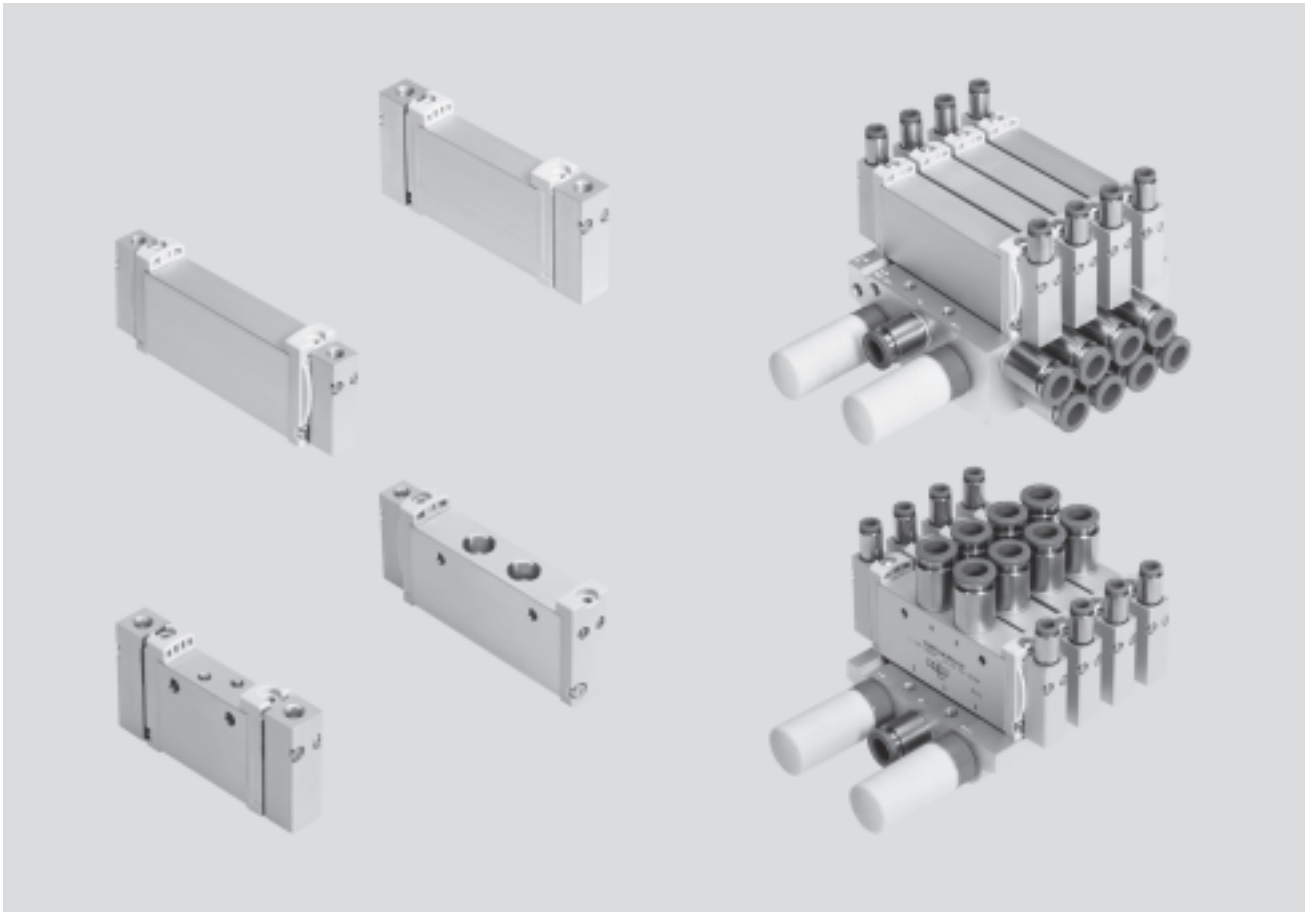
Pneumatic valves VUWG

FESTO

Pneumatic valves VUWG

Key features



Innovative

- Various connection sizes (M3, M5, M7, G1⁄8, G1⁄4)
- Maximum pressure 10 bar
- 2x3/2-way valve in one valve housing

Versatile

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

Reliable

- Sturdy and durable metal components
  - Valves
  - Manifold rails
- Convenient servicing thanks to valves that can be replaced quickly and easily

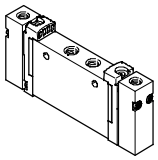
Easy to mount

- Secure mounting on wall or H-rail
- Easy mounting thanks to captive screws and seals

