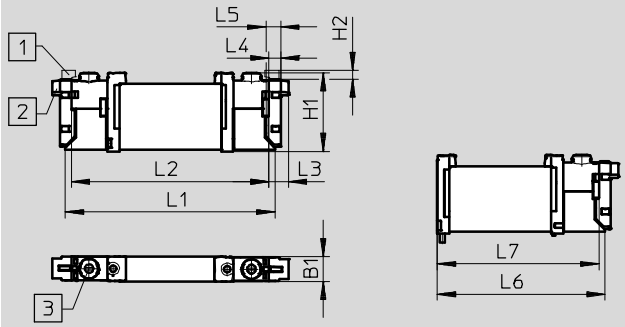
1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via E-box
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle	[%]	100
Protection class to EN 60529		IP40 (with plug socket)

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

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

2x3/2-way, 5/2-way and 5/3-way valve



- Note

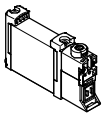
More dimensions
E-boxes
➔ page 80

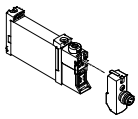
1 Vertical electrical connection
2 Horizontal electrical connection
3 Manual override

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

Ordering data

Ordering data			
	Description	Part No.	Type
Sub-base valve M5/M7, without E-box			
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**566487**	**VUVG-B10-T32C-AZT-F-1P3**
	Normally open, external pilot air supply, pneumatic spring return	**566488**	**VUVG-B10-T32U-AZT-F-1P3**
	External pilot air supply, 1x normally open, 1x normally closed, pneumatic spring return	**566489**	**VUVG-B10-T32H-AZT-F-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574364**	**VUVG-B10-T32C-MZT-F-1P3**
	Normally open, external pilot air supply, mechanical spring return	**574365**	**VUVG-B10-T32U-MZT-F-1P3**
	External pilot air supply, 1x normally open, 1x normally closed, mechanical spring return	**574366**	**VUVG-B10-T32H-MZT-F-1P3**
	5/2-way valve, single solenoid		
	External pilot air supply, pneumatic/mechanical spring return	**566490**	**VUVG-B10-M52-RZT-F-1P3**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**566492**	**VUVG-B10-P53C-ZT-F-1P3**
	Mid-position exhausted, external pilot air supply	**566493**	**VUVG-B10-P53E-ZT-F-1P3**
	Mid-position pressurised, external pilot air supply	**566494**	**VUVG-B10-P53U-ZT-F-1P3**

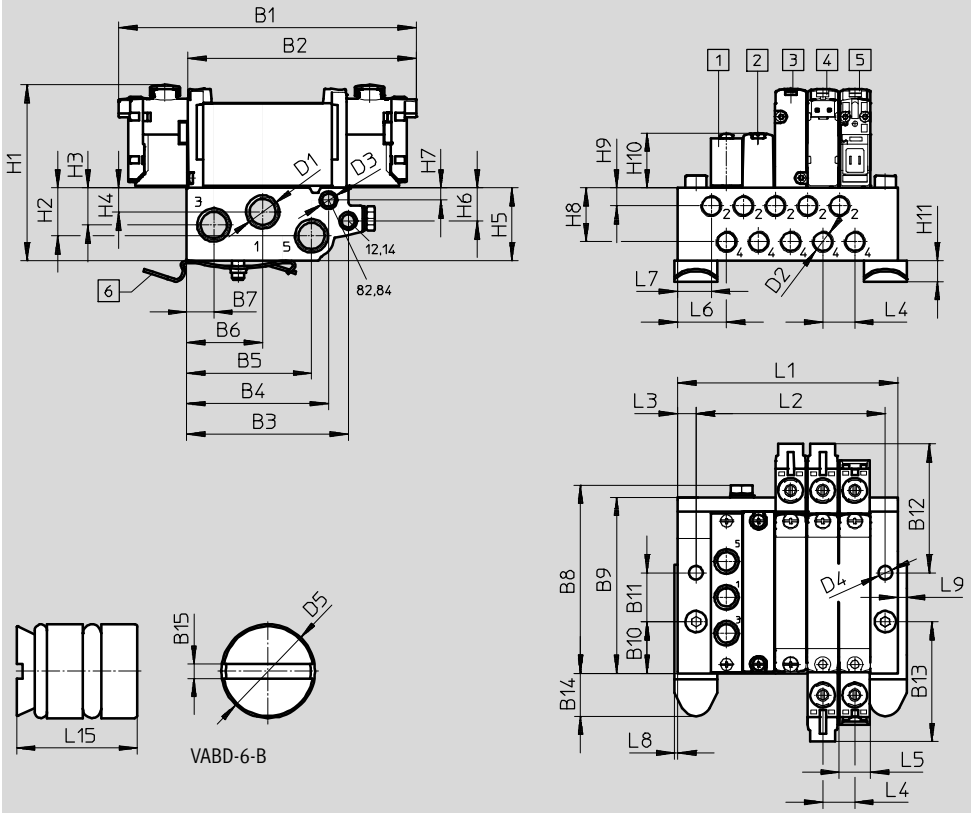
Ordering data			
	Description	Part No.	Type
Sub-base valve M5/M7, with E-box R8			
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**574234**	**VUVG-B10-T32C-AZT-F-1R8L**
	Normally open, external pilot air supply, pneumatic spring return	**574235**	**VUVG-B10-T32U-AZT-F-1R8L**
	1x normally open, 1x normally closed, external pilot air supply, pneumatic spring return	**574236**	**VUVG-B10-T32H-AZT-F-1R8L**
	Normally closed, external pilot air supply, mechanical spring return	**8031492**	**VUVG-B10-T32C-MZT-F-1R8L**
	Normally open, external pilot air supply, mechanical spring return	**8031493**	**VUVG-B10-T32U-MZT-F-1R8L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**8031494**	**VUVG-B10-T32H-MZT-F-1R8L**
	5/2-way valve, single solenoid		
	External pilot air supply, pneumatic/mechanical spring return	**574237**	**VUVG-B10-M52-RZT-F-1R8L**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**574239**	**VUVG-B10-P53C-ZT-F-1R8L**
	Mid-position exhausted, external pilot air supply	**574241**	**VUVG-B10-P53E-ZT-F-1R8L**
	Mid-position pressurised, external pilot air supply	**574240**	**VUVG-B10-P53U-ZT-F-1R8L**

Solenoid valves VUVG-B10, sub-base valves

Manifold assembly

Sub-base valve for manifold assembly
M5 or M7 connection

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



- Note

More dimensions
E-boxes
➔ page 80

1 Supply plate
2 Blanking plate
3 Solenoid valve
4 Solenoid valve
5 Solenoid valve
6 H-rail mounting (two M4x30 screws to DIN 912 are required)

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
VUVG-B10 -...-F- ...	97.5	74.8	52.9	46.5	40.9	24.9	8.9	62	57.7	16.9	16	42.2

Type	B13	B14	B15	D1	D2	D3	D4	D5	H1	H2	H3	H4
VUVG-B10 -...-F- ...	39.3	14.05	1.2	G⅛	M5/M7	M5	4.5	Ø 6	56.4	15.7	12.17	7.87

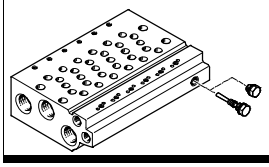
Type	H5	H6	H7	H8	H9	H10	H11	L3	L4	L5	L6	L7	L8	L9	L15
VUVG-B10 -...-F- ...	23.9	10.8	4	17.6	5.9	18	6.8	4	10.5	10.2	16	11	1	3	10

Solenoid valves VUVG-B10, sub-base valves

Manifold assembly

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16	22
L1 [mm]	48.5	59	69.5	80	90.5	101	111.5	122	132.5	153.5	174.5	195.5	258.5
L2 [mm]	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)]

	Port			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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
3) Note on materials: RoHS-compliant.

Order code – Manifold rails M5 and M7

VABM	–	L1	–	10		–	G18	–	

Manifold assembly parts
Manifold rail **VABM**

Valve series
VUVG **L1**

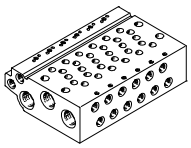
Valve width
10 mm **10**

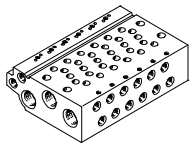
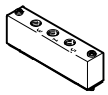
Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84
Port 2 and 4 in M5 **W**
Port 2 and 4 in M7 **HW**

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

Ports 1, 3, 5
G18 G1⁄8

Ordering data – Manifold rails

	Description		Part No.	Type
Manifold rail for sub-base valve				
	For valve 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**

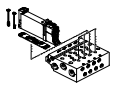
Ordering data – Accessories				
	Description		Part No.	Type
Manifold rail for sub-base valve				
	For valve size B10 (M7)	2 valve positions	**566606**	**VABM-L1-10HW-G18-2**
		3 valve positions	**566607**	**VABM-L1-10HW-G18-3**
		4 valve positions	**566608**	**VABM-L1-10HW-G18-4**
		5 valve positions	**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 manifold rail 10W/10HW, sub-base valves	Incl. screws and seal	**566495**	**VABB-L1-10-W**
Separator				Technical data ➔ Internet: vabd
	For manifold rail 10W and 10HW, sub-base valves	Separator for pressure zones	**569994**	**VABD-6-B**
Supply plate				Technical data ➔ Internet: vabf
	For manifold rail 10W	Incl. screws and seal	**569991**	**VABF-L1-10-P3A4-M5**
	For manifold rail 10HW		**569992**	**VABF-L1-10-P3A4-M7**
Seals				Technical data ➔ Internet: vabd
	For sub-base valves B10	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**566674**	**VABD-L1-10B-S-M7**

Solenoid valves VUVG-B14, sub-base valves

Order code – Sub-base valves G⅛

VUVG	–	B	14	–		–		Z	

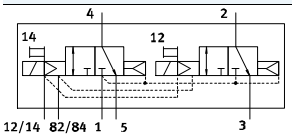
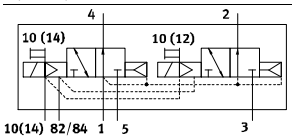
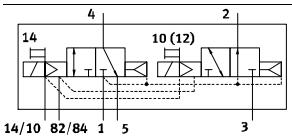
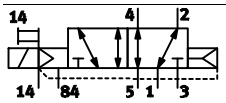
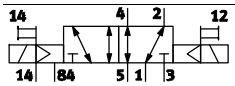
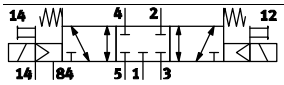
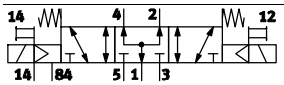
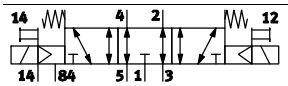
Valve design

 Sub-base, manifold valve incl. seal and screws	**B**

Width

14 mm	**14**

Valve functions

	**T32C**
	**T32U**
	**T32H**
	**M52**
	**B52**
	**P53C**
	**P53U**
	**P53E**

Reset method

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

Pilot air supply

External	**Z**

Manual override

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

F	–				L	–	

Connecting cables

W1…4	Not sheathed	 for H
C1…4	Sheathed	
WS1…4	Not sheathed	 for S
S1…4	Sheathed	
N1…4	M8x1, 3-pin	
N5…8	M8x1, 4-pin	

Display

L	LED

Protective circuit

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

E-box

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

Operating voltage

1	24 V DC
5	12 V DC
4	5 V DC

Pneumatic connection

F	In the manifold rail

Solenoid valves VUVG-B14, sub-base valves

Technical data

FESTO

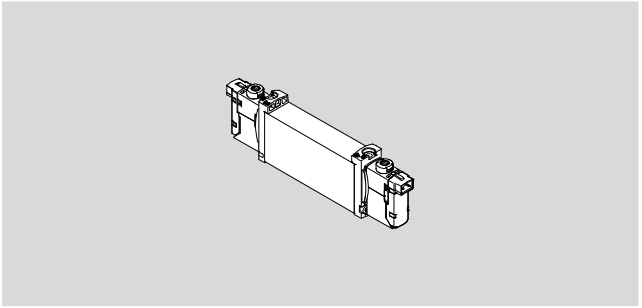
Function
2x3/2C, 2x3/2U, 2x3/2H
5/2-way, single solenoid
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ page 10

Width 14 mm

Flow rate
410 ... 580 l/min

Voltage
5, 12 and 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			Monostable							Bistable	Monostable	Monostable		
Pneumatic spring reset method			Yes			No			Yes	–	No	No		
Mechanical spring reset method			No			Yes			No	–	Yes	Yes		
Vacuum operation at port 1			No			Only with external pilot air supply								
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Electric											
Type of control			Piloted											
Pilot air supply			External, internal; can be selected via sub-base											
Exhaust function			With flow control											
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting			On manifold rail											
Mounting position			Any											
Nominal size		[mm]	4.6			4.3			5.4					
Standard nominal flow rate		[l/min]	600	580		470	450	450	680			600	580	580
Flow rate on manifold rail G1⁄8		[l/min]	540	510	540	430	410	410	580			540	510	510
Switching time on/off		[ms]	8/23			11/15			14/28	–	13/40	12/40		
Changeover time		[ms]	–							8		20		
Width		[mm]	14											
Port	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		
Certification			c UL us - Recognized (OL)											
			c CSA us (OL)											
CE marking (see declaration of conformity)			To EU EMC Directive[5]											
Corrosion resistance class CRC[6]			2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Normally 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Solenoid valves VUVG-B14, sub-base valves

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 in accordance with 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[3]		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	
Ambient temperature		[°C]	–5 ... +50, –5 ... +60 with holding current reduction					
Temperature of medium		[°C]	–5 ... +50, –5 ... +60 with holding current reduction					

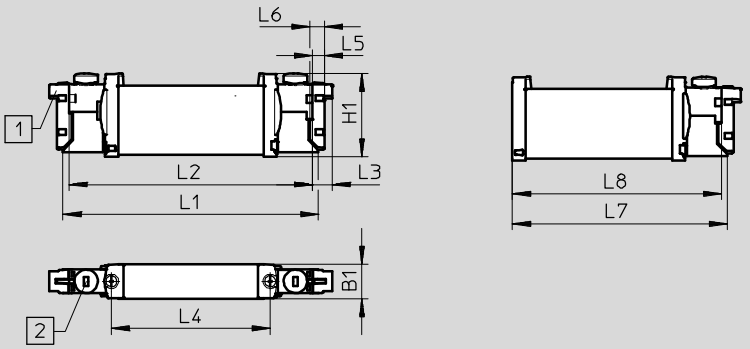
1) Pneumatic spring
2) Mechanical spring
3) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via E-box
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle	[%]	100
Protection class to EN 60529		IP40 (with plug socket)

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

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

2x3/2-way, 5/2-way and 5/3-way valve



1 Horizontal electrical connection

2 Manual override

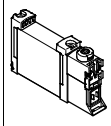
Note

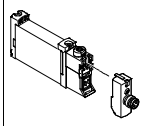
More dimensions E-boxes
➔ page 80

Type	B1	H1	L1	L2	L3	L4	L5	L6	L7	L8
VUVG-B14 -...-F ...	14.4	34.8	107	102	8	66.5	4.85	6.15	89.45	86.95

Solenoid valves VUVG-B14, sub-base valves

Ordering data

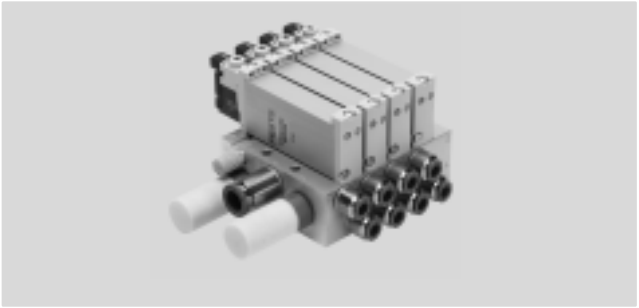
Ordering data			
	Description	Part No.	Type
Sub-base valve G1⁄8, without E-box			
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**566513**	**VUVG-B14-T32C-AZT-F-1P3**
	Normally open, external pilot air supply, pneumatic spring return	**566514**	**VUVG-B14-T32U-AZT-F-1P3**
	External pilot air supply, 1x normally open, 1x normally closed, pneumatic spring return	**566515**	**VUVG-B14-T32H-AZT-F-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574376**	**VUVG-B14-T32C-MZT-F-1P3**
	Normally open, external pilot air supply, mechanical spring return	**574377**	**VUVG-B14-T32U-MZT-F-1P3**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**574378**	**VUVG-B14-T32H-MZT-F-1P3**
	5/2-way valve, single solenoid		
	External pilot air supply, pneumatic spring return	**566516**	**VUVG-B14-M52-AZT-F-1P3**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**566518**	**VUVG-B14-P53C-ZT-F-1P3**
	Mid-position exhausted, external pilot air supply	**566519**	**VUVG-B14-P53E-ZT-F-1P3**
	Mid-position pressurised, external pilot air supply	**566520**	**VUVG-B14-P53U-ZT-F-1P3**

Ordering data			
	Description	Part No.	Type
Sub-base valve G1⁄8, with E-box R8			
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**574242**	**VUVG-B14-T32C-AZT-F-1R8L**
	Normally open, external pilot air supply, pneumatic spring return	**574243**	**VUVG-B14-T32U-AZT-F-1R8L**
	1x normally open, 1x normally closed, external pilot air supply, pneumatic spring return	**574244**	**VUVG-B14-T32H-AZT-F-1R8L**
	Normally closed, external pilot air supply, mechanical spring return	**578248**	**VUVG-B14-T32C-MZT-F-1R8L**
	Normally open, external pilot air supply, mechanical spring return	**8031517**	**VUVG-B14-T32U-MZT-F-1R8L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**8031518**	**VUVG-B14-T32H-MZT-F-1R8L**
	5/2-way valve, single solenoid		
	External pilot air supply, pneumatic spring return	**574245**	**VUVG-B14-M52-AZT-F-1R8L**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**574247**	**VUVG-B14-P53C-ZT-F-1R8L**
	Mid-position exhausted, external pilot air supply	**574249**	**VUVG-B14-P53E-ZT-F-1R8L**
	Mid-position pressurised, external pilot air supply	**574248**	**VUVG-B14-P53U-ZT-F-1R8L**

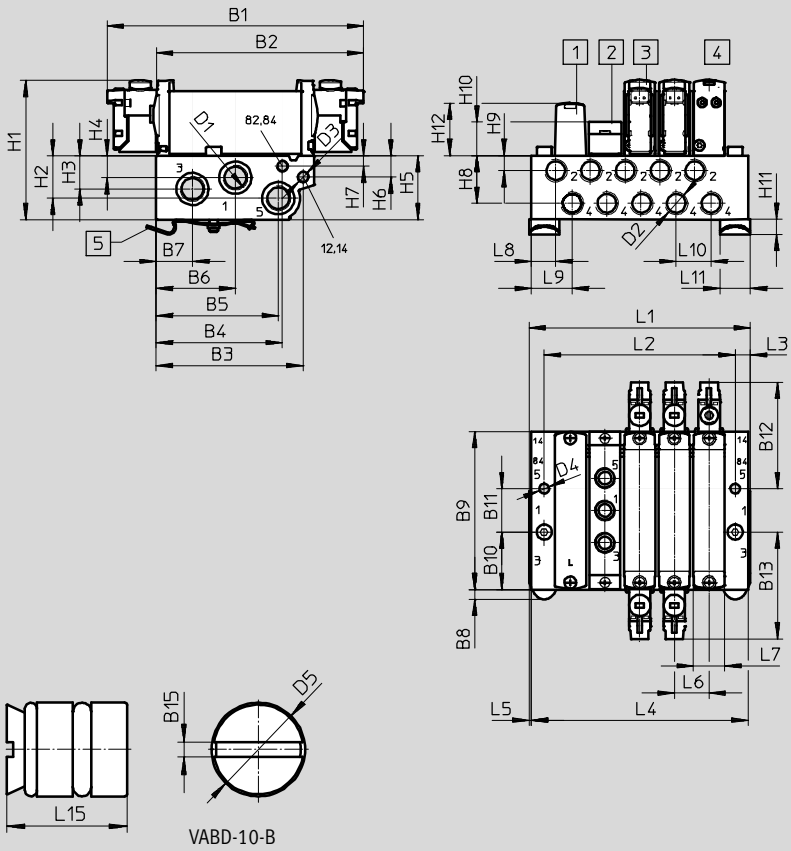
Solenoid valves VUVG-B14, sub-base valves

Manifold assembly

Sub-base valve for manifold assembly
G⅛ connection



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



VABD-10-B

- Note

More dimensions
E-boxes
➔ page 80

1 Blanking plate
2 Supply plate
3 Solenoid valve, double solenoid
4 Solenoid valve, single solenoid
5 H-rail mounting (two M4x25 screws to DIN 912 are required)

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
VUVG-B14 -...-F- ...	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	B15	D1	D2	D3	D4	D5	H1	H2	H3	H4	H5
VUVG-B14 -...-F- ...	49.1	1.2	G¼	G⅛	M5	Ø 4.5	Ø 9.8	64.3	19.6	15.3	10.1	29.5

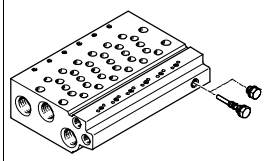
Type	H6	H7	H8	H9	H10	H11	H12	L3	L5	L6	L7	L8	L9	L10	L11
VUVG-B14 -...-F- ...	9.83	4.8	22.1	7	15.4	6.8	23.9	6	1	16	14.4	13.6	21.1	16	14

Solenoid valves VUVG-B14, sub-base valves

Ordering data

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1 [mm]	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 [mm]	40	56	72	88	104	120	136	152	168	200	232	264
L4 [mm]	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)]

	Port			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
	G⅛	G¼	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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
3) Note on materials: RoHS-compliant.