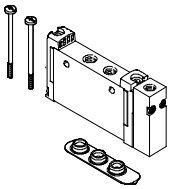
Pneumatic valves VUWG

Key features – Pneumatic components

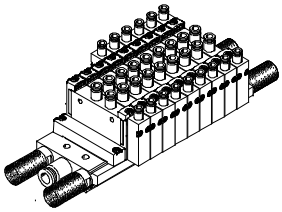
Individual valves and valve manifolds



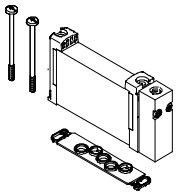
VUWG-L in-line valve as individual valve



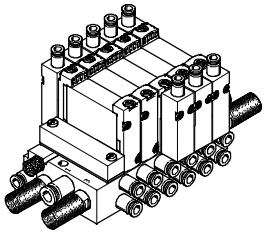
VUWG-S in-line valve for manifold assembly



VUWG-S valve manifold consisting of in-line valves

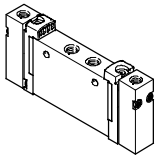


VUWG-B sub-base valve for manifold assembly



VUWG-B valve manifold consisting of sub-base valves

VUWG basic valves

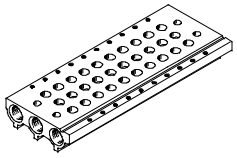


- Width 10, 14 and 18 mm
- 2x3/2-way, 5/2-way and 5/3-way valves
- In-line valves
- Sub-base valves

Pneumatic valves VUWG

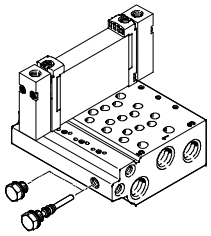
Key features – Pneumatic components

Manifold rail for in-line valves



- For in-line valves M3, M5, M7, G⅛ and G¼, width 10/14/18
- For 2x3/2-way, 5/2-way and 5/3-way valves
- 2 to 10 and 12, 14, 16 valve positions

Manifold rail for sub-base valves



- For sub-base valves 10A, 10, 14 and 18, width 10/14/18
- Manifold rail with M3, M5/M7, G⅛ and G¼ 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 (for internal pilot air) and long (for external pilot air) blanking plug are included with the manifold rail for this purpose.

Note

Duct 84 must not be sealed by a blanking plug when connecting a sub-base valve.

Blanking plate for vacant position

- For covering unused valve positions

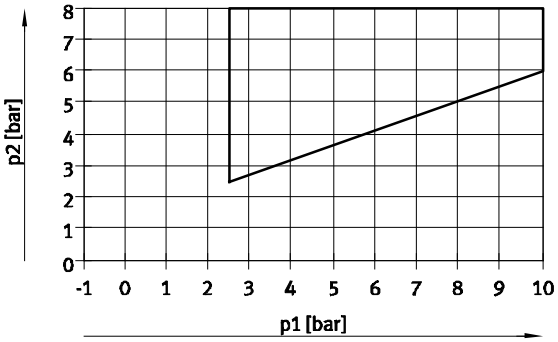
Supply plate

- For additional air supply and exhaust via a valve position

Separator for pressure zones

- For creating multiple pressure zones in a valve manifold

Pilot pressure p2 as a function of operating pressure p1



This graph applies to the 2x3/2-way valves and 5/2-way single pilot valves with air spring:

- T32CA, T32UA, T32HA
- M52a, M52r

Note

The compressed air for the air springs is supplied from port 1 (operating pressure).
To ensure reliable valve switching, the minimum pressure as per the graph must always be adhered to for the pilot pressure.

Creating pressure zones and separating exhaust air

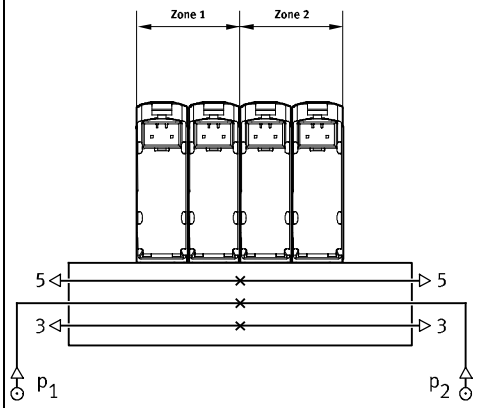
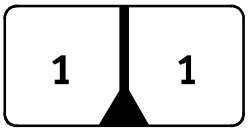
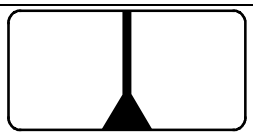
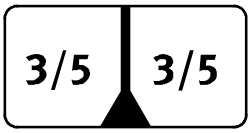
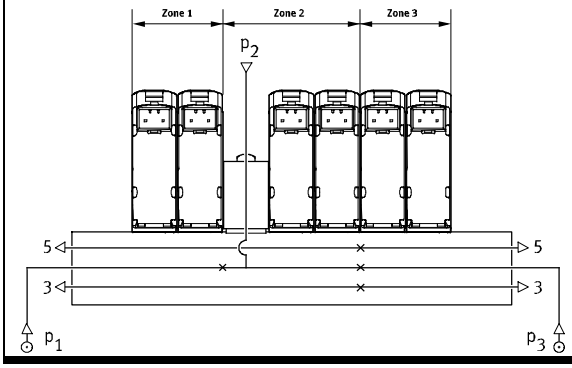
Compressed air is supplied and exhausted via the manifold rail and the supply plates.
The position of the supply plates and duct separations can be freely selected with the VUWG.

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

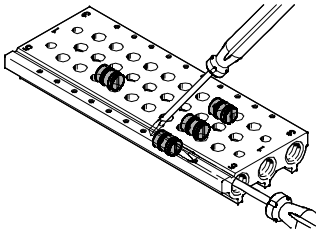
Pressure zone separation can be used for the following ducts:
- Duct 1
- Duct 3
- Duct 5

Note
- Use separators if the exhaust air pressures are high
- Use at least one supply plate/ supply for each pressure zone

Duct separation

	Description	Symbol
	The pressure zones can be freely configured with the VUWG. 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 VUWG 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 mounted from only one side using a slotted screwdriver, several pressure zones can be created in one profile.

Operation with different pressures

Vacuum operation

Note the following with vacuum operation:

- M52 in-line valves with pneumatic spring and pneumatic/mechanical spring reset (vacuum only at 3/5)
- T32 valves with pneumatic spring reset (vacuum only at 3/5)

If external pilot air via duct 14 is used, M52 sub-base valves (B) can be used without restriction.

The remaining valve types can be used without restriction for vacuum.

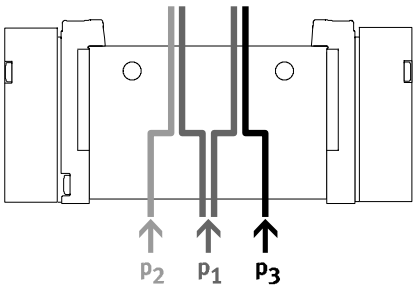
Note

Pressure must be present at port 1.

Reverse operation

The 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)



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

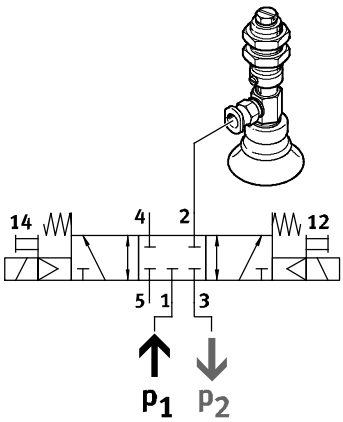
Note

- 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 ducts 3 and 5 both with external and internal pilot air.

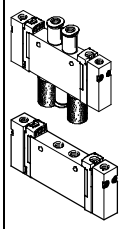
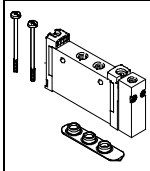
Vacuum, ejector pulse and normal position

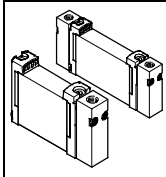


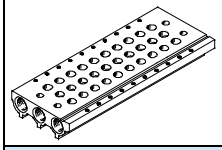
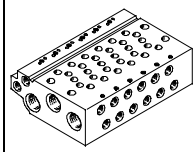
Vacuum, ejector pulse and normal position with internal pilot air can be achieved by connecting vacuum at duct 3 and pressure for the ejector pulse at duct 1.