Order code – Manifold rails G⅛

VABM	–	L1	–	14	W	–	G14	–	

Manifold assembly parts
Manifold rail **VABM**

Valve series
VUVG **L1**

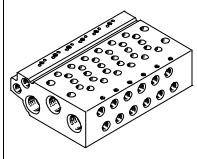
Valve width
14 mm **14**

Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84
Port 2 and 4 in G⅛ **W**

Ports 1, 3, 5
G14 G¼

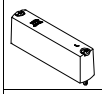
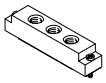
Number of valve positions
2 to 10, 12, 14 and 16

Ordering data – Manifold rail

	Description		Part No.	Type
Manifold rail for sub-base valve				
	For valve size B14 (G⅛)	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**

Solenoid valves VUVG-B14, sub-base valves

Ordering data

Ordering data – Accessories				
	Description		Part No.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For manifold rail 14W, sub-base valves	Incl. screws and seal	**569989**	**VABB-L1-14**
Separator				Technical data ➔ Internet: vabd
	For manifold rail 14W, sub-base valves	Separator for pressure zones	**569996**	**VABD-10-B**
Supply plate				Technical data ➔ Internet: vabf
	For manifold rail 14W	Incl. screws and seal	**569993**	**VABF-L1-14-P3A4-G18**
Seals				Technical data ➔ Internet: vabd
	For sub-base valves B14	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**566676**	**VABD-L1-14B-S-G18**

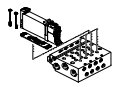
Solenoid valves VUVG-B18, sub-base valves

FESTO

Order code – Sub-base valves G¼

VUVG	–	B	18	–		–		Z	

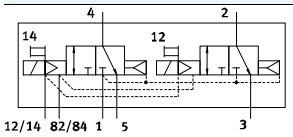
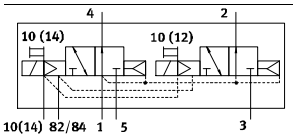
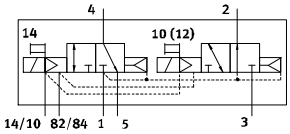
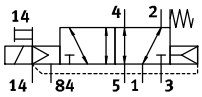
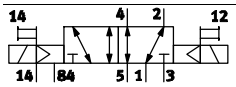
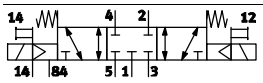
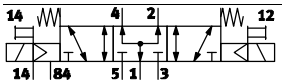
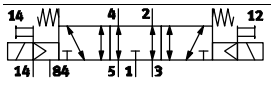
Valve design

 Sub-base, manifold valve incl. seal and screws	B

Width

18 mm	18

Valve functions

	T32C
	T32U
	T32H
	M52
	B52
	P53C
	P53U
	P53E

Reset method

Pneumatic spring for T32 and M52	A
Mechanical spring for T32 and M52	M
Pneu./mech. spring for M52	R
With B52 and P53	–

Pilot air supply

External	Z

Manual override

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

F	–				L	–	

Connecting cables

W1...4	Not sheathed	 for H
C1...4	Sheathed	
WS1...4	Not sheathed	 for S
S1...4	Sheathed	
N1...4	M8x1, 3-pin	
N5...8	M8x1, 4-pin	

Display

L	LED

Protective circuit

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

E-box

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

Operating voltage

1	24 V DC
5	12 V DC
4	5 V DC

Pneumatic connection

F	In the manifold rail

New

Solenoid valves VUVG-B18, sub-base valves

Technical data

FESTO

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

Circuit symbol ➔ page 10

Width 18 mm

Flow rate
800 ... 1080 l/min

Voltage
5, 12 and 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			Monostable							Bistable	Monostable	Monostable		
Pneumatic spring reset method			Yes			No			Yes[5]	–	No	No		
Mechanical spring reset method			No			Yes			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1			No			Only with external pilot air supply								
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Electric											
Type of control			Piloted											
Pilot air supply			External, internal; can be selected via sub-base											
Exhaust function			With flow control											
Manual override			Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting			On manifold rail											
Mounting position			Any											
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		
Width		[mm]	18											
Port	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		
Certification			c UL us - Recognized (OL)											
			c CSA us (OL)											
CE marking (see declaration of conformity)			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=Normally 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Solenoid valves VUVG-B18, sub-base valves

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 in accordance with 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, –5 ... +60 with holding current reduction					
Temperature of medium		[°C]	–5 ... +50, –5 ... +60 with holding current reduction					

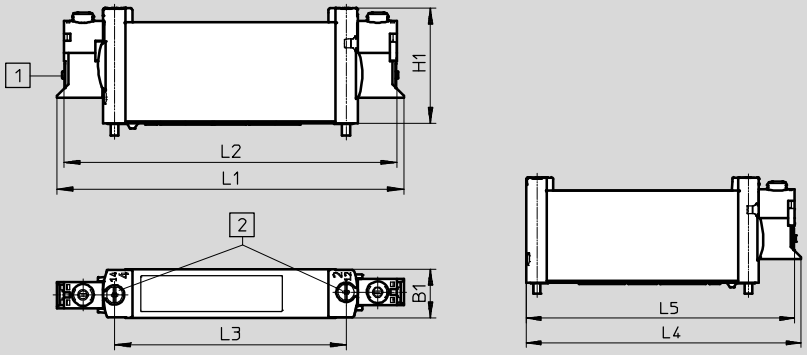
1) Pneumatic spring
2) Mixed, pneumatic/mechanical spring
3) Mechanical spring
4) Minimum pilot pressure 50% of operating pressure

Electrical data		
Electrical connection		Via E-box
Operating voltage	[V DC]	5, 12 and 24 ±10%
Power	[W]	1, reduced to 0.35 with holding current reduction
Duty cycle	[%]	100
Protection class to EN 60529		IP40 (with plug socket)

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

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

2x3/2-way, 5/2-way and 5/3-way valve



1 Horizontal electrical connection

2 Manual override

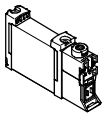
Note

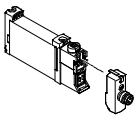
More dimensions
E-boxes
➔ page 80

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

Ordering data

Ordering data			
	Description	Part No.	Type
Sub-base valve G¼, without E-box			
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**574443**	**VUVG-B18-T32C-AZT-F-1P3**
	Normally open, external pilot air supply, pneumatic spring return	**574444**	**VUVG-B18-T32U-AZT-F-1P3**
	External pilot air supply, 1x normally open, 1x normally closed, pneumatic spring return	**574445**	**VUVG-B18-T32H-AZT-F-1P3**
	Normally closed, external pilot air supply, mechanical spring return	**574446**	**VUVG-B18-T32C-MZT-F-1P3**
	Normally open, external pilot air supply, mechanical spring return	**574447**	**VUVG-B18-T32U-MZT-F-1P3**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**574448**	**VUVG-B18-T32H-MZT-F-1P3**
	5/2-way valve, single solenoid		
	External pilot air supply, pneumatic/mechanical spring return	**574449**	**VUVG-B18-M52-RZT-F-1P3**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, internal pilot air supply	**574452**	**VUVG-B18-P53C-ZT-F-1P3**
	Mid-position exhausted, internal pilot air supply	**574453**	**VUVG-B18-P53E-ZT-F-1P3**
	Mid-position pressurised, internal pilot air supply	**574454**	**VUVG-B18-P53U-ZT-F-1P3**

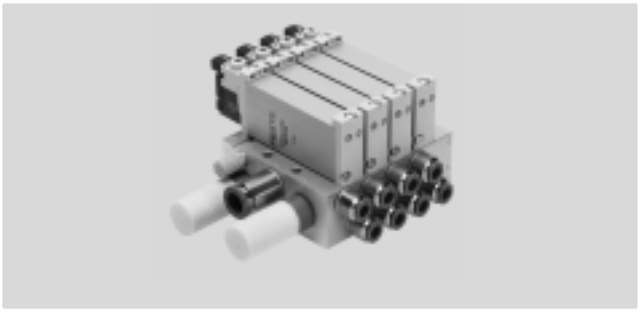
Ordering data			
	Description	Part No.	Type
Sub-base valve G¼, with E-box R8			
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**8031537**	**VUVG-B18-T32C-AZT-F-1R8L**
	Normally open, external pilot air supply, pneumatic spring return	**8031538**	**VUVG-B18-T32U-AZT-F-1R8L**
	External pilot air supply, 1x normally open, 1x normally closed, pneumatic spring return	**8031539**	**VUVG-B18-T32H-AZT-F-1R8L**
	Normally closed, external pilot air supply, mechanical spring return	**8031540**	**VUVG-B18-T32C-MZT-F-1R8L**
	Normally open, external pilot air supply, mechanical spring return	**8031541**	**VUVG-B18-T32U-MZT-F-1R8L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**8031542**	**VUVG-B18-T32H-MZT-F-1R8L**
	5/2-way valve, single solenoid		
	External pilot air supply, pneumatic/mechanical spring return	**8031543**	**VUVG-B18-M52-RZT-F-1R8L**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, internal pilot air supply	**8031546**	**VUVG-B18-P53C-ZT-F-1R8L**
	Mid-position exhausted, internal pilot air supply	**8031547**	**VUVG-B18-P53E-ZT-F-1R8L**
	Mid-position pressurised, internal pilot air supply	**8031548**	**VUVG-B18-P53U-ZT-F-1R8L**

Solenoid valves VUVG-B18, sub-base valves

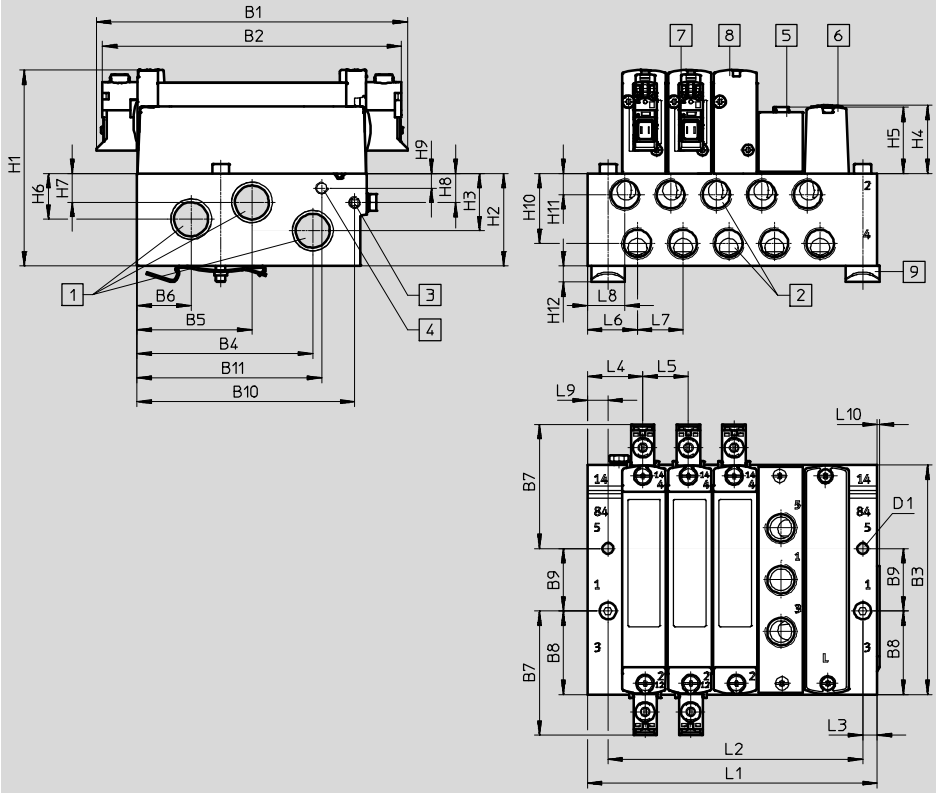
Manifold assembly

FESTO

Sub-base valve for manifold assembly
G¼ connection



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



Note
More dimensions E-boxes
➔ page 80

1 Ports 1, 3 and 5: G⅜ (at both ends)
2 Ports 2 and 4: G¼
3 Port 12/14 for external pilot air: M5
4 Port 82/84 for external pilot air: M5
5 Supply plate, ports 1, 3 and 5: G¼
6 Blanking plate
7 Solenoid valve
8 Solenoid valve
9 H-rail mounting (two M4x40 screws to DIN 912 are required)

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	D1
VUVG-B18 -...-F- ...	129.4	124.41	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
VUVG-B18 -...-F- ...	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
VUVG-B18 -...-F- ...	6	23	19	20.8	19	15.6	8.5	1

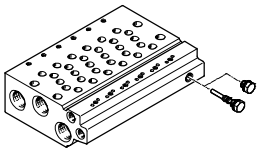
Solenoid valves VUVG-B18, sub-base valves

FESTO

Ordering data

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1 [mm]	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 [mm]	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)]

	Port			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
	G¼	G⅜	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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
3) Note on materials: RoHS-compliant.

Order code – Manifold rails G¼

VABM	–	L1	–	18	W	–	G38	–	

Manifold assembly parts	
Manifold rail	**VABM**

Valve series	
VUVG	**L1**

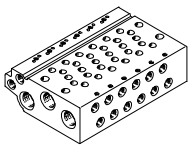
Valve width	
18 mm	**18**

Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84	
Ports 2 and 4 in G¼	**W**

Ports 1, 3, 5	
G38	G⅜

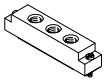
Number of valve positions	
	2 to 10, 12, 14 and 16

Ordering data – Manifold rails

	Description		Part No.	Type
Manifold rail for sub-base valve				
	For valve size B18 (G¼)	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**

Solenoid valves VUVG-B18, sub-base valves

Ordering data

Ordering data – Accessories				
	Description		Part No.	Type
Blanking plate				Technical data ➔ Internet: vabb
	For manifold rail 18W, sub-base valves	Incl. screws and seal	**574482**	**VABB-L1-18**
Separator				Technical data ➔ Internet: vabd
	For manifold rail 18W, sub-base valves	Separator for pressure zones	**574483**	**VABD-14-B**
Supply plate				Technical data ➔ Internet: vabf
	For manifold rail 18W	Incl. screws and seal	**574481**	**VABF-L1-18-P3A4-G14**
Seals				Technical data ➔ Internet: vabd
	For sub-base valves B18	Delivery unit: 10 sets (each with 2 screws and 1 seal)	**574480**	**VABD-L1-18B-S-G14**

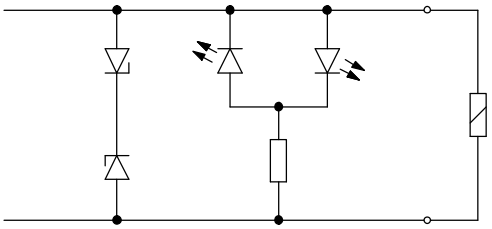
Note

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

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

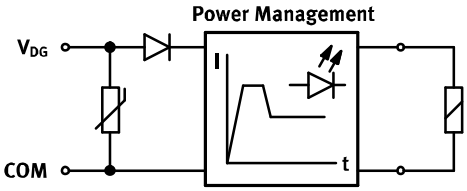
Protective circuit without holding current reduction

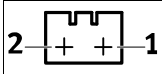
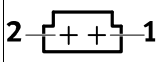
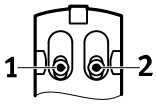
The solenoid coils (P type) of the 5, 12 and 24 V designs are equipped with a protective circuit to arrest sparks and protect against polarity reversal.

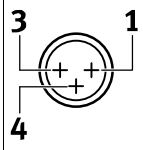
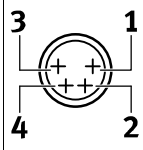


Protective circuit with holding current reduction

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

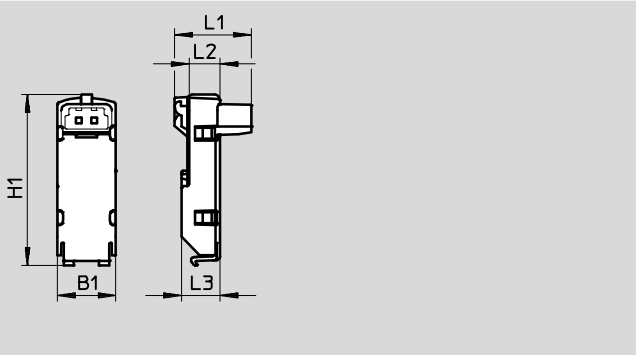


Pin allocation for E-box			
	Pin		Description
Rectangular plug, connection pattern H			
	VAVE-L1-1VH2-LP, VAVE-L1-1VH3-LP		
	1	+ or –	Without holding current reduction
	2	+ or –	
	VAVE-L1-1H2-LR, VAVE-L1-1H3-LR		
	1	+	With holding current reduction
	2	–	
Rectangular plug, connection pattern S			
	VAVE-L1-1VS2-LP, 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 E-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, 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 -	

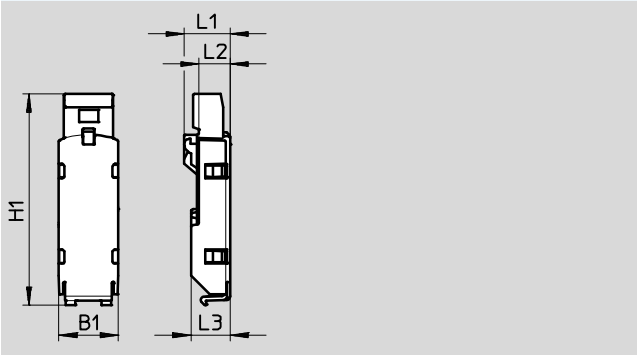
Dimensions Download CAD data ➔ **www.festo.com**

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					

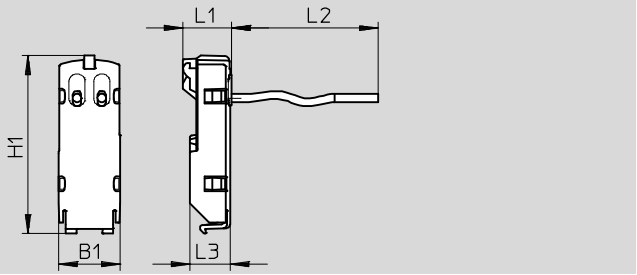
E-boxes, S3/H3



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					

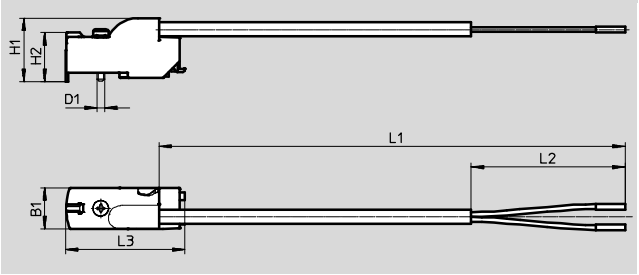
Dimensions Download CAD data ➔ **www.festo.com**

E-boxes, VL11 ... 14



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					

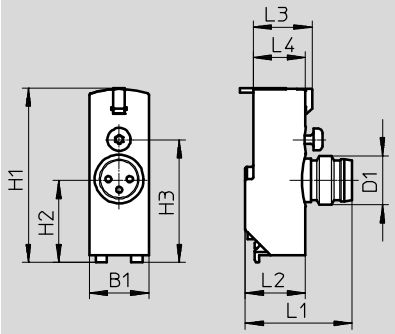
E-boxes, VK6 ... 9



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			

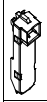
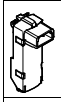
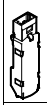
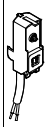
Dimensions Download CAD data ➔ **www.festo.com**

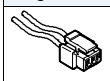
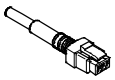
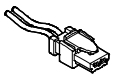
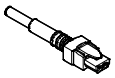
E-boxes, R8/R1



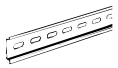
Type	B1	H1	H2	H3	L1	L2	L3	L4	D1 ∅
VAVE-L1-1VR8-LP	9.8	28.7	13.7	20.2	18.4	9.9	9.7	8.6	M8
VAVE-L1-1VR1-LP									

Ordering data – E-boxes

Design	Plug	Additional functions	Ambient temperature [°C]	Code	Power [W]	Voltage [V DC]	Cable length [m]	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**
	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, 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, 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, holding current reduction, IP65		R1R	0.35	24	–	**573922**	**VAVE-L1-1R1-LR**

Ordering data				
	Description	Cable length [m]	Part No.	Type
Plug socket with cable, not sheathed, open end				Technical data ➔ Internet: nebv
	For E-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 E-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 E-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 E-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-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 E-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 E-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 E-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 E-box code R1 4-pin, straight socket, M8x1	2.5	**554035**	**NEBU-M8G4-K-2.5-M8G4**

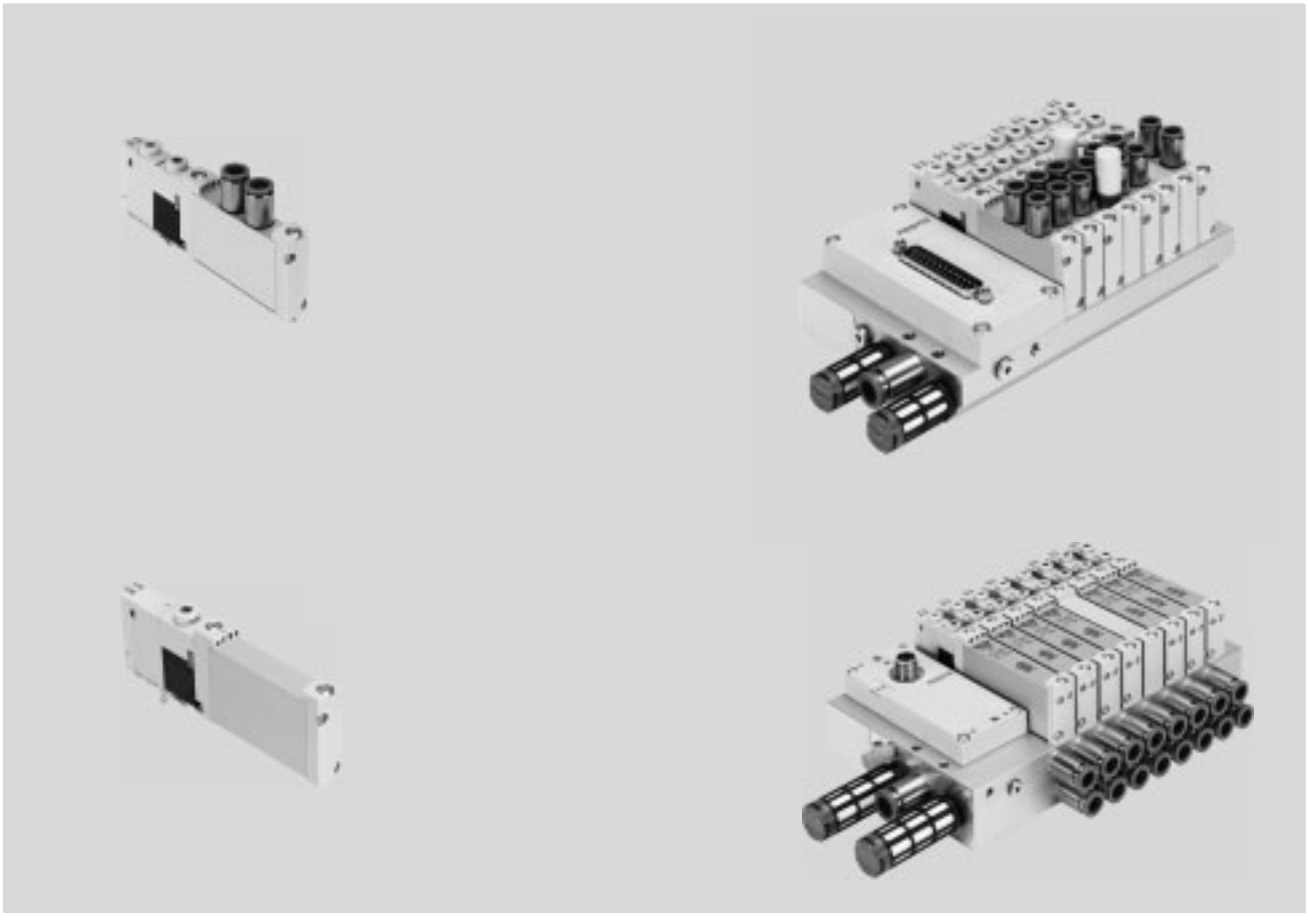
Ordering data				
	Description		Part No.	Type
Blanking plug				Technical data ➔ Internet: b
	For manifold rail and valve	10 pieces	**3843**	**B-M5**
			174309	**B-M7**
	For manifold rail	10 pieces	**3568**	**B-⅛**
			3569	**B-¼**
			3570	**B⅜**
Compact blanking plug, for valve				Technical data ➔ Internet: b
	For sealing a connection (valve requires a blanking plug with a low screw-in depth)	For valve size 14 (G1/8)	**578406**	**NPQH-BK-G18-P10**
		For valve size 18 (G1/4)	**578407**	**NPQH-BK-G14-P10**
Reducing nipple				
	–	10 pieces	**161359**	**D-M5I-M7A-ISK**
Fittings				Technical data ➔ Internet: qsm
	For tubing Ø 6 mm	20 pieces	**130918**	**QS-B-1/4-6-20**
	For tubing Ø 8 mm		**130995**	**QS-B-1/4-8-I-20**
	For tubing Ø 10 mm		**132152**	**QS-B-1/4-10-I-20**
	For tubing Ø 8 mm	10 pieces	**130921**	**QS-B-3/8-8-10**
	For tubing Ø 10 mm		**130922**	**QS-B-3/8-10-10**
	For tubing Ø 12 mm		**132123**	**QS-B-3/8-12-10**
	For tubing Ø 16 mm		**132124**	**QS-B-3/8-16-10**
	For tubing Ø 3 mm	10 pieces	**133001**	**QSM-M3-3-I-R**
	For tubing Ø 4 mm		**133002**	**QSM-M3-4-I-R**
	For tubing Ø 3 mm		**133003**	**QSM-M5-3-I-R**
	For tubing Ø 4 mm		**133004**	**QSM-M5-4-I-R**
	For tubing Ø 6 mm		**133005**	**QSM-M5-6-I-R**
	For tubing Ø 6 mm		**133007**	**QSM-M7-6-I-R**
	For tubing Ø 3 mm		**153313**	**QSM-M5-3-I**
	For tubing Ø 4 mm		**153315**	**QSM-M5-4-I**
	For tubing Ø 6 mm		**153317**	**QSM-M5-6-I**
	For tubing Ø 4 mm		**153319**	**QSM-M7-4-I**
	For tubing Ø 6 mm		**153321**	**QSM-M7-6-I**
	For tubing Ø 4 mm	10 pieces	**186106**	**QS-G1/8-4-I**
	For tubing Ø 6 mm		**186107**	**QS-G1/8-6-I**
	For tubing Ø 8 mm		**186109**	**QS-G1/8-8-I**
	For tubing Ø 10 mm		**132999**	**QS-G1/8-10-I**
	For tubing Ø 6 mm		**186108**	**QS-G1/4-6-I**
	For tubing Ø 8 mm		**186110**	**QS-G1/4-8-I**
	For tubing Ø 10 mm		**186112**	**QS-G1/4-10-I**
Silencer				Technical data ➔ Internet: u
	For thread G⅛	1 piece	**2307**	**U-1/8**
	For thread G¼		**2316**	**U-1/4**
	For thread G⅜		**2309**	**U-3/8**
	For thread M7	1 piece	**161418**	**UC-M7**
	For thread G⅛		**161419**	**UC-1/8**
	For thread G¼		**165004**	**UC-1/4**
	For thread G⅜		**6843**	**UC-3/8-B**