Pneumatic valves VUWG

Product range overview

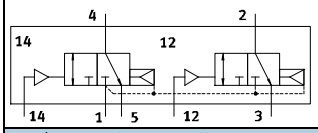
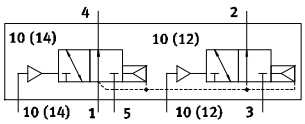
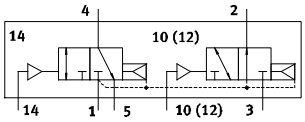
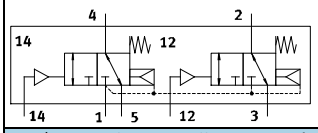
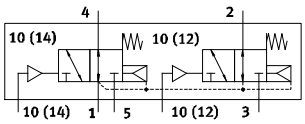
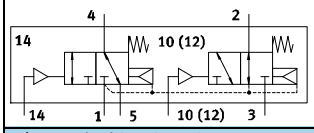
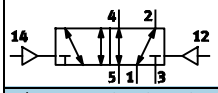
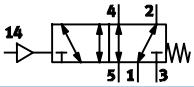
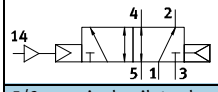
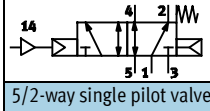
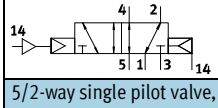
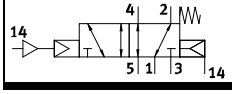
Design	Working port	Type code	Functions and flow rate [l/min]												➔ Page/ Internet
			T32C	T32U	T32H	T32C/M	T32U/M	T32H/M	M52	M52/M	B52	P53C	P53U	P53E	
In-line valve as individual valve, VUWG-L															
	M3	10A	–	–	–	–	–	–	■ 100	■ 80	■ 100	■ 90	■ 90	■ 90	12
	M5	10	■ 150	■ 150	■ 150	■ 135	■ 125	■ 125	■ 220	■ 190	■ 220	■ 210	■ 210	■ 210	17
	M7	10	■ 190	■ 190	■ 190	■ 150	■ 140	■ 140	■ 380	■ 320	■ 380	■ 320	■ 320	■ 320	17
	G1⁄8	14	■ 650	■ 600	■ 650	■ 550	■ 500	■ 500	■ 780	■ 780	■ 780	■ 650	■ 600	■ 600	24
	G1⁄4	18	■ 1,000	■ 1,000	■ 1,000	■ 1,000	■ 1,000	■ 1,000	■ 1,300	■ 1,300	■ 1,300	■ 1,200	■ 1,200	■ 1,200	29
In-line valve for manifold assembly, VUWG-S															
	M3	10A	–	–	–	–	–	–	■ 100	■ 80	■ 100	■ 90	■ 90	■ 90	15
	M5	10	■ 150	■ 150	■ 150	■ 135	■ 125	■ 125	■ 220	■ 190	■ 220	■ 210	■ 210	■ 210	22
	M7	10	■ 170	■ 170	■ 170	■ 140	■ 130	■ 130	■ 340	■ 290	■ 340	■ 300	■ 300	■ 300	22
	G1⁄8	14	■ 620	■ 580	■ 580	■ 520	■ 480	■ 480	■ 730	■ 730	■ 730	■ 620	■ 580	■ 580	47
	G1⁄4	18	■ 1,000	■ 1,000	■ 1,000	■ 1,000	■ 1,000	■ 1,000	■ 1,300	■ 1,300	■ 1,300	■ 1,200	■ 1,200	■ 1,200	32

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, VUWG-B															
	–	10O	–	–	–	–	–	–	■ 100	■ 80	■ 100	■ 90	■ 90	■ 90	34
	–	10	■ 150	■ 150	■ 150	■ 130	■ 120	■ 120	■ 210	■ 180	■ 210	■ 200	■ 200	■ 200	39
	–	10	■ 160	■ 160	■ 160	■ 140	■ 130	■ 130	■ 270	■ 230	■ 270	■ 250	■ 250	■ 250	39
	–	14	■ 540	■ 510	■ 540	■ 430	■ 410	■ 410	■ 580	■ 580	■ 580	■ 540	■ 510	■ 510	44
	–	18	■ 900	■ 900	■ 900	■ 900	■ 900	■ 900	■ 1,000	■ 1,000	■ 1,000	■ 950	■ 950	■ 950	49

Design	Working port	Type code	Description	➔ Page/ Internet
Manifold rail VABM- … -S- … , for in-line valves (manifold assembly)				
	–	–	Valve size M3, M5, M7, G1⁄8, G1⁄4	vabm
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	

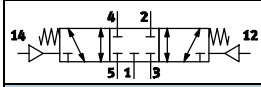
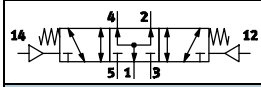
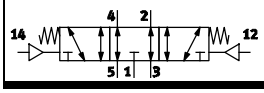
Pneumatic valves VUWG