Ordering data						
	Description				Part No.	Type
H-rail						Technical data ➔ Internet: nrh
	To EN 60715, 35 x 7.5 (WxH)		2 m		**35430**	**NRH-35-2000**
H-rail mounting						Technical data ➔ Internet: vame
	–		2 pieces		**569998**	**VAME-T-M4**
Covers for manual override						Technical data ➔ Internet: vmpa
	Covered		10 pieces		**540898**	**VMPA-HBV-B**
	Non-detenting				**540897**	**VMPA-HBT-B**
	Detenting (without accessories)				**8002234**	**VAMC-L1-CD**
Inscription label holder						Technical data ➔ Internet: aslr
	Holder for an inscription label and cover for mounting screw and manual override		10 pieces		**570818**	**ASLR-D-L1**
Restrictor						
	For M5 valves, for setting the flow rate during pressurisation and exhausting	Flow rate: 9.6 l/min	b value: 0.5	c value: 0.04	**8025709**	**VFFG-T-M5-5**
		Flow rate: 14.6 l/min	b value: 0.5	c value: 0.05	**8025710**	**VFFG-T-M5-6**
		Flow rate: 19.1 l/min	b value: 0.5	c value: 0.07	**8025711**	**VFFG-T-M5-7**
		Flow rate: 26.1 l/min	b value: 0.5	c value: 0.10	**8025712**	**VFFG-T-M5-8**
		Flow rate: 40.8 l/min	b value: 0.5	c value: 0.14	**8025713**	**VFFG-T-M5-10**
		Flow rate: 45.4 l/min	b value: 0.5	c value: 0.16	**8025714**	**VFFG-T-M5-12**
		Flow rate: 67.4 l/min	b value: 0.5	c value: 0.25	**8025715**	**VFFG-T-M5-15**

New
VTUG

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features



Innovative

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

Versatile

- 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
- Choice of manual override: 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

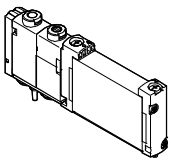
➔ Internet: vtug

New
VTUG

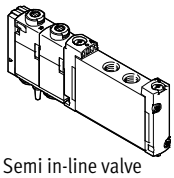
Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features

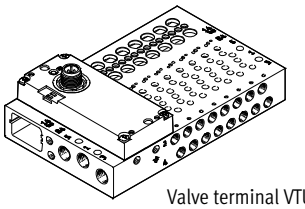
Sub-base and semi in-line valves



Sub-base valve
VUVG-B...1T1

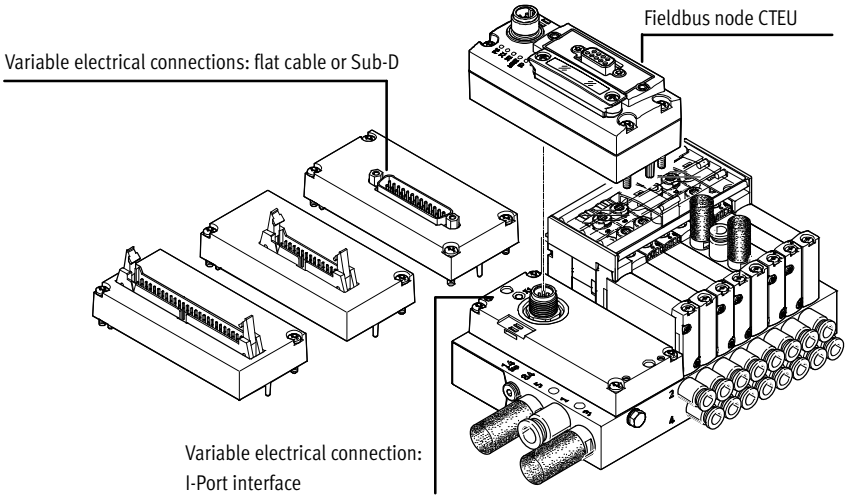


Semi in-line valve
VUVG-S...1T1

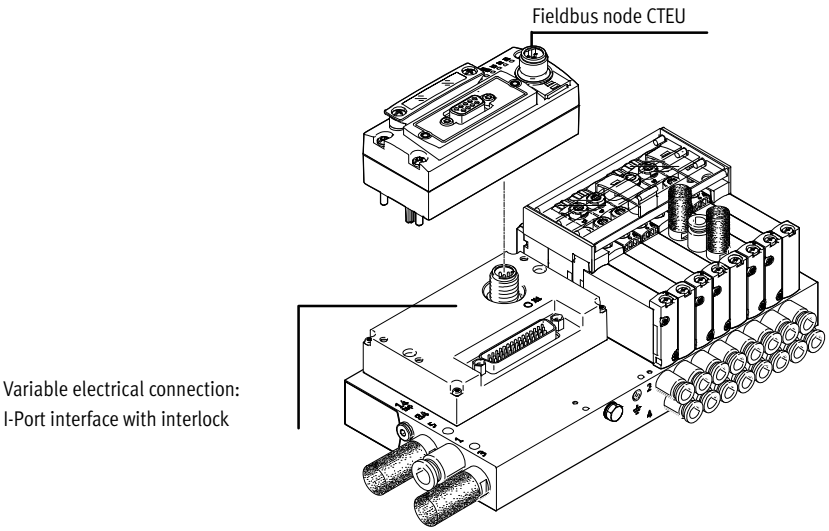


Valve terminal VTUG with variable electrical connection

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



Overview – Valve terminal with interlock



Equipment options

Valve functions

- 2x3/2-way, 3/2-way, 5/2-way, 5/3-way valves
- Reversible piston spool valves, up to 24 valve positions

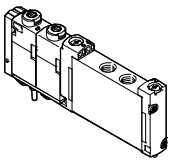
Electrical connection options

- IO-Link mode for direct connection to a higher-level IO-Link master
- Festo-specific I-Port interface for fieldbus nodes (CTEU)
- Variable multi-pin plug connection using Sub-D or flat cable
- Festo-specific I-Port interface with interlock (for width 10)

Valve terminals VTUG with multi-pin plug and fieldbus connection

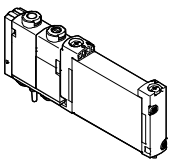
Key features

Basic valves VUVG



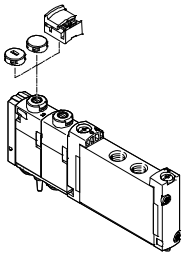
- Width 10 and 14 mm
- Semi in-line valves
- Sub-base valves
- 2x3/2-way, 3/2-way, 5/2-way and 5/3-way valves

Valve functions



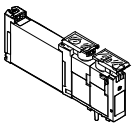
- 2x3/2-way valve, normally open, mechanical spring
- 2x3/2-way valve, normally open, pneumatic spring
- 2x3/2-way valve, normally closed, mechanical spring
- 2x3/2-way valve, normally closed, pneumatic spring
- 2x3/2-way valve, 1x normally closed, 1x normally open, pneumatic spring
- 2x3/2-way valve, 1x normally closed, 1x normally open, mechanical spring
- 3/2-way valve, normally open, single solenoid
- 3/2-way valve, normally closed, single solenoid
- 5/2-way valve, single solenoid, pneumatic/mechanical spring (size 10)
- 5/2-way valve, single solenoid, mechanical spring
- 5/2-way valve, single solenoid, pneumatic spring (size 14)
- 5/2-way valve, double solenoid
- 5/3-way valve, mid-position pressurised
- 5/3-way valve, mid-position exhausted
- 5/3-way valve, mid-position closed

Cover caps for manual override



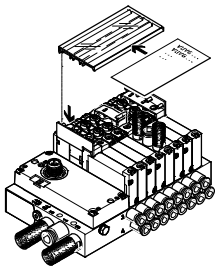
- Closed cover cap, covered manual override
- Slotted cover cap, non-detenting manual override
- Cover, detenting manual override

Inscription label holder



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

Inscription label holder



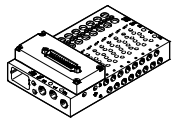
- Inscription label holder ASCF-H-L1-... for identifying the valves on the valve terminal VTUG

New
VTUG

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features

Multi-pin plug connection

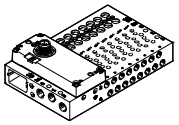


The signals are transmitted from the controller to the valve terminal via a pre-assembled or self-assembled multi-wire cable to the multi-pin plug connection,

which substantially reduces installation time. The valve terminal can be equipped with max. 48 solenoid coils.

Versions:
- Sub-D connection
- Flat cable

I-Port interface

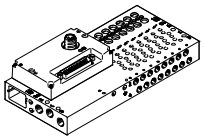


Festo-specific interface as a basis for fieldbus nodes (CTEU) or in IO-Link mode
for direct connection to a higher-level IO-Link master.

Communication and power supply take place via an M12 plug.

Connection options:
- As an I-Port interface for fieldbus 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

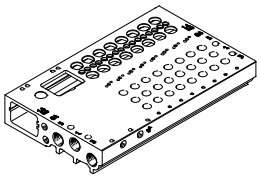
The VTUG variant with multi-pin plug and fieldbus connection offers the additional option of individual electrical actuation of the valves (see ➔ page 106).

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features – Pneumatic components

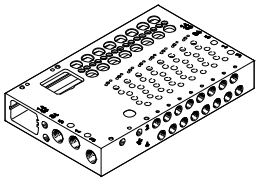
FESTO

Manifold rail for semi in-line valves



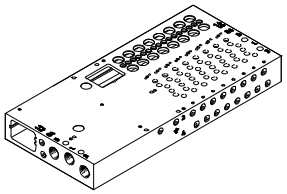
- For semi in-line valves M5, M7, width 10 mm and G1/8, size 14 mm
- For 2x3/2-way, 5/2-way and 5/3-way valves
- 4 to 24 valve positions with electrical interlinking
- The semi in-line valves are supplied with external pilot air. The pilot air is set via the manifold rail. The scope of delivery of the manifold rail includes a short and a long blanking plug for setting the pilot air.

Manifold rail for sub-base valves



- For sub-base valves M5/M7, width 10 mm and G1/8, width 14 mm
- For 2x3/2-way, 3/2-way, 5/2-way and 5/3-way valves
- 4 to 24 valve positions with electrical interlinking
- 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.

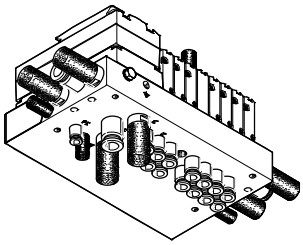
Manifold rail, long design



Versions:

- I-Port interface with lateral outlet direction: for semi in-line valves and sub-base valves M5, M7, width 10 mm and G1/8, size 14 mm
- Interlock:
  For sub-base and semi in-line valves M5/M7, width 10 mm

Manifold rail for control cabinet installation, outlet underneath

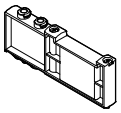


For sub-base valves M5/M7, width 10 and 14 mm

Note

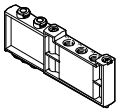
Pressurisation and exhaust at both ends is recommended for an optimised flow rate in cases where multiple valves switch simultaneously.

Blanking plate for vacant position



- Vacant position cover

Supply plate



- For additional air supply and exhaust via a valve position

Note

Supply plate
VABF-L1-14-P3A4-G18-T1
can only be used with G fittings. R fittings are not permitted.

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 – Pneumatic components

FESTO

Creating pressure zones and separating exhaust air

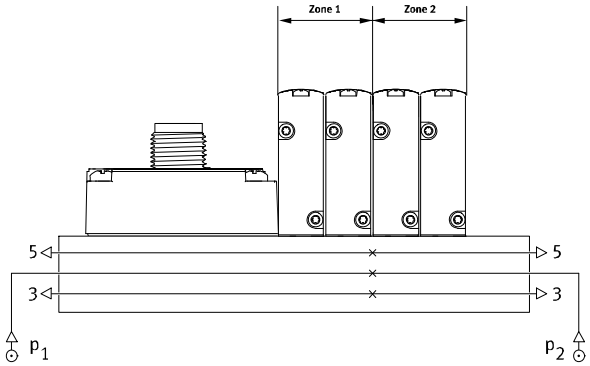
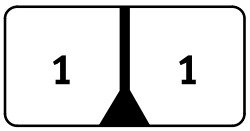
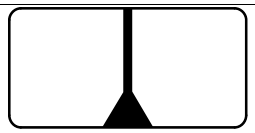
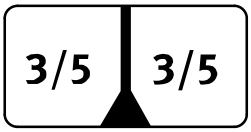
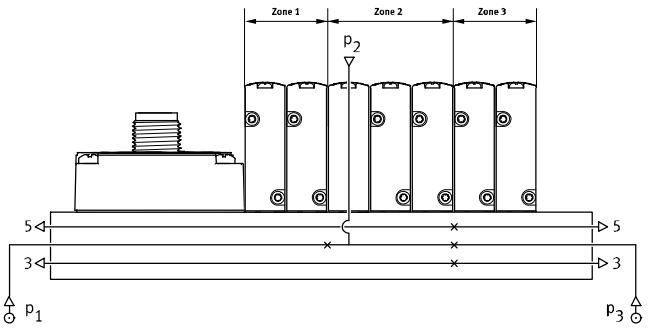
Compressed air is supplied and exhausted via the manifold rail and via supply plates.
The position of the supply plates and duct separations can be freely selected with the VTUG.

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

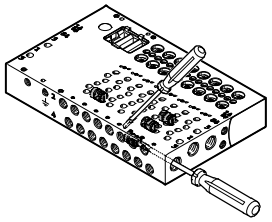
Pressure zone separation can be used for the following ducts:
- Duct 1
- Duct 3
- Duct 5

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 with pilot air supply (duct 12/14)

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



Note

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

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features – Pneumatic components

FESTO

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.

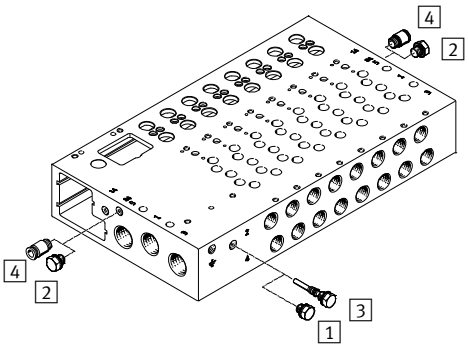
External pilot air supply

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

Pilot exhaust air port

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

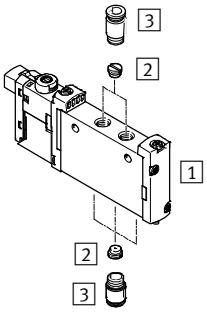
Pilot air supply



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 QS fitting for 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.

Flow control valve



1 Valves VUVG with individual electrical connection
2 Restrictor
3 Fitting

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

Sub-base valve, individual electrical connection: the restrictor can be fitted in port 2/4.

Valve terminal VTUG with electrical multi-pin plug and fieldbus connection: the restrictor can be fitted in port 2/4.

New
VTUG

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features – Pneumatic components

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 energy for the return movement is obtained from port 1.

Note

Pressure must be present at port 1.

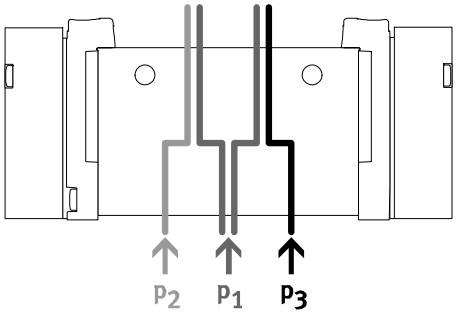
Vacuum operation is only possible at port 3 and 5, not at port 1.

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

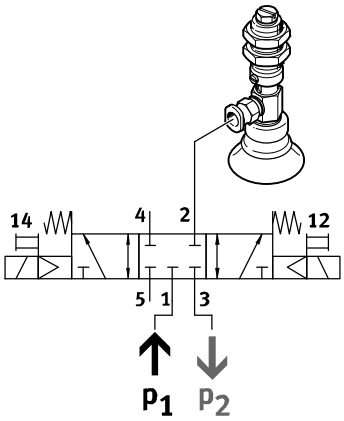
Note

- With internal pilot air, adhere to the minimum pilot pressure in duct 1
- With 2x3/2-way valves without spring return, adhere to minimum pilot pressure in duct 1

Advantages

- 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



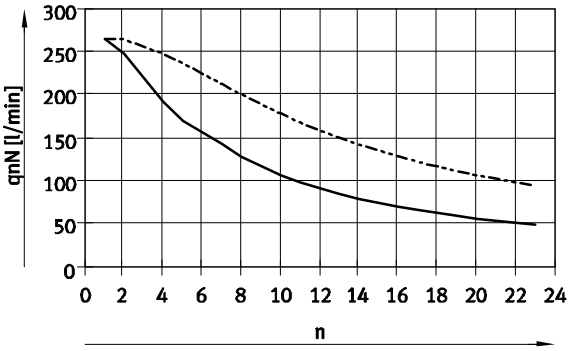
Vacuum, ejector pulse and normal position with internal pilot air can be achieved by connecting vacuum at duct 3 and pressure for the ejector pulse at duct 1.

Valve terminals VTUG with multi-pin plug and fieldbus connection

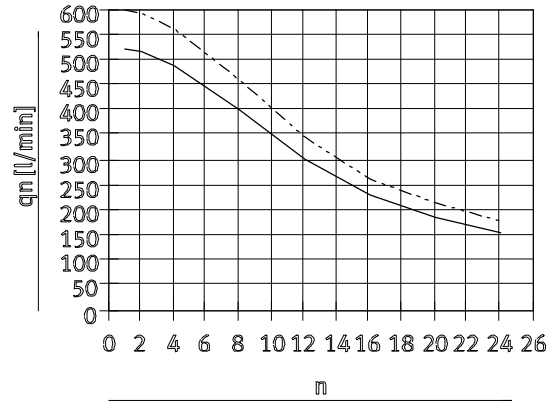
Key features – Pneumatic components

FESTO

Standard nominal flow rate qnN, 5/2-way valve, with several valves n switched in parallel, size 10

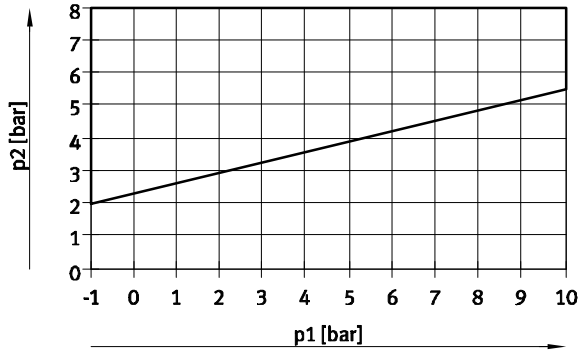


Standard flow rate qn as a function of the number of switched valves n, size 14

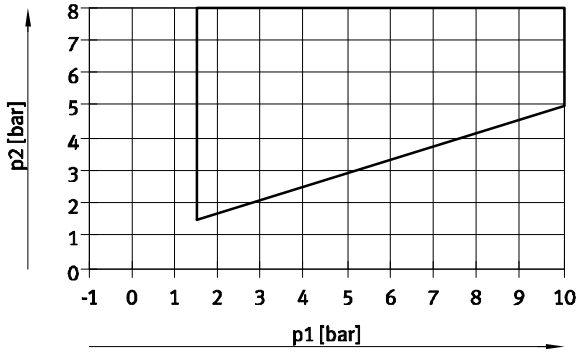


Pilot pressure p2 as a function of operating pressure p1

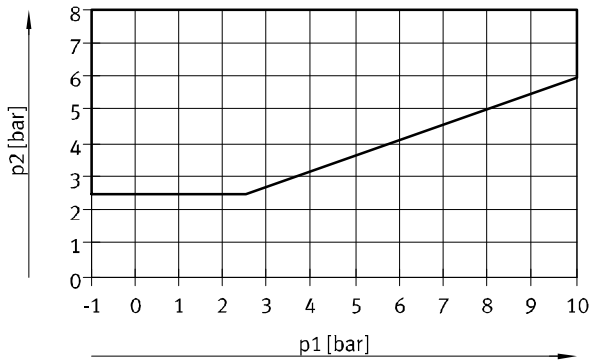
VUVG-...-T32-MZT



VUVG-...-T32-AZT



VUVG-...10-M32-RZT-... /VUVG-...14-M32-AZT-... /VUVG-...10-M52-RZT-... /VUVG-...14-M52-AZT-...



Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features – Assembly

Valve terminal assembly

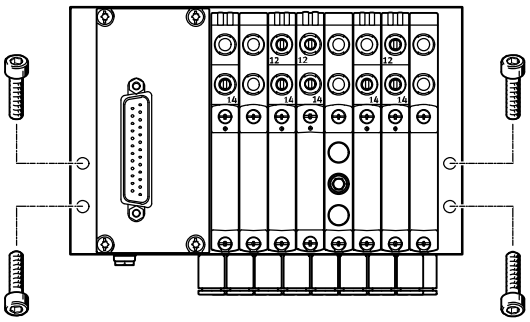
Sturdy terminal assembly thanks to:

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

Note

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

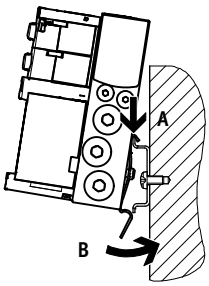
Wall mounting



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 A).

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

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

- Size 10: M4x30 to DIN 912
- Size 14: M4x40 to DIN 912

Note

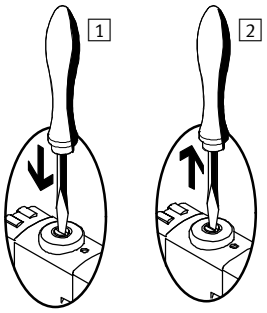
Permissible use of the H-rail:
Manifold rail with outlet on the side or on top.
H-rail exclusively for horizontal mounting. Vibration/shock are not permissible for this type of mounting.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features – Assembly

Manual override (MO)

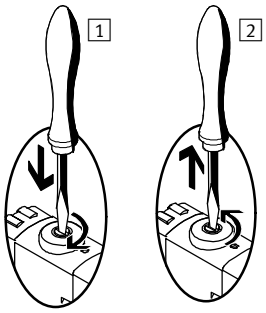
MO with automatic return, non-detenting



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.
Spring force pushes the stem of the MO back.
Pilot valve returns to its initial position and so too the single solenoid main valve (not with double solenoid valve code J).

MO set via turning, non-detenting/detenting (standard version)

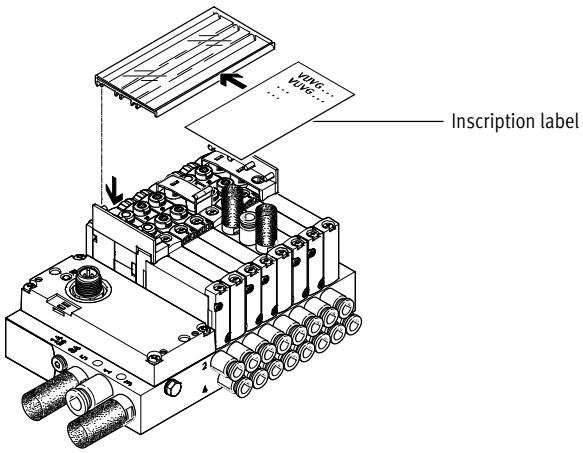


1 Press in the stem of the MO with a pointed object or screwdriver until the valve switches and then turn the stem clockwise by 90° until the stop is reached.
Valve remains switched.

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

Inscription system

Inscription label holder

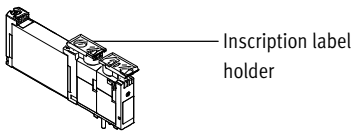


Mount the inscription label holder ASCF-H-L1 (code TT) to label the valves. Open the inscription label holder to insert the inscription label and actuate the manual override.
The inscription label holders are available in different sizes depending on the number of valves.

Note

Do not engage the manual override before mounting the inscription label holder.
The retainers for the inscription label holder cover the manual override of the underlying valve when mounted.
The manual override for the valves under the inscription label holder retainers can only be actuated without detent.

Inscription label holder



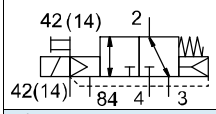
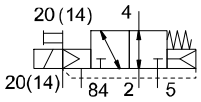
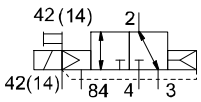
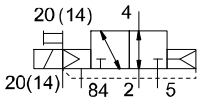
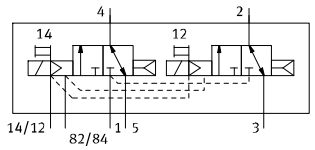
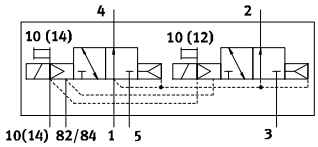
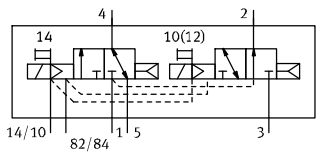
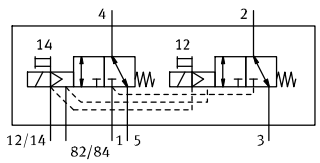
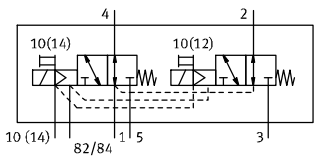
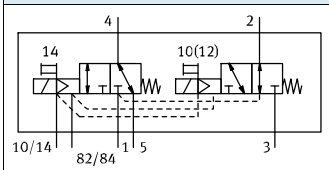
Use inscription label holder ASLR-D-L1 (code TV) to label the individual valves.
Place the inscription label holder directly on the manual override.

Note

Do not engage the manual override before mounting the inscription label holder.
After the retainers are installed, the manual override can only be actuated without detent.

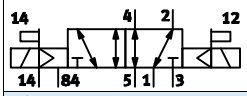
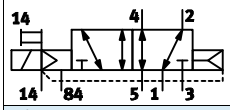
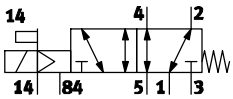
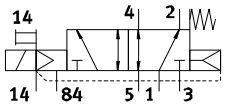
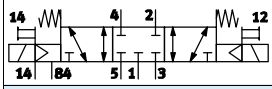
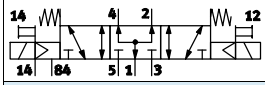
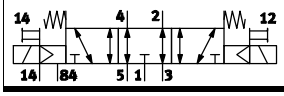
Valve terminals VTUG with multi-pin plug and fieldbus connection

Overview of valve functions

Valve	Valve code	Description	Valve terminal/ position function order code	Size	
				M5/M7	G1/8
3/2-way valve, normally closed, pneumatic/mechanical spring					
	M32C-R	External pilot air supply	VX	■	–
3/2-way valve, normally open, pneumatic/mechanical spring					
	M32U-R	External pilot air supply	VW	■	–
3/2-way valve, normally closed, pneumatic spring					
	M32C-A	External pilot air supply	VX	–	■
3/2-way valve, normally open, pneumatic spring					
	M32U-A	External pilot air supply	VW	–	■
2x3/2-way valve, normally closed, pneumatic spring					
	T32C-A	External pilot air supply	K	■	■
2x3/2-way valve, normally open, pneumatic spring					
	T32U-A	External pilot air supply	N	■	■
2x3/2-way valve, 1x normally open, 1x normally closed, pneumatic spring					
	T32H-A	External pilot air supply	H	■	■
2x3/2-way valve, normally closed, mechanical spring					
	T32C-M	External pilot air supply	VK	■	■
2x3/2-way valve, normally open, mechanical spring					
	T32U-M	External pilot air supply	VN	■	■
2x3/2-way valve, 1x normally open, 1x normally closed, mechanical spring					
	T32H-M	External pilot air supply	VH	■	■

Valve terminals VTUG with multi-pin plug and fieldbus connection

Overview of valve functions

Valve	Valve code	Description	Valve terminal/ position function order code	Size	
				M5/M7	G1/8
5/2-way valve, double solenoid					
	B52	External pilot air supply	J	■	■
5/2-way valve, single solenoid, pneumatic spring					
	M52-A	External pilot air supply	M	–	■
5/2-way valve, single solenoid, mechanical spring					
	M52-M	External pilot air supply	A	■	■
5/2-way valve, single solenoid, pneumatic/mechanical spring					
	M52-R	External pilot air supply	P	■	–
5/3-way valve, mid-position closed					
	P53C	External pilot air supply	G	■	■
5/3-way valve, mid-position pressurised					
	P53U	External pilot air supply	B	■	■
5/3-way valve, mid-position exhausted					
	P53E	External pilot air supply	E	■	■

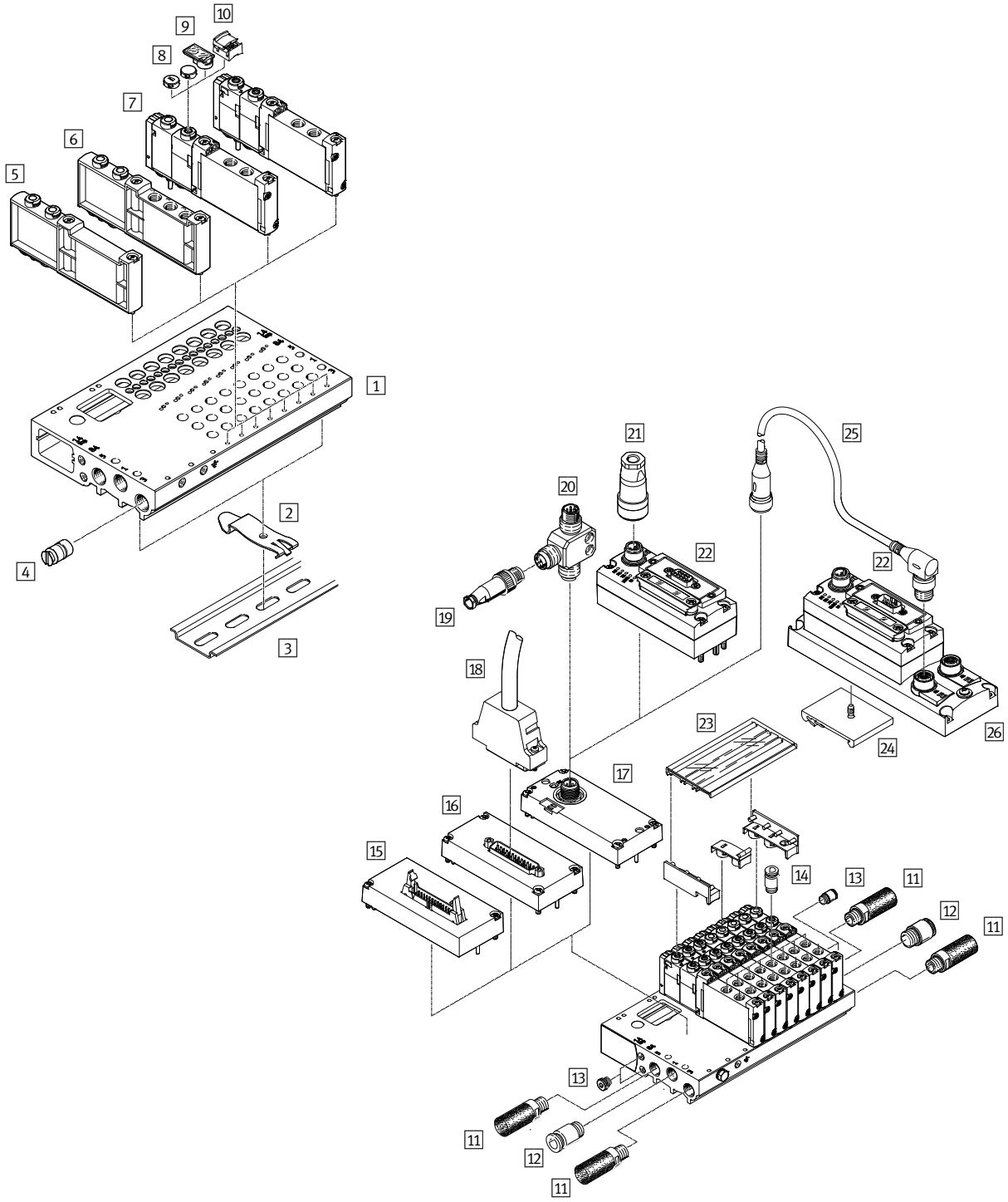
New
VTUG

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Semi in-line valves

FESTO

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



Accessories			
Type	**Brief description**	**➔ Page/Internet**	
1 Manifold rail	VABM-L1-...	For 4 to 10, 12, 14, 16, 20 and 24 valve positions	124
2 H-rail mounting	VAME-T-M4	2 pieces for fitting the valve terminal on an H-rail	153
3 H-rail	NRH-35-2000	For mounting the valve terminal	153
4 Separator	VABD-...	For creating pressure zones	153
5 Blanking plate	VABB-L1-...	For covering an unused valve position	153
6 Supply plate	VABF-L1-...	For air supply port 1 and outlet port 3 and 5	153

Valve terminals VTUG with multi-pin plug and fieldbus connection

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Peripherals overview example – Semi in-line valves

Accessories				
		Type	Brief description	➔ Page/Internet
7	Solenoid valve	VUVG-...	Semi in-line valve, 5/2-way single solenoid	108, 113
8	Cover cap	VMPA-HB...-B	For manual override	153
9	Inscription label holder	ASLR-D-L1	For inscription label and covering the mounting screw/manual override	154
10	Cover	VAMC	For manual override	153
11	Silencer	U-...	For outlet port 3 and 5	152
12	Push-in fitting	QS-...	For air supply port 1	152
13	Blanking plug	B-...	For internal/external pilot air	152
14	Push-in fitting	QS-...	For port 2/4	152
15	Electrical interface	VAEM-L1-S-M3-...	Flat cable	141
16	Electrical interface	VAEM-L1-S-M1-...	Sub-D	141
17	Electrical interface	VAEM-L1-S-...-PT	I-Port interface/IO-Link	144
18	Connecting cable	NEBV-...	Sub-D cable	141
19	Plug	SEA-M12-5GS-PG7	Straight, for T-adapter FB-TA	144
20	T-adapter	FB-TA-M12-5POL	For IO-Link and load supply	144
21	Power supply socket	NTSD/FBSD	Power supply for fieldbus node CTEU	152
22	CTEU	CTEU-...	Fieldbus node	151
23	Inscription label holder	ASCF-H-L1	For identifying valves	154
24	H-rail mounting	CAFM-F1-H	For connecting block CAPC	146
25	Connecting cable	NEBU	–	nebu
26	Connecting block	CAPC-F1-E-M12	For connecting a second device with I-Port interface	146

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Sub-base valves

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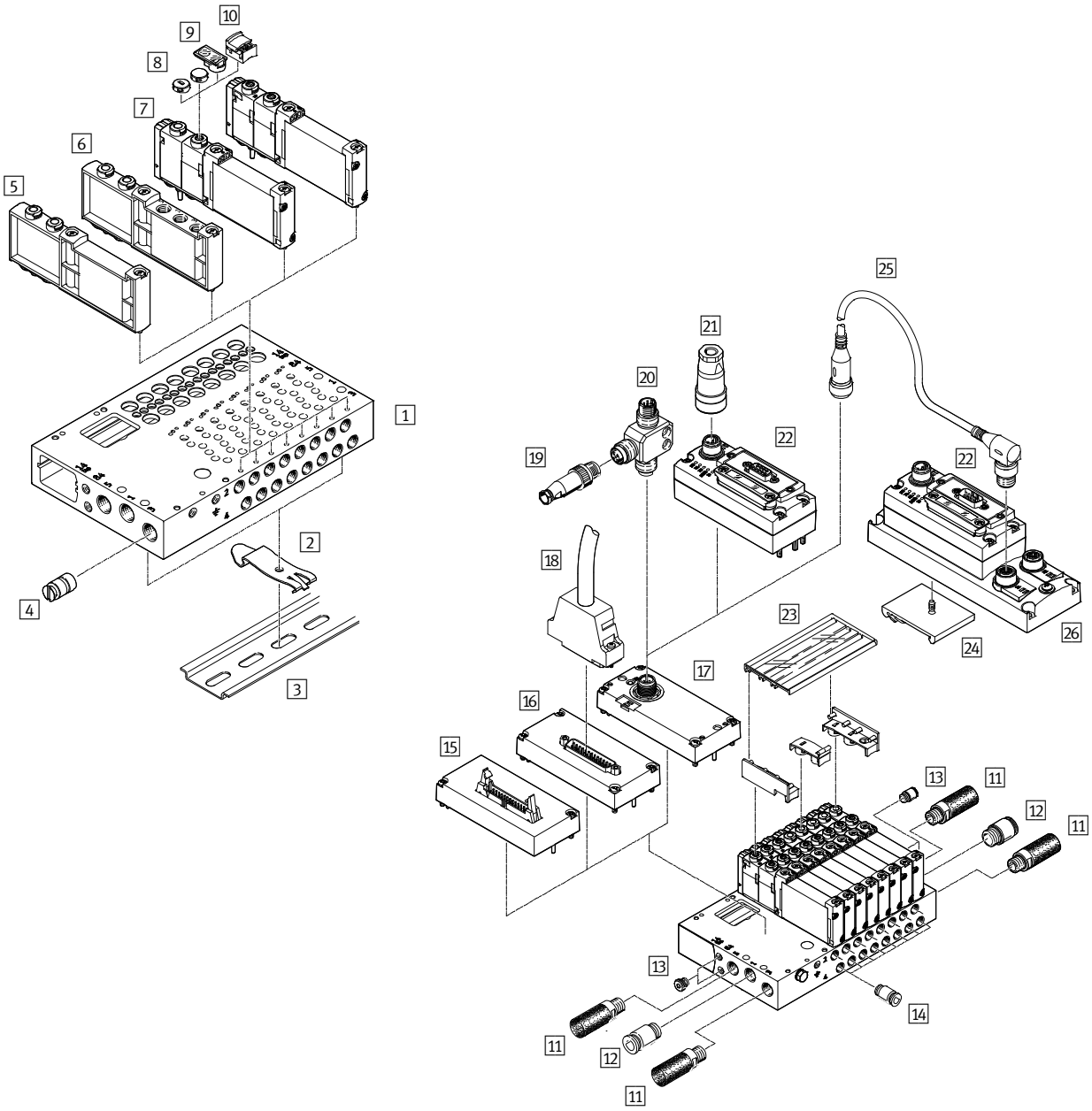
Valve terminal overview – Multi-pin plug and I-Port interface



Accessories

	Type	Brief description	➔ Page/Internet
1 Manifold rail	VABM-L1-...	For 4 to 10, 12, 14, 16, 20 and 24 valve positions	124
2 H-rail mounting	VAME-T-M4	2 pieces for fitting the valve terminal on an H-rail	153
3 H-rail	NRH-35-2000	For mounting the valve terminal	153
4 Separator	VABD-...	For creating pressure zones	153
5 Blanking plate	VABB-L1-...	For covering an unused valve position	153
6 Supply plate	VABF-L1-...	For air supply port 1 and outlet port 3 and 5	153
7 Solenoid valve	VUVG- ...	Sub-base valve, 5/2-way single solenoid	117, 121
8 Cover cap	VMPA-HB...-B	For manual override	153
9 Inscription label holder	ASLR-D-L1	For inscription label and covering the mounting screw/manual override	154

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Sub-base valves

Accessories				
		Type	Brief description	→ Page/Internet
10	Cover	VAMC	For manual override	153
11	Silencer	U...	For outlet port 3 and 5	152
12	Push-in fitting	QS...	For air supply port 1	152
13	Blanking plug	B-...	For internal/external pilot air	152
14	Push-in fitting	QS...	For port 2/4	152
15	Electrical interface	VAEM-L1-S-M3-...	Flat cable	141
16	Electrical interface	VAEM-L1-S-M1-...	Sub-D	141
17	Electrical interface	VAEM-L1-S-...-PT	I-Port interface/IO-Link	144
18	Connecting cable	NEBV-...	Sub-D cable	141
19	Plug	SEA-M12-5GS-PG7	Straight, for T-adapter FB-TA	144
20	T-adapter	FB-TA-M12-5POL	For IO-Link and load supply	144
21	Power supply socket	FBSD/NTSD	Power supply for fieldbus node CTEU	152
22	CTEU	CTEU-...	Fieldbus node	151
23	Inscription label holder	ASCF-H-L1	For identifying valves	154
24	H-rail mounting	CAFM-F1-H	For connecting block CAPC	146
25	Connecting cable	NEBU	–	nebu
26	Connecting block	Connecting block	For connecting a second device with I-Port interface	146

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Sub-base valves

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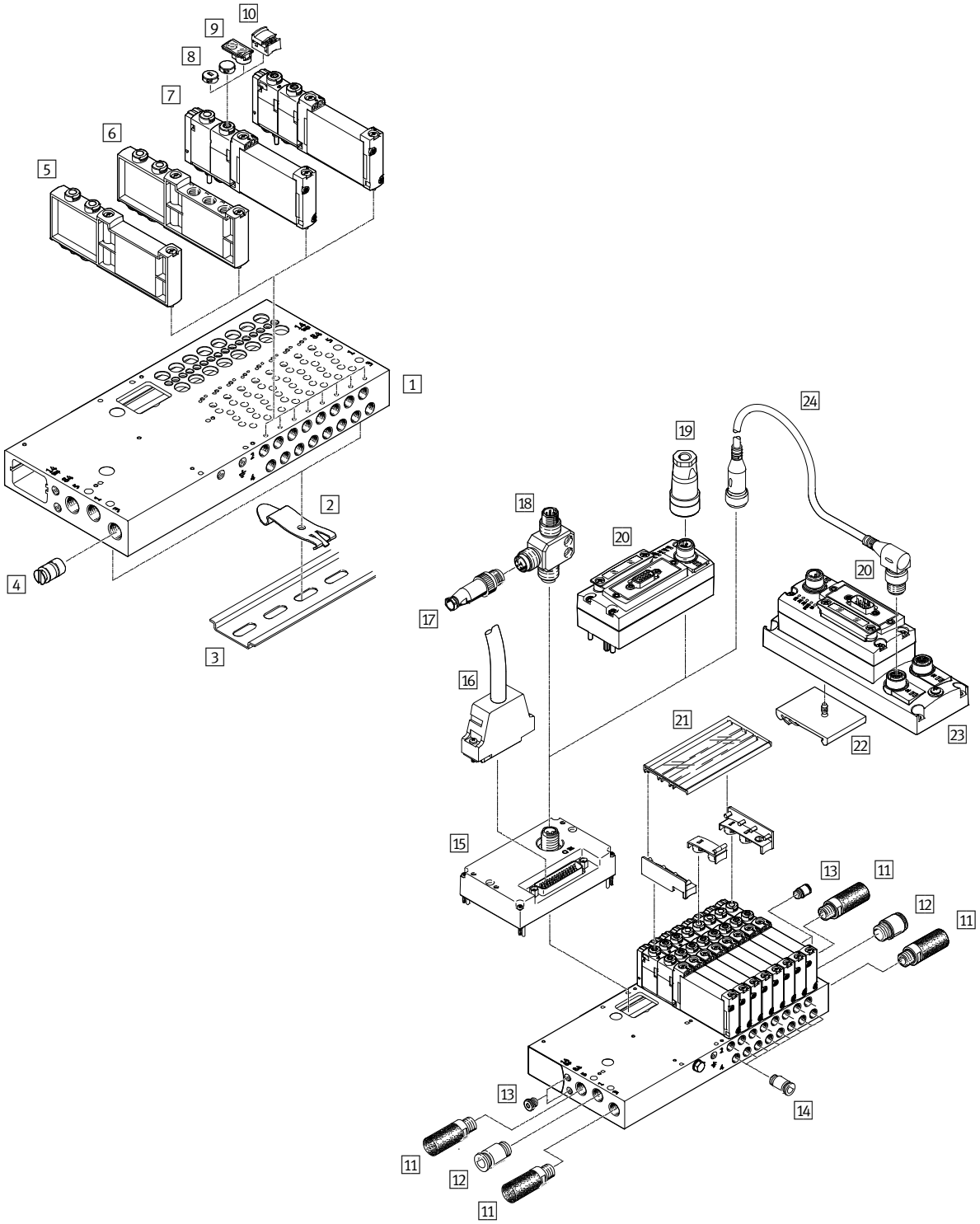
Valve terminal overview – I-Port interface with interlock



Accessories

		Type	Brief description	➔ Page/Internet
1	Manifold rail	VABM-L1-...	For 4 to 10, 12, 14, 16, 20 and 24 valve positions	124
2	H-rail mounting	VAME-T-M4	2 pieces for fitting the valve terminal on an H-rail	153
3	H-rail	NRH-35-2000	For mounting the valve terminal	153
4	Separator	VABD-...	For creating pressure zones	153
5	Blanking plate	VABB-L1-...	For covering an unused valve position	153
6	Supply plate	VABF-L1-...	For air supply port 1 and outlet port 3 and 5	153

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Sub-base valves

Accessories			
	Type	Brief description	→ Page/Internet
7 Solenoid valve	VUVG-...	–	108, 113, 117, 121
8 Cover cap	VMPA-HB...-B	For manual override	153
9 Inscription label holder	ASLR-D-L1	For inscription label and covering the mounting screw/manual override	154
10 Cover	VAMC	For manual override	153
11 Silencer	U-...	For outlet port 3 and 5	152
12 Push-in fitting	QS-...	For air supply port 1	152
13 Blanking plug	B-...	For internal/external pilot air	152
14 Push-in fitting	QS-...	For port 2/4	152
15 Electrical interface	VAEM-L1-S-24-...	I-Port interface with interlock	vtug/147
16 Connecting cable	NEBV-...	Sub-D cable	141
17 Plug	SEA-M12-5GS-PG7	Straight, for T-adapter FB-TA	144
18 T-adapter	FB-TA-M12-5POL	For IO-Link and load supply	144
19 Power supply socket	NTSD/FBSD	Power supply for fieldbus node CTEU	152
20 Fieldbus	CTEU-...	Fieldbus node	151
21 Inscription label holder	ASCF-H-L1	For identifying valves	154
22 H-rail mounting	CAFM-F1-H	For connecting block CAPC	146
23 Connecting block	CAPC-F1-E-M12	For connecting a second device with I-Port interface	146
24 Connecting cable	NEBU	–	nebu

Valve terminals VTUG with multi-pin plug and fieldbus connection

Peripherals overview example – Sub-base valves

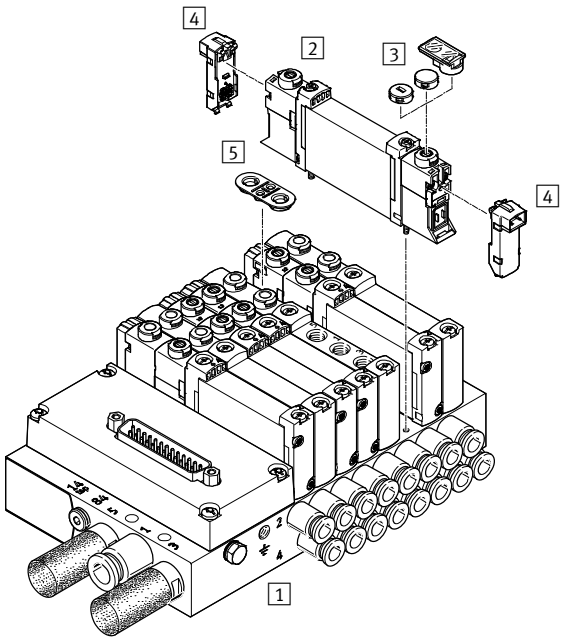
FESTO

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

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

Valves VUVG (see ➔page 9) with individual electrical connection are mounted on the valve terminal to this end.

Use a seal (part no.: 1429734) when assembling the valves VUVG.



Accessories

		Type	Brief description	➔ Page/Internet
1	Manifold rail	VABM-L1-10	For 2 to 10, 12, 14 and 16 valve positions	64
2	Solenoid valve	VUVG	Sub-base valve	60
3	Cover cap	VMPA	For manual override	86
4	E-box	VAVE	For individual connection	9
5	Seal	–	For valve with individual connection	–

Valve terminals VTUG with multi-pin plug and fieldbus connection

FESTO

Order code – Semi in-line valves M5/M7

VUVG	–	S	10	–		–		Z		–		–	1	T1	L

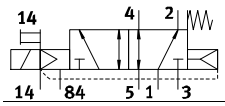
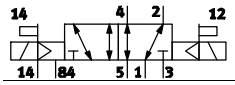
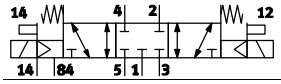
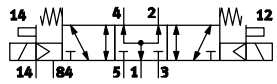
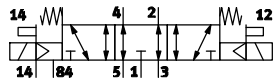
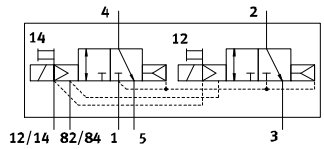
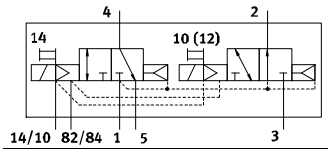
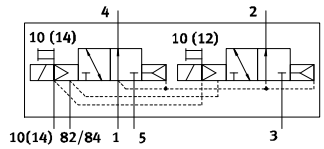
Valve design

Semi in-line valves	**S**

Width

10 mm	**10**

Valve functions

	**M52**
	**B52**
	**P53C**
	**P53U**
	**P53E**
	**T32C**
	**T32H**
	**T32U**

Display

L	LED

Electrical connection

T1	Plug-in

Nominal operating voltage

1	24 V DC

Pneumatic connection

M5	M5
M7	M7
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 5/3"

Manual override

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

Pilot air

Z	External

Reset method

A	Pneumatic spring for 2x3/2-way
M	Mechanical spring for M52 and 2x3/2-way
R	Pneu./mech. spring for M52
–	With B52 and P53

New
VTUG

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves M5/M7

FESTO

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

Circuit symbol ➔ page 10

Width 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		Monostable							Bistable	Monostable			
Pneumatic spring reset method		Yes			No			Yes[5]	–	No	–		
Mechanical spring reset method		No			Yes			Yes[5]	–	Yes	–		
Vacuum operation at port 1		No			With external pilot air								
Design		Piston spool valve											
Sealing principle		Soft											
Actuation type		Electric											
Type of control		Piloted											
Pilot air supply		External											
Exhaust function		With flow control											
Manual override		Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting		On manifold rail											
Mounting position		Any											
Switching position 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		
Width	[mm]	10											
Port 1, 3, 5		On manifold rail											
Port 2, 4	VUVG-S10-...-M5	M5											
Port 2, 4	VUVG-S10-...-M7	M7											
Port 12, 14		On manifold rail											
Product weight	[g]	59						53	60	53	58		
Certification		c UL us - Recognized (OL)											
		c CSA us (OL)											
CE marking (see declaration of conformity)		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=Normally 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Valve terminals VTUG with multi-pin plug and fieldbus connection

FESTO

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 in accordance with ISO 8573-1:2010 [7:4:4]					
Operating pressure	Internal	[bar]	1.5 ... 8	2 ... 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 ... +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 E-box
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		IP40 as standard (optionally IP67 with Sub-D and IO-Link interface with feature "S8"[1])

1) S8= IP67 degree of protection for electrics

Safety characteristics		
Note on forced checking procedure		Switching frequency min. 1/week
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 [ms]							
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

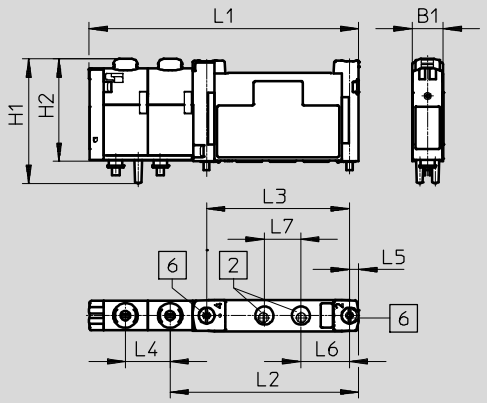
Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves M5/M7

FESTO

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

Semi in-line valves M5/M7

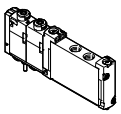


2 Ports 2 and 4 M5/M7

6 Mounting screw

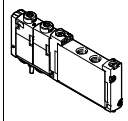
Type	B1	H1	H2	L1	L2	L3	L4	L5	L6	L7
VUVG-S10-...-M5-1T1L	10.3	40.9	33.6	88.6	62	47	14.7	3	16	12
VUVG-S10-...-M7-1T1L										

Ordering data

	Description	Part No.	Type
Semi in-line valve M5			
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**573386**	**VUVG-S10-T32C-AZT-M5-1T1L**
	Normally open, external pilot air supply, pneumatic spring return	**573387**	**VUVG-S10-T32U-AZT-M5-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, pneumatic spring return	**573388**	**VUVG-S10-T32H-AZT-M5-1T1L**
	Normally closed, external pilot air supply, mechanical spring return	**573389**	**VUVG-S10-T32C-MZT-M5-1T1L**
	Normally open, external pilot air supply, mechanical spring return	**573390**	**VUVG-S10-T32U-MZT-M5-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**573391**	**VUVG-S10-T32H-MZT-M5-1T1L**
	5/2-way valve, single solenoid		
	External pilot air supply, mechanical spring return	**573393**	**VUVG-S10-M52-MZT-M5-1T1L**
	External pilot air supply, pneumatic/mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**573395**	**VUVG-S10-P53C-ZT-M5-1T1L**
	Mid-position pressurised, external pilot air supply	**573397**	**VUVG-S10-P53U-ZT-M5-1T1L**
	Mid-position exhausted, external pilot air supply	**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			
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**573398**	**VUVG-S10-T32C-AZT-M7-1T1L**
	Normally open, external pilot air supply, pneumatic spring return	**573399**	**VUVG-S10-T32U-AZT-M7-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, pneumatic spring return	**573400**	**VUVG-S10-T32H-AZT-M7-1T1L**
	Normally closed, external pilot air supply, mechanical spring return	**573401**	**VUVG-S10-T32C-MZT-M7-1T1L**
	Normally open, external pilot air supply, mechanical spring return	**573402**	**VUVG-S10-T32U-MZT-M7-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**573403**	**VUVG-S10-T32H-MZT-M7-1T1L**
	5/2-way valve, single solenoid		
	External pilot air supply, mechanical spring return	**573405**	**VUVG-S10-M52-MZT-M7-1T1L**
	External pilot air supply, pneumatic/mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**573407**	**VUVG-S10-P53C-ZT-M7-1T1L**
	Mid-position pressurised, external pilot air supply	**573409**	**VUVG-S10-P53U-ZT-M7-1T1L**
	Mid-position exhausted, external pilot air supply	**573408**	**VUVG-S10-P53E-ZT-M7-1T1L**

New

Valve terminals VTUG with multi-pin plug and fieldbus connection

FESTO

Order code – Semi in-line valves G1/8

VUVG	–	S	14	–		–		Z		–		–	1	T1	L

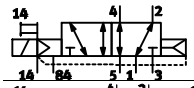
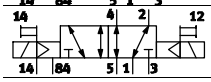
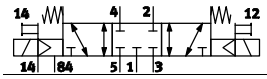
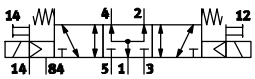
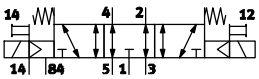
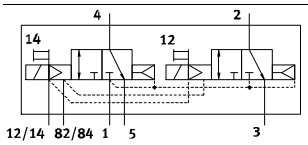
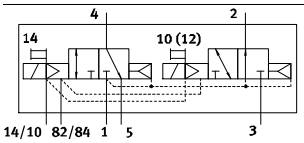
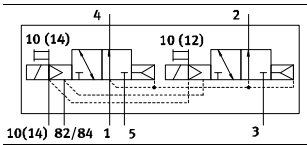
Valve design

Semi in-line valves	**S**

Width

14 mm	**14**

Valve functions

	**M52**
	**B52**
	**P53C**
	**P53U**
	**P53E**
	**T32C**
	**T32H**
	**T32U**

Pilot air

Z	External

Manual override

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

Pneumatic connection

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

Nominal operating voltage

1	24 V DC

Electrical connection

T1	Plug-in

Display

L	LED

Reset method

A	Pneumatic spring for M52 and 2x3/2-way
M	Mechanical spring for M52 and 2x3/2-way
–	With B52 and P53

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves G1/8

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

Circuit symbol ➔ page 10

Width 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		Monostable							Bistable	Monostable			
Pneumatic spring reset method		Yes			No			Yes	–	No	–		
Mechanical spring reset method		No			Yes			No	–	Yes	–		
Vacuum operation at port 1		No			With external pilot air								
Design		Piston spool valve											
Sealing principle		Soft											
Actuation type		Electric											
Type of control		Piloted											
Pilot air supply		External											
Exhaust function		With flow control											
Manual override		Choice of non-detenting, covered, non-detenting/detenting or detenting											
Type of mounting		On manifold rail											
Mounting position		Any											
Switching position display		LED											
Flow rate on manifold rail G1⁄8	[l/min]	610			520			620	630	620	590		
Width	[mm]	14											
Port 1, 3, 5		On manifold rail											
Port 2, 4		G1⁄8											
Port 12, 14		On manifold rail											
Product weight	[g]	102			100			91	98	89	95		
Certification		c UL us - Recognized (OL)											
		c CSA us (OL)											
CE marking (see declaration of conformity)		To EU EMC Directive[5]											
Corrosion resistance class CRC[6]		2											

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Normally 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

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 in accordance with ISO 8573-1:2010 [7:4:4]					
Operating pressure	Internal	[bar]	1.5 ... 8	2 ... 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	2 ... 8	2.5 ... 8	1.5 ... 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		IP67

Safety characteristics		
Note on forced checking procedure		Switching frequency min. 1/week
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 [ms]							
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

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Semi in-line valves G1/8

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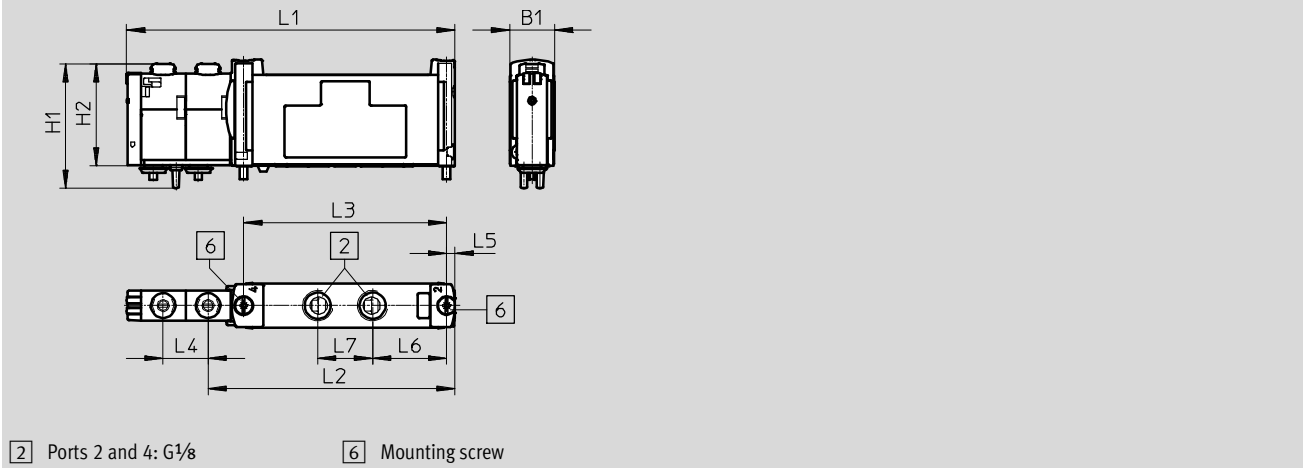
Dimensions Download CAD data ➔ **www.festo.com**

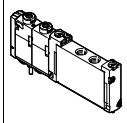
Semi in-line valves G1/8



2 Ports 2 and 4: G1⁄8 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			
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**573464**	**VUVG-S14-T32C-AZT-G18-1T1L**
	Normally open, external pilot air supply, pneumatic spring return	**573465**	**VUVG-S14-T32U-AZT-G18-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, pneumatic spring return	**573466**	**VUVG-S14-T32H-AZT-G18-1T1L**
	Normally closed, external pilot air supply, mechanical spring return	**573467**	**VUVG-S14-T32C-MZT-G18-1T1L**
	Normally open, external pilot air supply, mechanical spring return	**573468**	**VUVG-S14-T32U-MZT-G18-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**573469**	**VUVG-S14-T32H-MZT-G18-1T1L**
	5/2-way valve, single solenoid		
	External pilot air supply, pneumatic spring return	**573470**	**VUVG-S14-M52-AZT-G18-1T1L**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**573473**	**VUVG-S14-P53C-ZT-G18-1T1L**
	Mid-position pressurised, external pilot air supply	**573475**	**VUVG-S14-P53U-ZT-G18-1T1L**
	Mid-position exhausted, external pilot air supply	**573474**	**VUVG-S14-P53E-ZT-G18-1T1**

New

Valve terminals VTUG with multi-pin plug and fieldbus connection

Order code – Sub-base valves M5/M7

VUVG	–	B	10	–		–		Z		–	F	–	1	T1	L

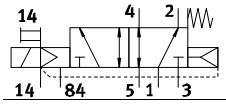
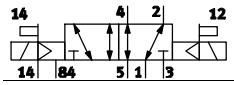
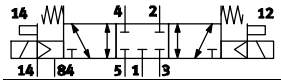
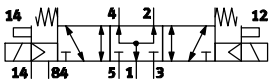
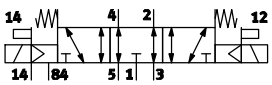
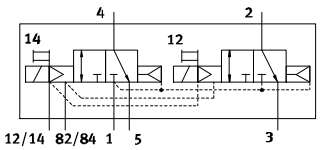
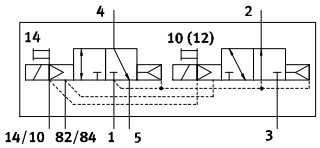
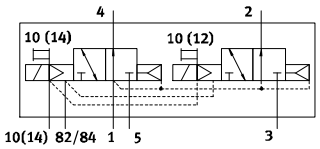
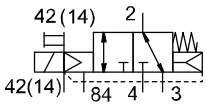
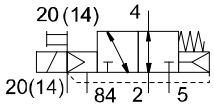
Valve design

Sub-base valves	**B**

Width

10 mm	**10**

Valve functions

	**M52**
	**B52**
	**P53C**
	**P53U**
	**P53E**
	**T32C**
	**T32H**
	**T32U**
	**M32C**
	**M32U**

Z Pilot air

Z	External

F Pneumatic connection

F	Flange/sub-base

1 Nominal operating voltage

1	24 V DC

T1 Electrical connection

T1	Plug-in

L Display

L	LED

H / S / T / Y Manual override

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

Reset method

A	Pneumatic spring for 2x3/2-way
M	Mechanical spring for M52 and 2x3/2-way
R	Pneu./mech. spring for M52
–	With B52 and P53

Valve terminals VTUG with multi-pin plug and fieldbus connection

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Technical data – Sub-base valves M5/M7

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

Circuit symbol ➔ page 10

Width 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		Monostable									Bistable	Monostable			
Pneumatic spring reset method		Yes			No			No		Yes[5]	–	No	–		
Mechanical spring reset method		No			Yes			Yes		Yes[5]	–	Yes	–		
Vacuum operation at port 1		No			With external pilot air										
Design		Piston spool valve													
Sealing principle		Soft													
Actuation type		Electric													
Type of control		Piloted													
Pilot air supply		External													
Exhaust function		With flow control													
Manual override		Choice of non-detenting, covered, non-detenting/detenting or detenting													
Type of mounting		On manifold rail													
Mounting position		Any													
Switching position display		LED													
Standard nominal flow rate M5/M7	[l/min]	160			140			140		300		260			
Flow rate on manifold rail M5, front	[l/min]	150			130			130		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			
Width	[mm]	10													
Port 1, 3, 5		On manifold rail													
Port 2, 4		M5/M7													
Port 12, 14		On manifold rail													
Product weight	[g]	59						53			60	53	58		
Certification		c UL us - Recognized (OL)													
		c CSA us (OL)													
CE marking (see declaration of conformity)		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=Normally 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

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 in accordance with ISO 8573-1:2010 [7:4:4]						
Operating pressure	Internal	[bar]	1.5 ... 8	2.5 ... 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	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		IP40 as standard (optionally IP67 with Sub-D and IO-Link interface with feature "S8"[1])

1) S8= IP67 degree of protection for electrics

Safety characteristics		
Note on forced checking procedure		Switching frequency min. 1/week
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 [ms]								
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

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Sub-base valves M5/M7

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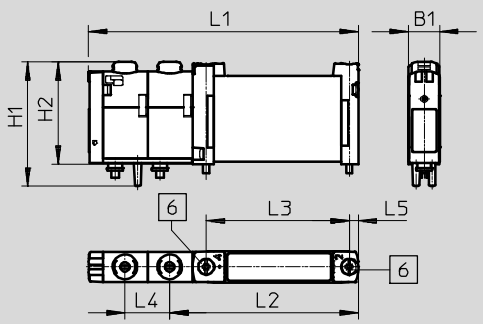
Dimensions Download CAD data ➔ **www.festo.com**

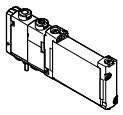
Sub-base valve M5/M7



6 Mounting screw

Type	B1	H1	H2	L1	L2	L3	L4	L5
VUVG-B10-...-F-1T1L	10.3	40.9	33.6	88.6	62	47	14.7	3

Ordering data

	Description	Part No.	Type
Sub-base valve M5/M7			
	3/2-way valve		
	Normally closed, external pilot air supply, mechanical spring return	**8028231**	**VUVG-B10Z-M32C-RZT-F-1T1L**
	Normally open, external pilot air supply, mechanical spring return	**8028232**	**VUVG-B10Z-M32U-RZT-F-1T1L**
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**573410**	**VUVG-B10-T32C-AZT-F-1T1L**
	Normally open, external pilot air supply, pneumatic spring return	**573411**	**VUVG-B10-T32U-AZT-F-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, pneumatic spring return	**573412**	**VUVG-B10-T32H-AZT-F-1T1L**
	Normally closed, external pilot air supply, mechanical spring return	**573413**	**VUVG-B10-T32C-MZT-F-1T1L**
	Normally open, external pilot air supply, mechanical spring return	**573414**	**VUVG-B10-T32U-MZT-F-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**573415**	**VUVG-B10-T32H-MZT-F-1T1L**
	5/2-way valve, single solenoid		
	External pilot air supply, mechanical spring return	**573417**	**VUVG-B10-M52-MZT-F-1T1L**
	External pilot air supply, pneumatic/mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**573419**	**VUVG-B10-P53C-ZT-F-1T1L**
	Mid-position pressurised, external pilot air supply	**573421**	**VUVG-B10-P53U-ZT-F-1T1L**
	Mid-position exhausted, external pilot air supply	**573420**	**VUVG-B10-P53E-ZT-F-1T1L**

New

Valve terminals VTUG with multi-pin plug and fieldbus connection

FESTO

Order code – Sub-base valves G1/8

VUVG	–	B	14	–		–		Z		–	F	–	1	T1	L

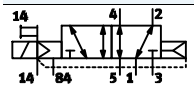
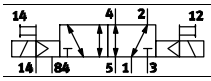
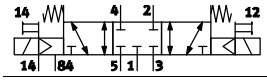
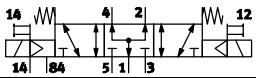
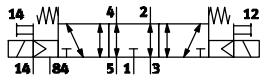
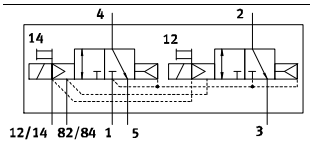
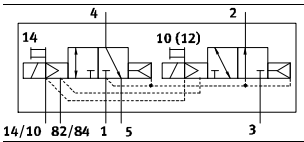
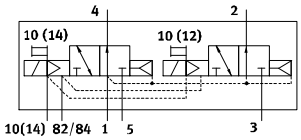
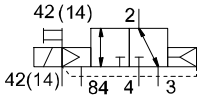
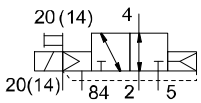
Valve design

Sub-base valves	**B**

Width

14 mm	**14**

Valve functions

	**M52**
	**B52**
	**P53C**
	**P53U**
	**P53E**
	**T32C**
	**T32H**
	**T32U**
	**M32C**
	**M32U**

Manual override

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

Pilot air

Z	External

Reset method

A	Pneumatic spring for M52 and 2x3/2-way
M	Mechanical spring for M52 and 2x3/2-way
–	With B52 and P53

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

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Technical data – Sub-base valves G1/8

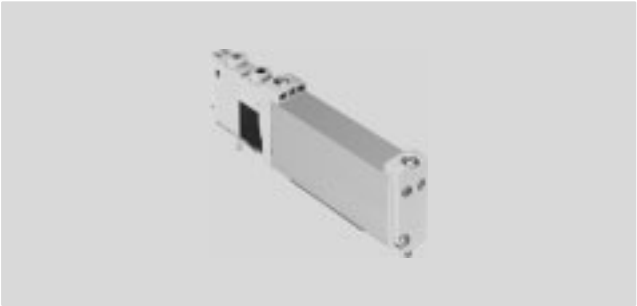
Function
3/2C, 3/2U
2x3/2C, 2x3/2U, 2x3/2H
5/2-way, single solenoid
5/2-way, double solenoid
5/3C, 5/3U, 5/3E

Circuit symbol ➔ page 10

Width 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		Monostable									Bistable	Monostable			
Pneumatic spring reset method		Yes			No			Yes		Yes	–	No	–		
Mechanical spring reset method		No			Yes			No		No	–	Yes	–		
Vacuum operation at port 1		No			With external pilot air										
Design		Piston spool valve													
Sealing principle		Soft													
Actuation type		Electric													
Type of control		Piloted													
Pilot air supply		External													
Exhaust function		With flow control													
Manual override		Choice of non-detenting, covered, non-detenting/detenting or detenting													
Type of mounting		On manifold rail													
Mounting position		Any													
Switching position display		LED													
Standard nominal flow rate G18	[l/min]	530			470			350		550	560	550	510		
Flow rate on manifold rail G18, front	[l/min]	490			440			320		500	510	500	470		
Flow rate on manifold rail G18, underneath	[l/min]	530			470			350		550	560	550	510		
Width	[mm]	14													
Port 1, 3, 5		On manifold rail													
Port 2, 4		G1⁄8													
Port 12, 14		On manifold rail													
Product weight	[g]	102			100			91			98	89	95		
Certification		c UL us - Recognized (OL)													
		c CSA us (OL)													
CE marking (see declaration of conformity)		To EU EMC Directive[5]													
Corrosion resistance class CRC[6]		2													

1) C=Normally closed/mid-position closed
2) U=Normally open/mid-position pressurised
3) E=Normally 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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Sub-base valves G1/8

FESTO

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 in accordance with ISO 8573-1:2010 [7:4:4]						
Operating pressure	Internal	[bar]	1.5 ... 8	3.5 ... 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[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		IP67

Safety characteristics		
Note on forced checking procedure		Switching frequency min. 1/week
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 [ms]								
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

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Sub-base valves G1/8

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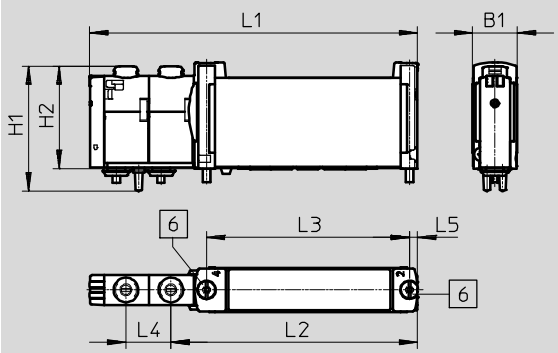
Dimensions Download CAD data ➔ **www.festo.com**

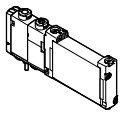
Sub-base valve G1/8



6 Mounting screw

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

Ordering data

	Description	Part No.	Type
Sub-base valve G⅛			
	3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**8028235**	**VUVG-B14Z-M32C-AZT-F-1T1L**
	Normally open, external pilot air supply, pneumatic spring return	**8028236**	**VUVG-B14Z-M32U-AZT-F-1T1L**
	2x3/2-way valve		
	Normally closed, external pilot air supply, pneumatic spring return	**573476**	**VUVG-B14-T32C-AZT-F-1T1L**
	Normally open, external pilot air supply, pneumatic spring return	**573477**	**VUVG-B14-T32U-AZT-F-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, pneumatic spring return	**573478**	**VUVG-B14-T32H-AZT-F-1T1L**
	Normally closed, external pilot air supply, mechanical spring return	**573479**	**VUVG-B14-T32C-MZT-F-1T1L**
	Normally open, external pilot air supply, mechanical spring return	**573480**	**VUVG-B14-T32U-MZT-F-1T1L**
	1x normally open, 1x normally closed, external pilot air supply, mechanical spring return	**573481**	**VUVG-B14-T32H-MZT-F-1T1L**
	5/2-way valve, single solenoid		
	External pilot air supply, pneumatic spring return	**573482**	**VUVG-B14-M52-AZT-F-1T1L**
	External pilot air supply, mechanical spring return	**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		
	Mid-position closed, external pilot air supply	**573485**	**VUVG-B14-P53C-ZT-F-1T1L**
	Mid-position pressurised, external pilot air supply	**573487**	**VUVG-B14-P53U-ZT-F-1T1L**
	Mid-position exhausted, external pilot air supply	**573486**	**VUVG-B14-P53E-ZT-F-1T1L**

New

Valve terminals VTUG with multi-pin plug and fieldbus connection

Order code – Manifold rail

VABM	–	L1	–					–	

Designation	
Manifold rail	L1

Size	
Size 10	10
Size 14	14

Version	
Standard	–
High flow rate	H

Connection type	
Semi in-line	G
Sub-base	W

Connection direction	
Side	–
Underneath	B

Pneumatic connection	
G1/8	G18
G1/4	G14

	–		–			

Outlet direction of electrical components	
–	Top

Circuitry	
–	None
R	Holding current reduction with protective circuit

Electrical connection	
–	None
G	Preparation for electrical connection

Connection for valve function	
–	5/2-way
M	5/2-way, single solenoid

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

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Manifold rail VABM

General technical data				
Manifold rail			Size 10	Size 14
Type code			VABM	
Grid dimension		[mm]	10.5	16
Mounting position			Any	
Connection type			Semi in-line/sub-base	
Max. number of valve positions			24	
Pneumatic interfaces				
	Port 12/14		M5	
	Port 82/84		M5	
	Port 2, 4		M5/M7	G⅛
	Port 1, 3, 5		G⅛	G¼
Storage temperature		[°C]	–20 ... 60	
Certification			c UL us - Recognized (OL)	
			c CSA us (OL)	
CE marking (see declaration of conformity)			To EU EMC Directive[1)]	
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 ➔ User documentation.
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

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-...	870	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

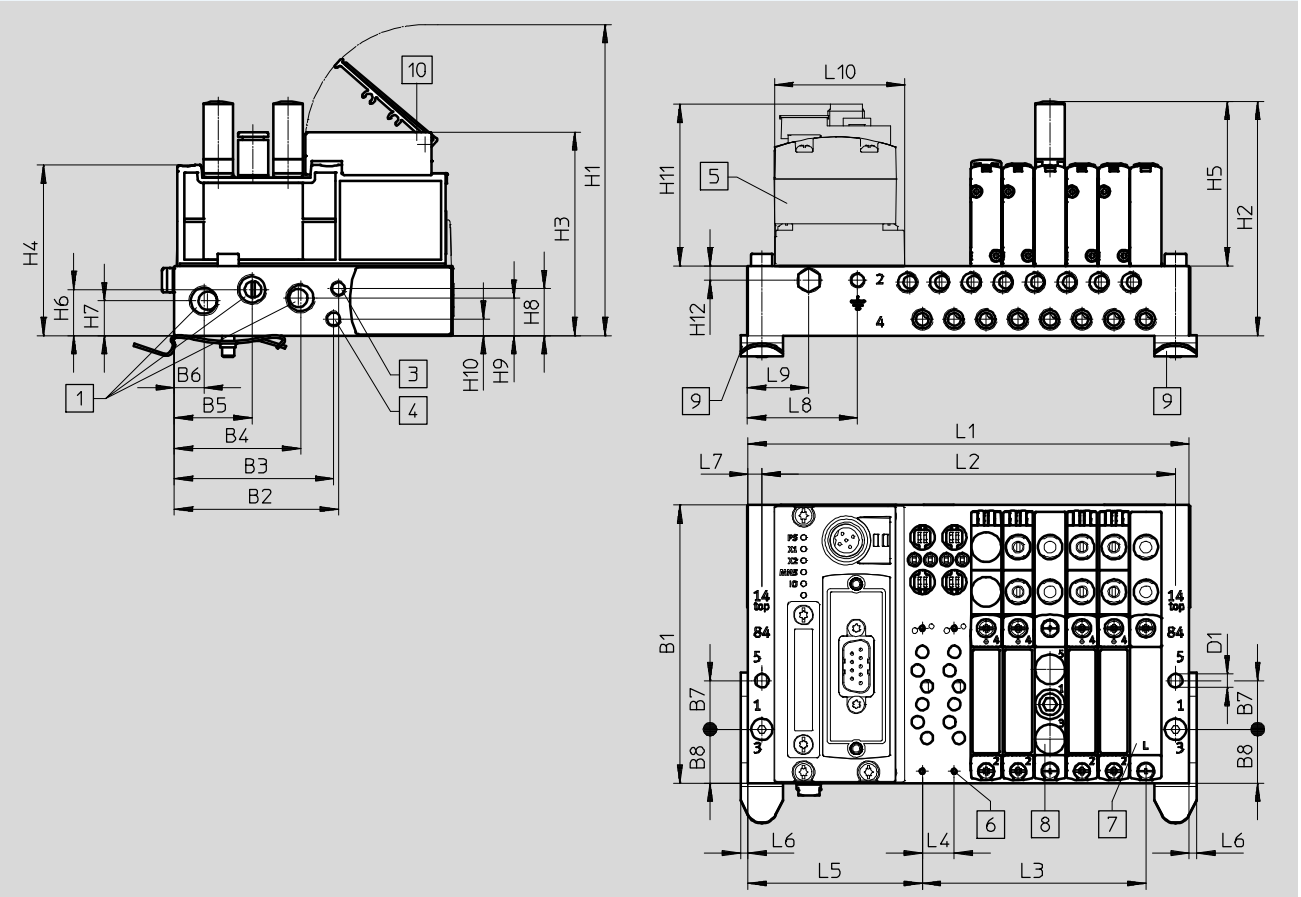
Information on materials	
Manifold rail material	Wrought aluminium alloy
Note on materials	RoHS-compliant

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Manifold rail VABM

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

Outlet on top



1 Ports 1, 3 and 5: G⅛/G¼ (at both ends)
3 Ports 12/14: M5 (at both ends)
4 Ports 82/84: M5 (at both ends)
5 CTEU-CANopen
6 For mounting valves/blanking plates/supply plates on manifold block: M2/M2.5
7 Blanking plate
8 Supply plate, ports 1, 3 and 5: M7/G⅛
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

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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 10			Size 14		
		L1	L2	L3	L1	L2	L3
VABM	4	103	94	31.5	128	118	48
	5	113.5	104.5	42	144	134	64
	6	124	115	52.5	160	150	80
	7	134.5	125.5	63	176	166	96
	8	145	136	73.5	192	182	112
	9	155.5	146.5	84	208	198	128
	10	166	157	94.5	224	214	144
	12	187	178	115.5	256	246	176
	16	229	220	157.5	320	310	240
	20	271	262	199.5	384	374	304
	24	313	304	241.5	448	438	368

Valve terminals VTUG with multi-pin plug and fieldbus connection

Technical data – Manifold rail VABM

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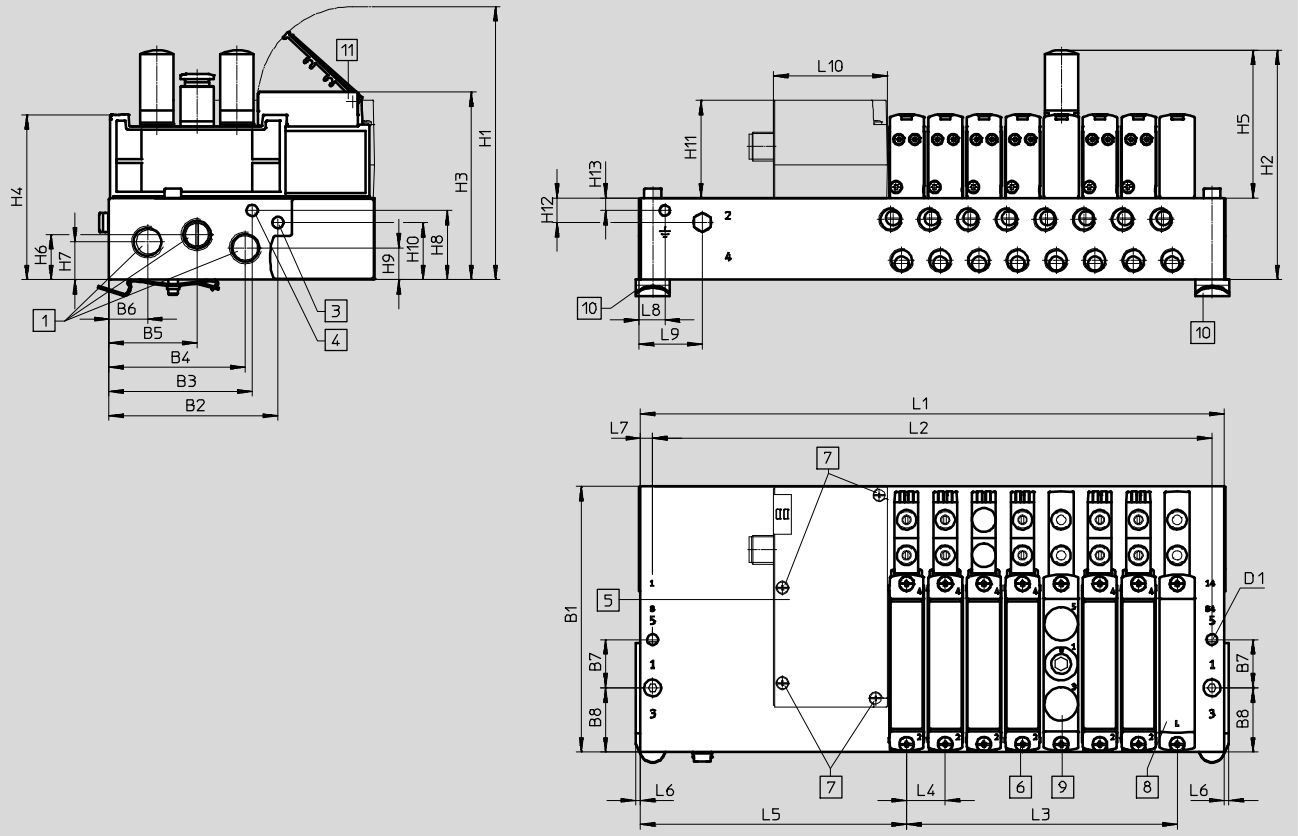
Dimensions – Example of a valve terminal with I-Port interface

Download CAD data ➔ **www.festo.com**

Outlet on the side



1 Ports 1, 3 and 5: G⅛/G¼ (at both ends)
3 Ports 12/14: M5 (at both ends)
4 Ports 82/84: M5 (at both ends)
5 Electrical connection for I-Port interface/IO-Link
6 Mounting screw
7 Electrical interface - mounting on manifold block: M3
8 Blanking plate
9 Supply plate, ports 1, 3 and 5: M7/G⅛
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

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Technical data – Manifold rail VABM

Type	No. of valve positions	Size 10			Size 14		
		L1	L2	L3	L1	L2	L3
VABM	4	152.5	143.5	31.5	177.5	167.5	48
	5	163	154	42	193.5	183.5	64
	6	173.5	164.5	52.5	209.5	199.5	80
	7	184	175	63	225.5	215.5	96
	8	194.5	185.5	73.5	241.5	231.5	112
	9	205	196	84	257.5	247.5	128
	10	215.5	206.5	94.5	273.5	263.5	144
	12	236.5	227.5	115.5	305.5	295.5	176
	16	278.5	269.5	157.5	369.5	359.5	240
	20	321	311.5	199.5	433.5	423.5	304
	24	362.5	353.5	241.5	497.5	487.5	368

Note

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

Valve terminals VTUG with multi-pin plug and fieldbus connection

Dimensions – Example of a valve terminal

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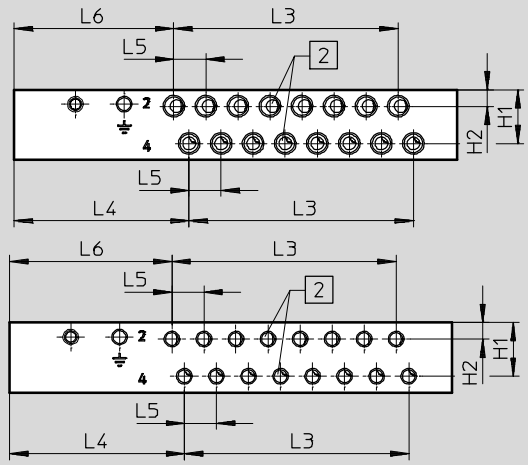
Dimensions – Front manifold rail

Download CAD data ➔ **www.festo.com**

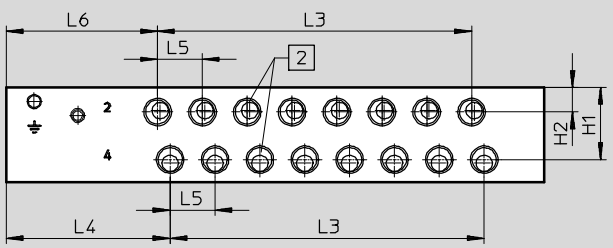
Size 10, I-Port interface, outlet on top



2 Ports 2 and 4: M7

2 Ports 2/4: M5

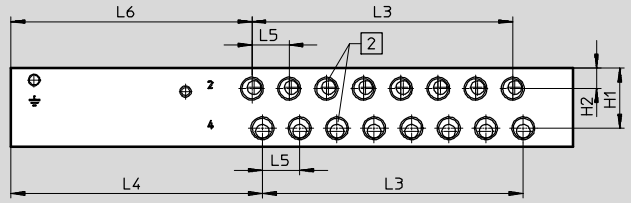
Size 14, I-Port interface, outlet on top



2 Ports 2/4: G1/8

Dimensions – Front manifold rail

Size 10/14, I-Port interface, outlet on the side



2 Ports 2 and 4: M5, M7, G1/8

Type	Manifold rail with I-Port interface, outlet on top				
	H1	H2	L4	L5	L6
Connection M7	17.6	5.4	57.3	10.5	52.3
Connection M5					53.2
Connection G1/8	25.8	8.8	58.5	16	54

Type	Manifold rail with I-Port interface, outlet on the side				
	H1	H2	L4	L5	L6
Connection M7	17.6	5.4	106.8	10.5	101.8
Connection M5					102.7
Connection G1/8	25.8	8.8	108	16	103.5

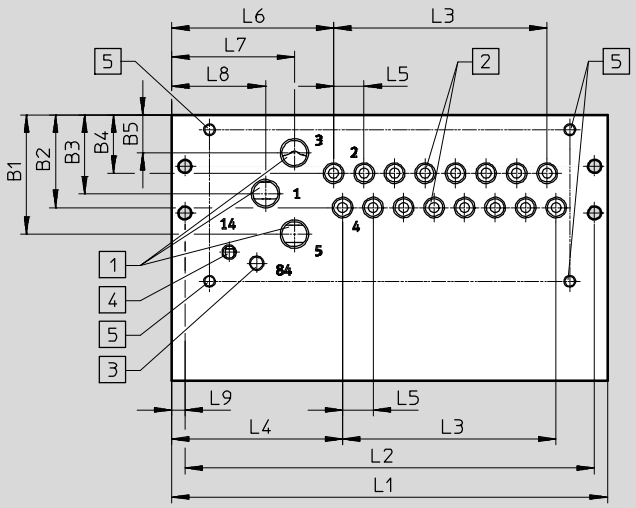
Type	No. of valve positions	Size 10	Size 14
		L3	L3
VABM	4	31.5	48
	5	42	64
	6	52.5	80
	7	63	96
	8	73.5	112
	9	84	128
	10	94.5	144
	12	115.5	176
	16	157.5	240
	20	199.5	304
	24	241.5	368

Valve terminals VTUG with multi-pin plug and fieldbus connection

Dimensions – Example of control cabinet installation

Dimensions – Manifold rail, outlet underneath Download CAD data ➔ **www.festo.com**

Control cabinet installation



Note

Dimensions of the manifold rail with I-Port interface, outlet on the side for control cabinet installation (➔132)

1 Ports 1, 3 and 5: G1⁄8/G1⁄4 (at both ends)

2 Ports 2 and 4: M5/M7/G1⁄8 (at both ends)

3 Ports 12/14: M5 (at both ends)

4 Ports 82/84: M5 (at both ends)

5 Mounting holes, outlet direction underneath: M4x8

Type	Manifold rail with I-Port interface, outlet 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, outlet 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	No. of valve positions	Size 10			Size 14		
		L1 +5	L2 +5	L3	L1	L2	L3
VABM	4	103	94	31.5	128	118	48
	5	113.5	104.5	42	144	134	64
	6	124	115	52.5	160	150	80
	7	134.5	125.5	63	176	166	96
	8	145	136	73.5	192	182	112
	9	155.5	146.5	84	208	198	128
	10	166	157	94.5	224	214	144
	12	187	178	115.5	256	246	176
	16	229	220	157.5	320	310	240
	20	271	262	199.5	384	374	304
	24	313	304	241.5	448	438	368

Valve terminals VTUG with multi-pin plug and fieldbus connection

Dimensions

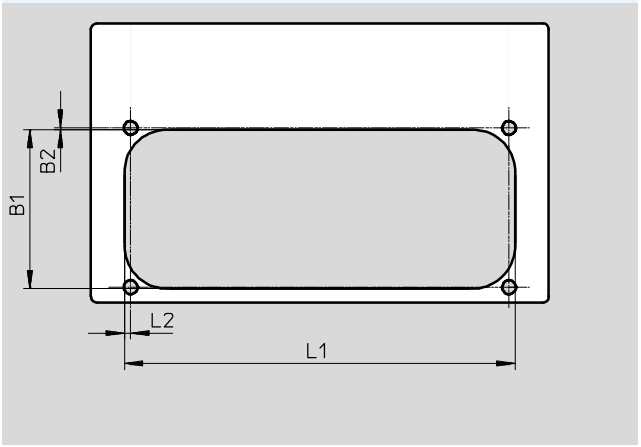
Type	Manifold rail with I-Port interface, outlet on the side, size 10										
	B1	B2	B3	B4	B5	L4	L5	L6	L7	L8	L9
VABM	41	31.8	27	20	13	108.3	10.5	105.2	91.8	81.8	4.5

Type	Manifold rail with I-Port interface, outlet on the side, 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

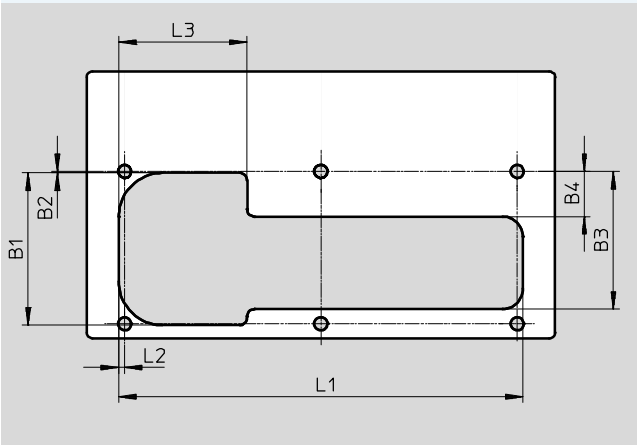
Type	No. of valve positions	Manifold rail with I-Port interface, outlet on the side, size 10			Manifold rail with I-Port interface, outlet on the side, size 14		
		L1 +5	L2 +5	L3	L1	L2	L3
VABM	4	152.5	143.5	31.5	177.5	167.5	48
	5	163	154	42	193.5	183.5	64
	6	173.5	164.5	52.5	209.5	199.5	80
	7	184	175	63	225.5	215.5	96
	8	194.5	185.5	73.5	241.5	231.5	112
	9	205	196	84	257.5	247.5	128
	10	215.5	206.5	94.5	273.5	263.5	144
	12	236.5	227.5	115.5	305.5	295.5	176
	16	278.5	269.5	157.5	369.5	359.5	240
	20	320.5	311.5	199.5	433.5	423.5	304
	24	362.5	353.5	241.5	497.5	487.5	368

Dimensions – Recess for control cabinet installation, outlet underneath, size 10

Up to 8 valves



9 or more valves



Type	B1	B2	L1	L2
VABM-L--10...G18-4	52.7	0.5	86	2
VABM-L--10...G18-5			96.5	
VABM-L--10...G18-6			107	
VABM-L--10...G18-7			117.5	
VABM-L--10...G18-8			128	

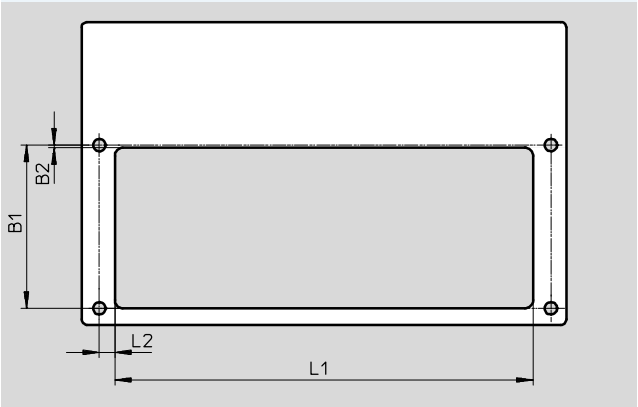
Type	B1	B2	B3	B4	L1	L2	L3
VABM-L--10...G18-9	52.7	0.5	47.2	15.4	138.5	2	44
VABM-L--10...G18-10					149		
VABM-L--10...G18-12					170		
VABM-L--10...G18-16					212		
VABM-L--10...G18-20					254		
VABM-L--10...G18-24					296		

Valve terminals VTUG with multi-pin plug and fieldbus connection

Dimensions

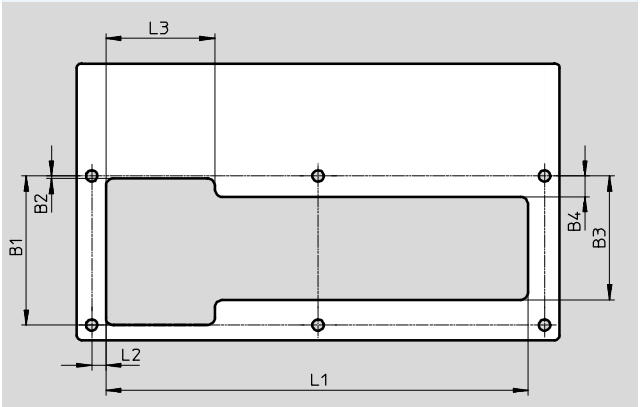
Dimensions – Recess for control cabinet installation, outlet underneath, size 14

Up to 7 valves



Type	B1	B2	L1	L2
VABM-L-14...G14-4	59.3	1	130.9	5.6
VABM-L-14...G14-5			119.9	
VABM-L-14...G14-6			135.9	
VABM-L-14...G14-7			151.9	

8 or more valves



Type	B1	B2	B3	B4	L1	L2	L3
VABM-L-14...G14-8	59.3	1	49.3	8.3	167.9	56	43.4
VABM-L-14...G14-9					183.9		
VABM-L-14...G14-10					199.9		
VABM-L-14...G14-12					231.9		
VABM-L-14...G14-16					295.9		
VABM-L-14...G14-20					359.9		
VABM-L-14...G14-24					423.9		

Dimensions – Mounting holes, size 10

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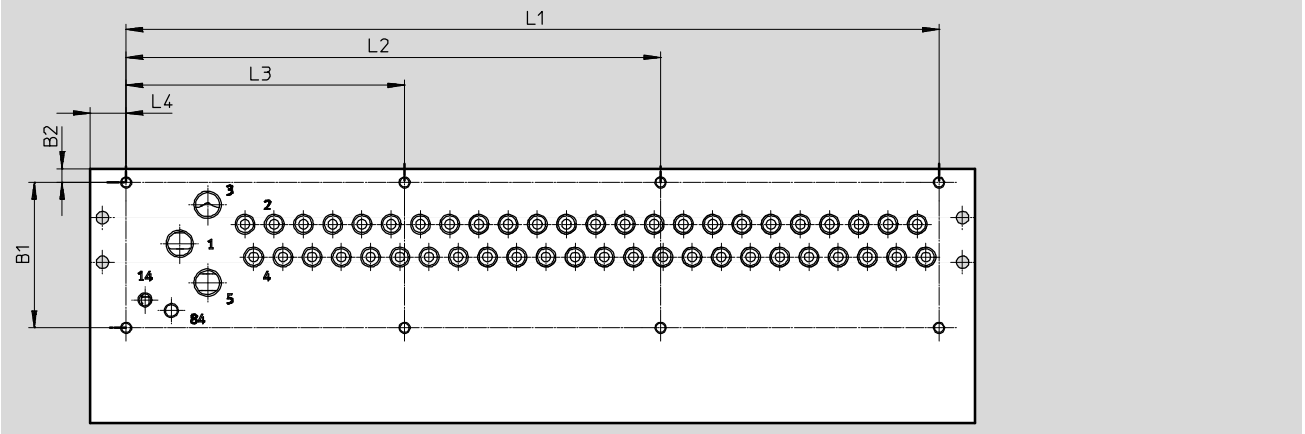

Type		B1	B2	L1	L2	L3	L4	I-Port interface, outlet on the side L4
VABM-L1-10...-G18-4	Up to	52.2	5	82	–	–	13	62.5
VABM-L1-10...-G18-5	8 valves			92.5	–	–		
VABM-L1-10...-G18-6				103	–	–		
VABM-L1-10...-G18-7				113.5	–	–		
VABM-L1-10...-G18-8				124	–	–		
VABM-L1-10...-G18-9	Up to			134.5	–	67.25		
VABM-L1-10...-G18-10	20 valves			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			292	192	100		

Valve terminals VTUG with multi-pin plug and fieldbus connection

Dimensions

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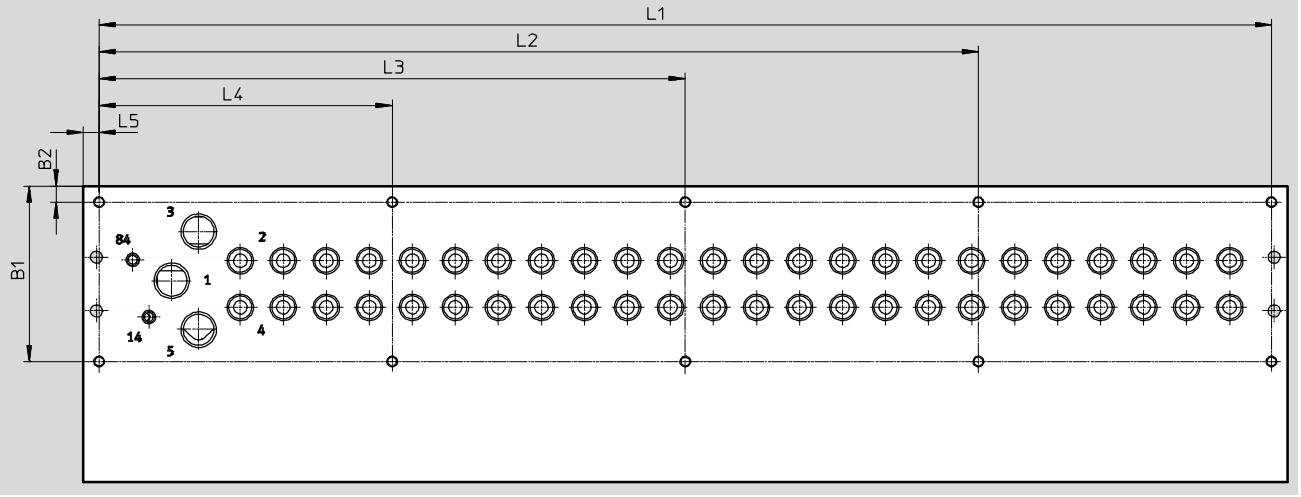
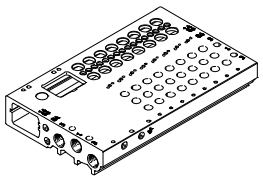
Dimensions – Mounting holes, size 14 Download CAD data ➔ **www.festo.com**



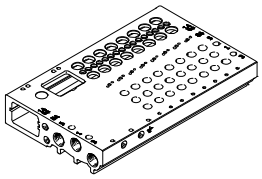
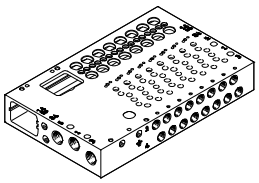
Type		B1	B2	L1	L2	L3	L4	L5	I-Port interface, outlet on the side L4
VABM-L1-14...-G14-4	Up to 8 valves	59.3	6	116	–	–	–	6	55.5
VABM-L1-14...-G14-5				132	–	–	–		
VABM-L1-14...-G14-6				148	–	–	–		
VABM-L1-14...-G14-7				164	–	–	–		
VABM-L1-14...-G14-8	8 to 10 valves			180	–	–	90		
VABM-L1-14...-G14-9				196	–	–	98		
VABM-L1-14...-G14-10				212	–	–	106		
VABM-L1-14...-G14-12	12 valves and 16 valves			244	–	162	82		
VABM-L1-14...-G14-16				308	–	204	104		
VABM-L1-14...-G14-20	20 valves and 24 valves			372	279	186	93		
VABM-L1-14...-G14-24				436	327	218	109		

Ordering data

	Description		Part No.	Type
Manifold rail for semi in-line valve				
	For valve size M5/M7			
	Port 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 double solenoid + 16 single solenoid valves	**573928**	**VABM-L1-10G-G18-20-M-GR**
		24 single solenoid valves	**573929**	**VABM-L1-10G-G18-24-M-GR**

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				
	For valve size G¼			
	Port 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 double solenoid + 16 single solenoid valves	**573934**	**VABM-L1-14G-G14-20-M-GR**
		24 single solenoid valves	**573935**	**VABM-L1-14G-G14-24-M-GR**
Manifold rail for sub-base valve				
	For valve size M7			
	Port 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 double solenoid + 16 single solenoid valves	**573931**	**VABM-L1-10HW-G18-20-M-GR**
		24 single solenoid valves	**573932**	**VABM-L1-10HW-G18-24-M-GR**
	For valve size G¼			
	Port 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 double solenoid + 16 single solenoid valves	**573937**	**VABM-L1-14W-G14-20-M-GR**
		24 single solenoid valves	**573938**	**VABM-L1-14W-G14-24-M-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)
- Flat cable (26-pin)
- Flat 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 double solenoid valves per manifold rail is limited (➔ pin allocation page 137).

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		Flat cable plug	
Max. number of valve positions	24		24	
Degree of protection to EN 60529	IP67		IP40	
Material	Polyamide		Polyamide	
Note on materials	RoHS-compliant		RoHS-compliant	
Certification	c UL us - Recognized (OL)			
	c CSA us (OL)			
CE marking (see declaration of conformity)	To EU EMC Directive[1)]			
Corrosion resistance class CRC[2)]	2			
Weight [g]	53		45	48

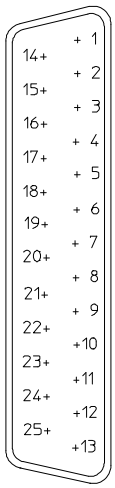
1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ User documentation.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce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

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

Valve terminals VTUG with multi-pin plug connection

Technical data – Multi-pin plug connection

Pin allocation – Sub-D plug, 25-pin

	Pin	M1-25 (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	

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.

VP Valve position

.

Valve terminals VTUG with multi-pin plug connection

Technical data – Multi-pin plug connection

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Pin allocation – Sub-D plug, 25-pin

Pin	M1-25V1 (V22)		M1-25V2 (V23)		M1-25V3 (V24)		M1-25V4 (V25)	
1	VP0	14	VP0	14	VP0	14	VP0	14
2	VP0	12	VP0	12	VP0	12	VP1	14
3	VP1	14	VP1	14	VP1	14	VP2	14
4	VP1	12	VP1	12	VP1	12	VP3	14
5	VP2	14	VP2	14	VP2	14	VP4	14
6	VP2	12	VP2	12	VP2	12	VP5	14
7	VP3	14	VP3	14	VP3	14	VP6	14
8	VP3	12	VP3	12	VP3	12	VP7	14
9	VP4	14	VP4	14	VP4	14	VP8	14
10	VP4	12	VP4	12	VP5	14	VP9	14
11	VP5	14	VP5	14	VP6	14	VP10	14
12	VP5	12	VP5	12	VP7	14	VP11	14
13	VP6	14	VP6	14	VP8	14	VP12	14
14	VP6	12	VP6	12	VP9	14	VP13	14
15	VP7	14	VP7	14	VP10	14	VP14	14
16	VP7	12	VP7	12	VP11	14	VP15	14
17	VP8	14	VP8	14	VP12	14	VP16	14
18	VP8	12	VP9	14	VP13	14	VP17	14
19	VP9	14	VP10	14	VP14	14	VP18	14
20	VP9	12	VP11	14	VP15	14	VP19	14
21	Com 16 … 19		Com 16 … 19		Com 16 … 19		Com 16 … 19	
22	Com 12 … 15		Com 12 … 15		Com 12 … 15		Com 12 … 15	
23	Com 8 … 11		Com 8 … 11		Com 8 … 11		Com 8 … 11	
24	Com 4 … 7		Com 4 … 7		Com 4 … 7		Com 4 … 7	
25	Com 0 … 3		Com 0 … 3		Com 0 … 3		Com 0 … 3	
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Pin allocation – Sub-D plug, 44-pin

Pin	M1-44 (V21) 18x double solenoid, 6x single solenoid	
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	VP19	14
39	VP20	14
40	VP21	14
41	VP22	14
42	VP23	14
43	com	
44		

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.

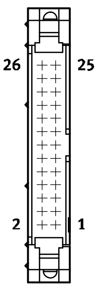
VP Valve position

FESTO

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	
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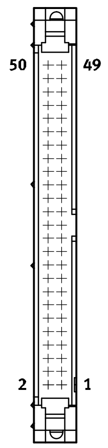
Note

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

Valve terminals VTUG with multi-pin plug connection

Technical data – Multi-pin plug connection

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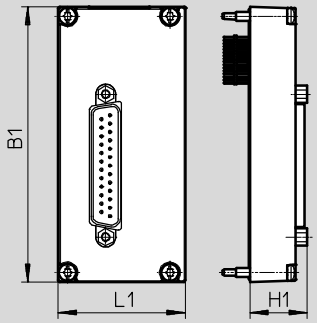
Dimensions Download CAD data ➔ **www.festo.com**

Multi-pin plug connection, Sub-D



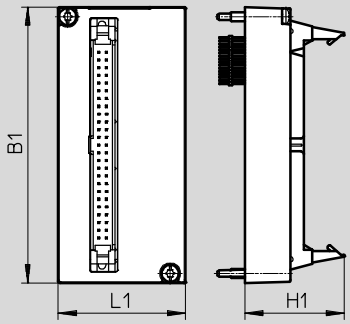
Note

Dimensions of the manifold rail with electrical connection (➔ page 126)

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, flat cable plug



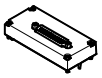
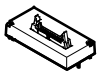
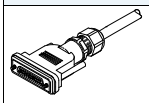
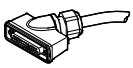
Note

Dimensions of the manifold rail with electrical connection (➔ page 126)

Type	B1	L1	H1
VAEM-L1-S-M3-...	90.5	41.9	32.7

Valve terminals VTUG with multi-pin plug connection

Accessories – Multi-pin plug connection

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	Cable length 2.5 m	**575417**	**NEBV-S1G25-K-2.5-N-LE25-S6**
		Cable length 5 m	**575418**	**NEBV-S1G25-K-5-N-LE25-S6**
		Cable length 10 m	**575419**	**NEBV-S1G25-K-10-N-LE25-S6**
	• Sub-D socket, straight, 44-pin, up to 35 coils, IP40 • Open cable end, 44-wire	Cable length 2.5 m	**575113**	**NEBV-S1G44-K-2.5-N-LE44-S6**
		Cable length 5 m	**575114**	**NEBV-S1G44-K-5-N-LE44-S6**
		Cable length 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	Cable length 2.5 m	**575423**	**NEBV-S1WA25-K-2.5-N-LE25-S9**
		Cable length 5 m	**575424**	**NEBV-S1WA25-K-5-N-LE25-S9**
		Cable length 10 m	**575425**	**NEBV-S1WA25-K-10-N-LE25-S9**
	• Sub-D socket, angled, 44-pin, up to 35 coils, IP65 • Open cable end, 44-wire	Cable length 2.5 m	**575420**	**NEBV-S1WA44-K-2.5-N-LE44-S9**
		Cable length 5 m	**575421**	**NEBV-S1WA44-K-5-N-LE44-S9**
		Cable length 10 m	**575422**	**NEBV-S1WA44-K-10-N-LE44-S9**

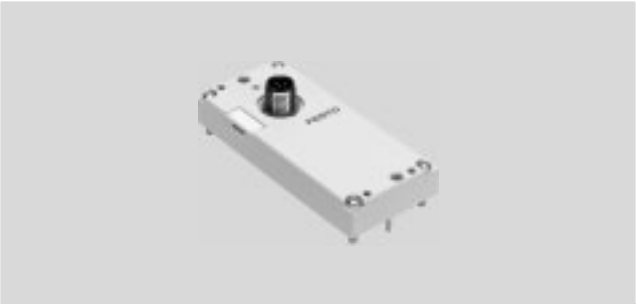
New
VTUG

Valve terminals VTUG, I-Port interface/IO-Link

Technical data – I-Port interface/IO-Link

FESTO

Festo-specific, standardised interface for direct connection to the fieldbus via 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 fieldbus nodes (CTEU)
- IO-Link mode for direct connection to a higher-level IO-Link master

The following protocols are supported in connection with the associated CTEU node:
- CANopen
- DeviceNet
- PROFIBUS
- CC-LINK
- EtherCAT

The electrical supply/transmission of communication data takes place via an M12 plug.

The valve terminal can be equipped with 4 ... 24 (double solenoid) valves.

General technical data

Communication types			IO-Link
Electrical connection			• M12 plug, 5-pin • A-coded • Metal thread for screening
Baud rates	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. number 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
Degree of protection to EN 60529			IP67
Certification			c UL us - Recognized (OL)
			c CSA us (OL)
CE marking (see declaration of conformity)			To EU EMC Directive[1)]
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 ➔ User documentation.
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.

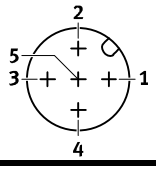
LED display

	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

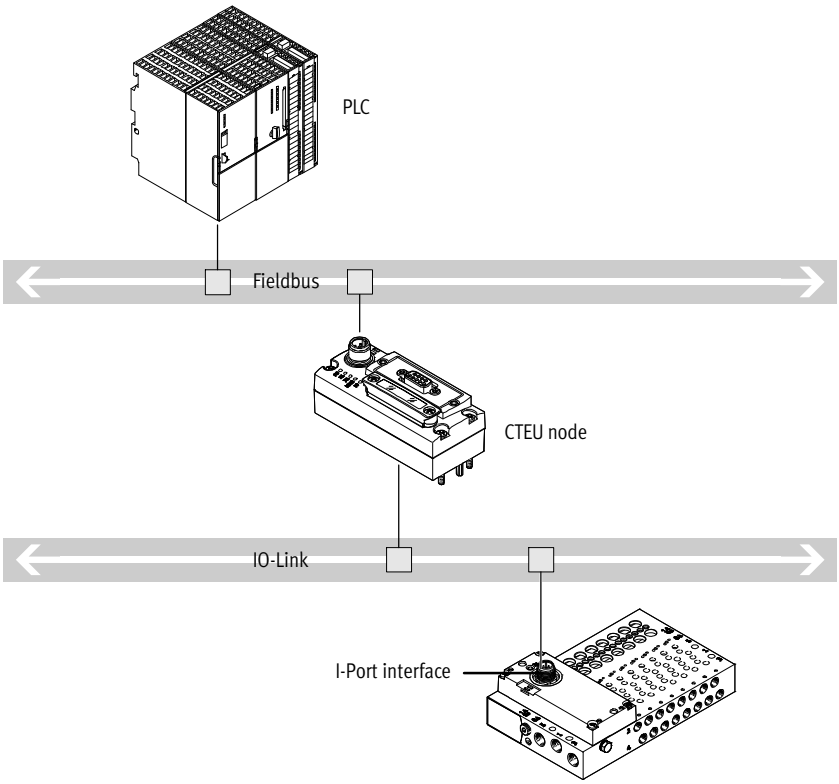
Valve terminals VTUG, I-Port interface/IO-Link

Technical data – I-Port interface/IO-Link

Pin allocation – I-Port interface/IO-Link

	Pin	Allocation	Description
	1	$24V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
	2	$24V_{VAL/OUT}$	Load voltage supply (valves/outputs)
	3	$0V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
	4	C/Q	Data communication
	5	$0V_{VAL/OUT}$	Load voltage supply (valves/outputs)

System overview – IO-Link



- Communication with the higher-order controller via fieldbus
- Use a fieldbus node CTEU compatible with the fieldbus protocol
- Up to 64 inputs/outputs (solenoid coils), depending on the valve terminal
- No preprocessing

Valve terminals VTUG, I-Port interface/IO-Link

Technical data – I-Port interface/IO-Link

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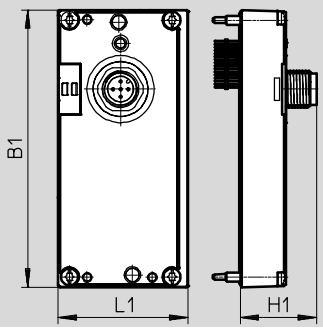
Dimensions Download CAD data ➔ **www.festo.com**

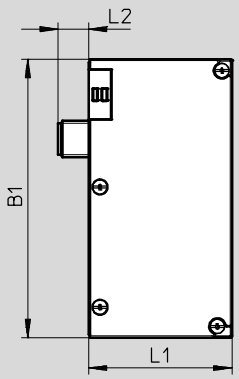
I-Port interface, outlet on top



Note

Dimensions of the manifold rail with E-box (➔ page 126)

I-Port interface, outlet on the side

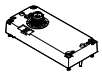


Note

Dimensions of the manifold rail with E-box (➔ page 126)

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-pin for IO-Link and load supply	**171175**	**FB-TA-M12-5POL**
	Straight plug, 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, connecting blocks CAPC

Technical data – CAPC

Function

The connecting block CAPC enables the decentralised installation of fieldbus nodes CTEU on a valve terminal or input modules with I-Port interface.

Application

- M12 connection technology (two interfaces)
- Enables the installation of valve terminals or other devices over a distance of 20 metres
- Accessory CAFM enables the connecting block to 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		2 x 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

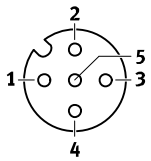
Materials	
Housing	PA reinforced
Note on materials	RoHS-compliant

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[1)]
CE marking (see declaration of conformity)		To EU EMC Directive[2)]

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

2) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ User documentation.
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	Allocation	Description
1	$24V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
2	$24V_{VAL/OUT}$	Load voltage supply (valves/outputs)
3	$0V_{EL/SEN}$	Operating voltage supply (electronics, sensors/inputs)
4	C/Q	Data communication
5	$0V_{VAL/OUT}$	Load voltage supply (valves/outputs)
	Housing, FE	Functional earth

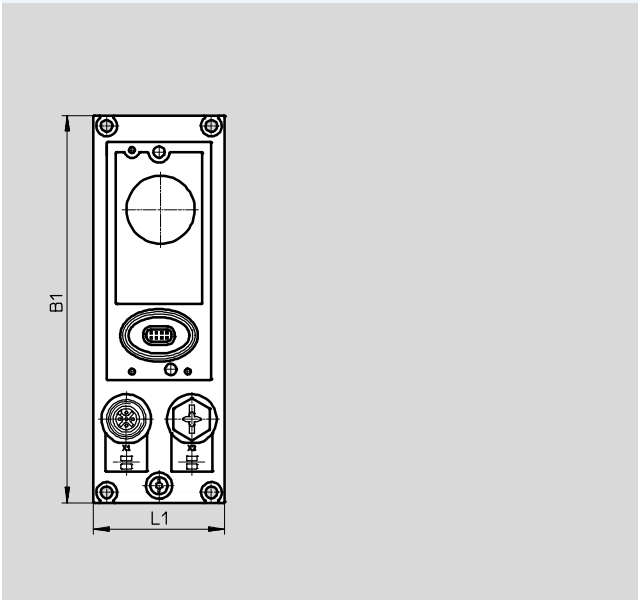
Valve terminals VTUG, connecting blocks CAPC

Technical data – CAPC

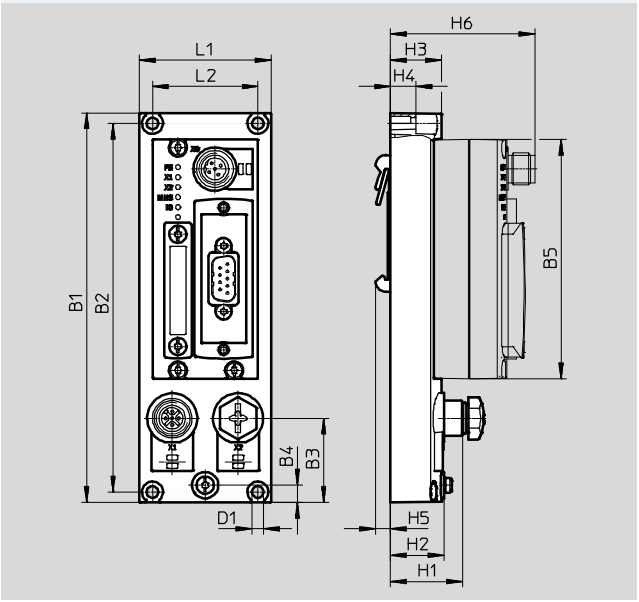
FESTO

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

CAPC

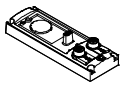
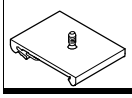


CAPC with mounted fieldbus node CTEU-CO



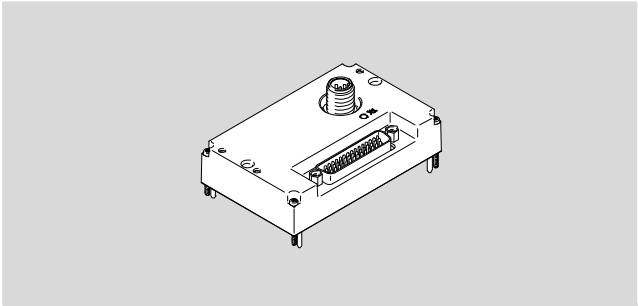
Type	B1	B2	B3	B4	B5	D1-Ø	H1	H2	H3	H4	H5	H6	L1	L2
CAPC	148	140	32	6.6	91	4.4	27.3	20.3	19.3	9.6	5.7	54.8	50	40

Ordering data – CAPC

		Part No.	Type
Connecting block			
	For connecting a second device with I-Port interface	**570042**	**CAPC-F1-E-M12**
H-rail mounting			
	For connecting 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
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 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Valve terminals VTUG with interlock

Technical data – Interlock

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Interlock interface

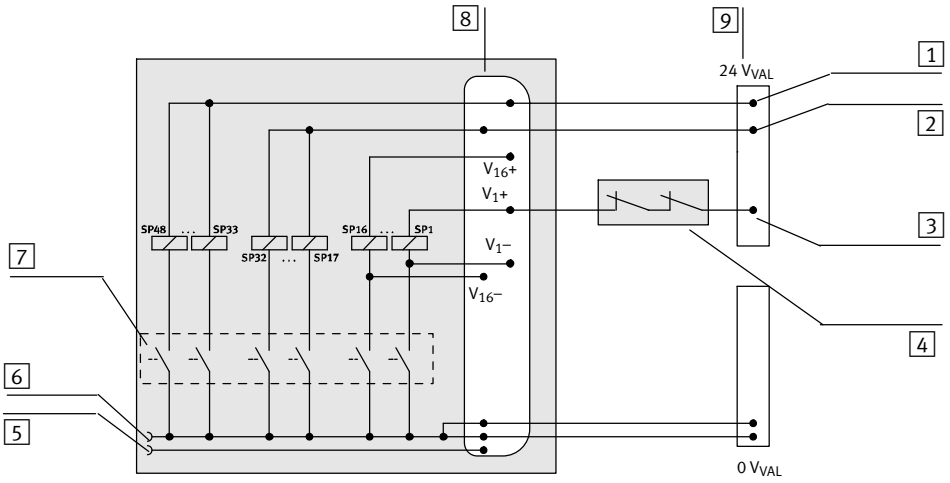
Single-pin interlock interface

- 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 an image table

Double-pin interlock interface

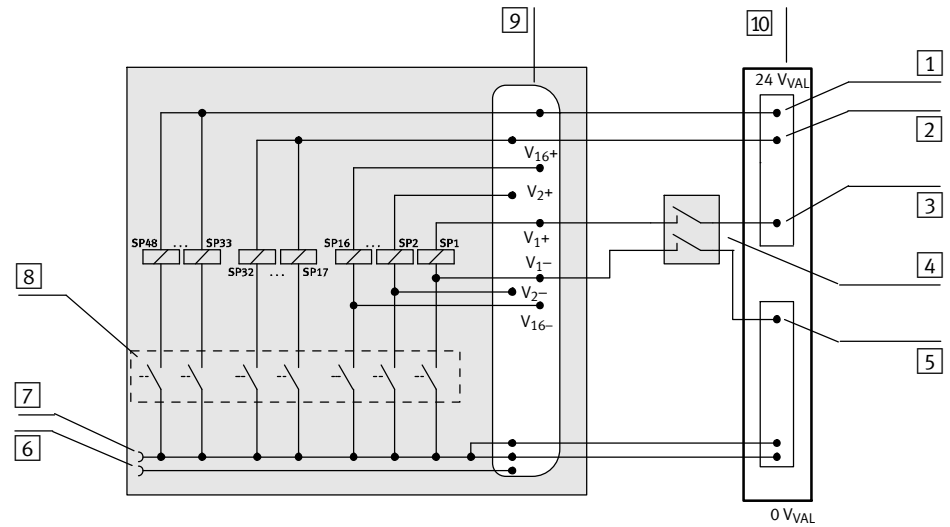
- The interlock interface is established via external positive-negative switching safety terminals
- The solenoid coils of the interlock valves are actuated via the corresponding pins in the sub-D plug (pins 7 ... 38)
- Solenoid coils that do not require interlock actuation can be supplied directly with 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

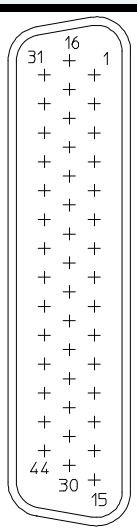


1 Power supply V+, solenoid coils 33 ... 48 (no interlock)
2 Power supply V+, solenoid coils 17 ... 32 (no interlock)
3 Actuation Vn+ (via interlock)
4 Interlock contacts of the output terminal
5 Actuation Vn– (via interlock)
6 I-Port connection pin 2, 24 VVAL/ OUT (PL), load voltage supply
7 I-Port 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)

Valve terminals VTUG with interlock

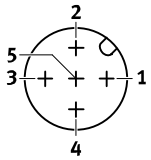
Technical data – Interlock

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	Allocation	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 with interlock

Technical data – Interlock

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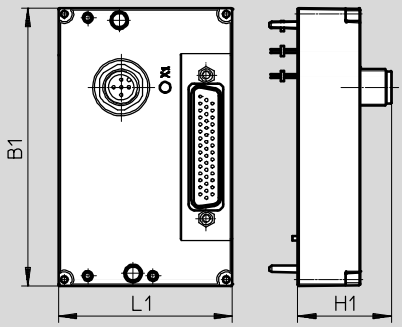
Dimensions Download CAD data ➔ **www.festo.com**

I-Port interface with interlock, outlet on top



Note

Dimensions of the manifold rail with E-box (➔ page 126)

Type	Outlet on top		
	B1	L1	H1
VAEM-L1-S-24-PTK	91	57	30.8

Valve terminals VTUG with multi-pin plug and fieldbus connection

Accessories – Valve terminal

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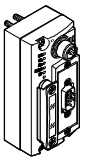
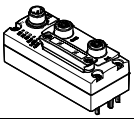
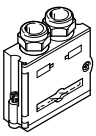
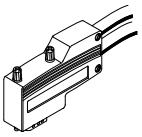
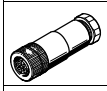
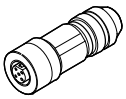
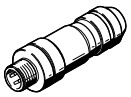
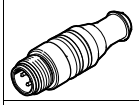
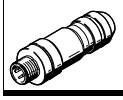
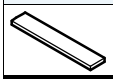
Ordering data – CTEU			
	Description	Part No.	Type
Bus node			
	CANopen bus node	570038	CTEU-CO
	CC-Link bus node	1544198	CTEU-CC
	PROFIBUS bus node	570040	CTEU-PB
	DeviceNet bus node	570039	CTEU-DN
	EtherCAT bus node	572556	CTEU-EC
Bus connection			
	Sub-D plug, straight, for CANopen	532219	FBS-SUB-9-BU-2x5POL-B
	Sub-D plug, straight, for CC-Link	532220	FBS-SUB-9-GS-2x4POL-B
	Sub-D plug, straight, for PROFIBUS	532216	FBS-SUB-9-GS-DP-B
	Sub-D plug, angled, for CANopen, 9-pin	533783	FBS-SUB-9-WS-CO-K
	Sub-D plug, angled, for PROFIBUS, 9-pin	533780	FBS-SUB-9-WS-PB-K
	M12x1, 5-pin, A-coded, for CANopen	525632	FBA-2-M12-5POL
	M12x1, 5-pin, 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
	Plug, M12x1, 5-pin, for CANopen	175380	FBS-M12-5GS-PG9
	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
	Straight plug, M12x1, 5-pin, for assembling a connecting cable compatible with FBA-2-M12-5POL-RK for PROFIBUS	1066354	NECU-M-S-B12G5-C2-PB
	Terminating resistor, M12, B-coded for PROFIBUS	1072128	CACR-S-B12G5-220-PB
	Plug M12x1, 4-pin, D-coded for EtherCAT	543109	NECU-M-S-D12G4-C2-ET

Valve terminals VTUG with multi-pin plug and fieldbus connection

Accessories – Valve terminal

FESTO

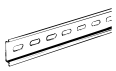
Ordering data – CTEU			
	Description	Part No.	Type
Plug socket			
	For power supply, M12x1, 5-pin, B-coded for CANopen/DeviceNet	538999	NTSD-GD-9-M12-5POL-RK
	For power supply, M12x1, 5-pin for CC-Link, PROFIBUS, EtherCAT	18324	FBSD-GD-9-5POL
Inscription label			
	For bus node	565306	ASLR-C-E4

Ordering data				
	Description		Part No.	Type
Silencer				Technical data ➔ Internet: u
	For thread M5	1 piece	165003	UC-M5
	For thread M7		161418	UC-M7
	For thread G⅛	50 pieces	534222	U-1/8-50
		1 piece	161419	UC-1/8
	For thread G¼	20 pieces	534220	UC-1/4-20
			534223	U-1/4-20
Fittings				Technical data ➔ Internet: qs
	For tubing Ø 3 mm	10 pieces	133003	QSM-M5-3-I-R
	For tubing Ø 4 mm		133004	QSM-M5-4-I-R
	For tubing Ø 6 mm		133005	QSM-M5-6-I-R
	For tubing Ø 6 mm		133007	QSM-M7-6-I-R
	For tubing Ø 3 mm		153313	QSM-M5-3-I
	For tubing Ø 4 mm		153315	QSM-M5-4-I
	For tubing Ø 4 mm		153319	QSM-M7-4-I
	For tubing Ø 4 mm	10 pieces	186106	QS-G1/8-4-I
	For tubing Ø 6 mm		186107	QS-G1/8-6-I
	For tubing Ø 8 mm		186109	QS-G1/8-8-I
	For tubing Ø 8 mm	20 pieces	130995	QS-B-1/4-8-I-20
	For tubing Ø 10 mm		132152	QS-B-1/4-10-I-20
	For tubing Ø 12 mm		132153	QS-B-1/4-12-I-20
	For tubing Ø 10 mm		132151	QS-B-1/8-10-I-20
	For tubing Ø 6 mm	10 pieces	186117	QSL-G1/8-6
	For tubing Ø 8 mm		186119	QSL-G1/8-8
	For tubing Ø 8 mm	20 pieces	130931	QSL-B-1/4-8-20
	For tubing Ø 10 mm		132127	QSL-B-1/4-10-20
	For tubing Ø 12 mm		132128	QSL-B-1/4-12-20
	For tubing Ø 10 mm		132126	QSL-B-1/8-10-20
	For tubing Ø 6 mm	10 pieces	186128	QSLL-G1/8-6
	For tubing Ø 8 mm		186130	QSLL-G1/8-8
	For tubing Ø 6 mm	20 pieces	132111	QSML-B-1/8-6-20
	For tubing Ø 3 mm	10 pieces	153331	QSML-M5-3
	For tubing Ø 4 mm		153333	QSML-M5-4
	For tubing Ø 4 mm		186352	QSML-M7-4
	For tubing Ø 3 mm		130838	QSMLL-M5-3
	For tubing Ø 4 mm		153339	QSMLL-M5-4
	For tubing Ø 4 mm		186354	QSMLL-M7-4
Blanking plug				Technical data ➔ Internet: b
	For thread M5	10 pieces	174308	B-M5-B
	For thread M7		174309	B-M7
	For thread G⅛		3568	B-1/8
	For thread G¼		3569	B-1/4

Valve terminals VTUG with multi-pin plug and fieldbus connection

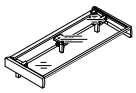
FESTO

Accessories – Valve terminal

Ordering data						
	Description				Part No.	Type
Blanking plate						
	Vacant position 10 mm				573422	VABB-L1-10-T
	Vacant position 14 mm				573488	VABB-L1-14-T
Supply plate						
	Supply ports 1, 3, 5, width 10 mm				573924	VABF-L1-10-P3A4-M7-T1
	Supply ports 1, 3, 5, width 14 mm				573925	VABF-L1-14-P3A4-G18-T1
Separator						
	Separator for sub-base manifold rail 10, M5/M7				569994	VABD-6-B
	Separator for semi in-line manifold rail 10, M5/M7				569995	VABD-8-B
	Separator for all manifold rails 14, G1/8				569996	VABD-10-B
H-rail				Technical data ➔ Internet: nrh		
	To EN 60715, 35 x 7.5 (WxH)			2 m	35430	NRH-35-2000
H-rail mounting				Technical data ➔ Internet: vame		
	Use the following screws for mounting: Size 10: M4x30 to DIN 912 Size 14: M4x40 to DIN 912			2 pieces	569998	VAME-T-M4
Cover cap for manual override				Technical data ➔ Internet: vmpa		
	Covered			10 pieces	540898	VMPA-HBV-B
	Non-detenting				540897	VMPA-HBT-B
	Detenting (without accessories)				8002234	VAMC-L1-CD
Restrictor						
	For M5 valves, for setting the flow rate during pressurisation and exhausting	Flow rate: 9.6 l/min	b value: 0.5	c value: 0.04	8025709	VFFG-T-M5-5
		Flow rate: 14.6 l/min	b value: 0.5	c value: 0.05	8025710	VFFG-T-M5-6
		Flow rate: 19.1 l/min	b value: 0.5	c value: 0.07	8025711	VFFG-T-M5-7
		Flow rate: 26.1 l/min	b value: 0.5	c value: 0.10	8025712	VFFG-T-M5-8
		Flow rate: 40.8 l/min	b value: 0.5	c value: 0.14	8025713	VFFG-T-M5-10
		Flow rate: 45.4 l/min	b value: 0.5	c value: 0.16	8025714	VFFG-T-M5-12
		Flow rate: 67.4 l/min	b value: 0.5	c value: 0.25	8025715	VFFG-T-M5-15

Valve terminals VTUG with multi-pin plug and fieldbus connection

Accessories – Valve terminal

Ordering data				
	Description		Part No.	Type
Inscription label holder				
	Holder for an inscription label and covering the mounting screw and manual override	10 pieces	**570818**	**ASLR-D-L1**
Inscription label holder for valve terminal				
	For 4 valve positions	Size 10	**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, size 10		**573461**	**ASCF-H-L1-10-16V**
	For 20 valve positions, size 10		**573462**	**ASCF-H-L1-10-20V**
	For 24 valve positions, size 10		**573463**	**ASCF-H-L1-10-24V**
	For 4 valve positions, size 14	Size 14	**573511**	**ASCF-H-L1-14-4V**
	For 5 valve positions, size 14		**573512**	**ASCF-H-L1-14-5V**
	For 6 valve positions, size 14		**573513**	**ASCF-H-L1-14-6V**
	For 7 valve positions, size 14		**573514**	**ASCF-H-L1-14-7V**
	For 8 valve positions, size 14		**573515**	**ASCF-H-L1-14-8V**
	For 9 valve positions, size 14		**573516**	**ASCF-H-L1-14-9V**
	For 10 valve positions, size 14		**573518**	**ASCF-H-L1-14-10V**
	For 12 valve positions, size 14		**573519**	**ASCF-H-L1-14-12V**
	For 16 valve positions, size 14		**573520**	**ASCF-H-L1-14-16V**
	For 20 valve positions, size 14		**573521**	**ASCF-H-L1-14-20V**
	For 24 valve positions, size 14		**573522**	**ASCF-H-L1-14-24V**