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	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	–	■	■	■
5/2-way double pilot valve							
	B52	External pilot air supply	J	■	■	■	■
5/2-way single pilot valve, mechanical spring							
	M52-M	External pilot air supply	A	■	■	■	■
5/2-way single pilot valve, pneumatic spring							
	M52-A	In-line valve, external pilot air supply	M	–	–	■	–
5/2-way single pilot valve, pneumatic/mechanical spring							
	M52-R	In-line valve, external pilot air supply	P	■	■	–	■
5/2-way single pilot valve, pneumatic spring							
	M52-A	Sub-base valve, external pilot air supply	M	–	–	■	–
5/2-way single pilot valve, pneumatic/mechanical spring							
	M52-R	Sub-base valve, external pilot air supply	P	■	■	–	■

Pneumatic valves VUWG

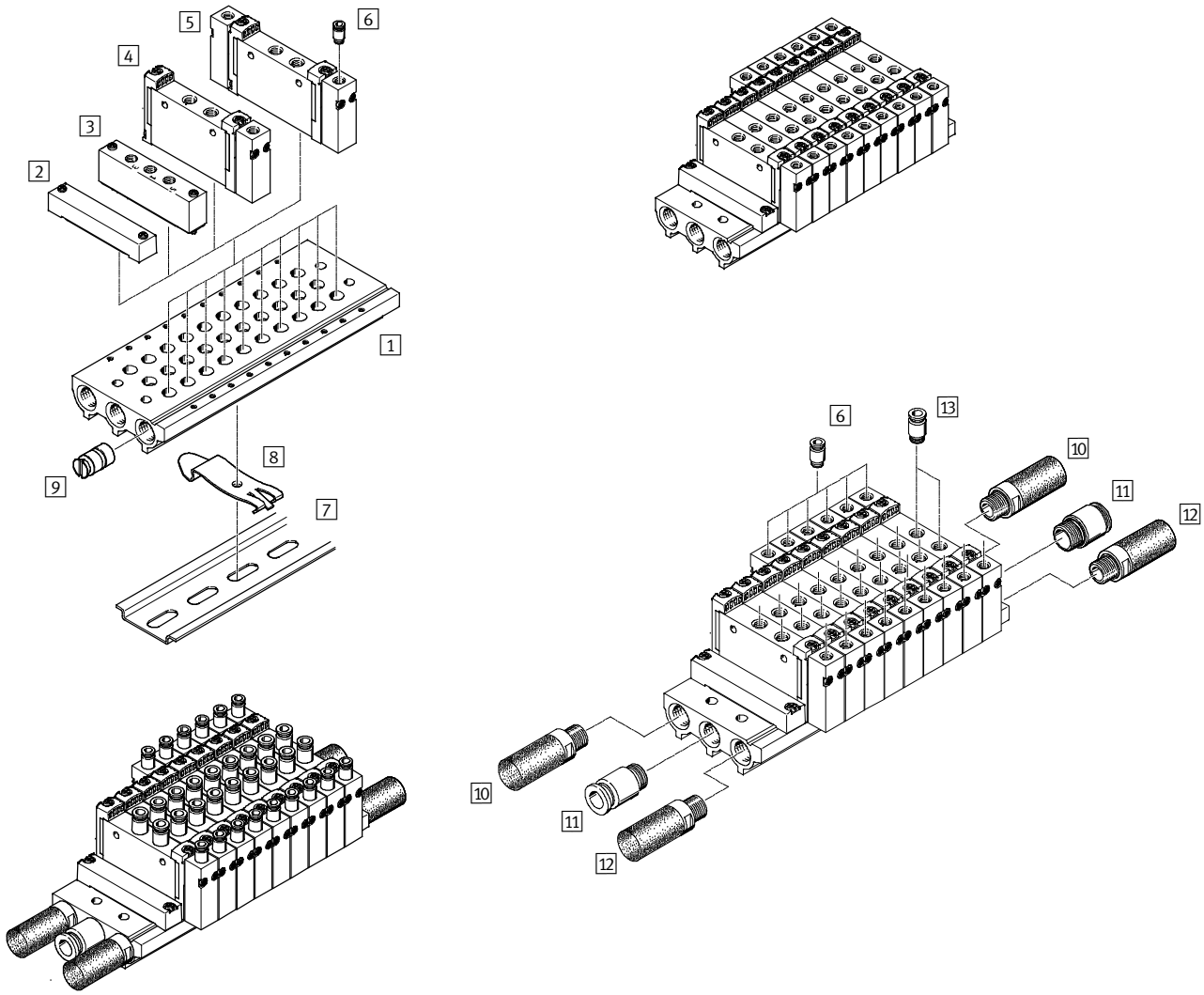
Overview of valve functions

Valve	Valve type code	Description	Valve terminal/ position function order code	Size			
				M3	M5/M7	G1/8	G1/4
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	■	■	■	■

Pneumatic valves VUWG

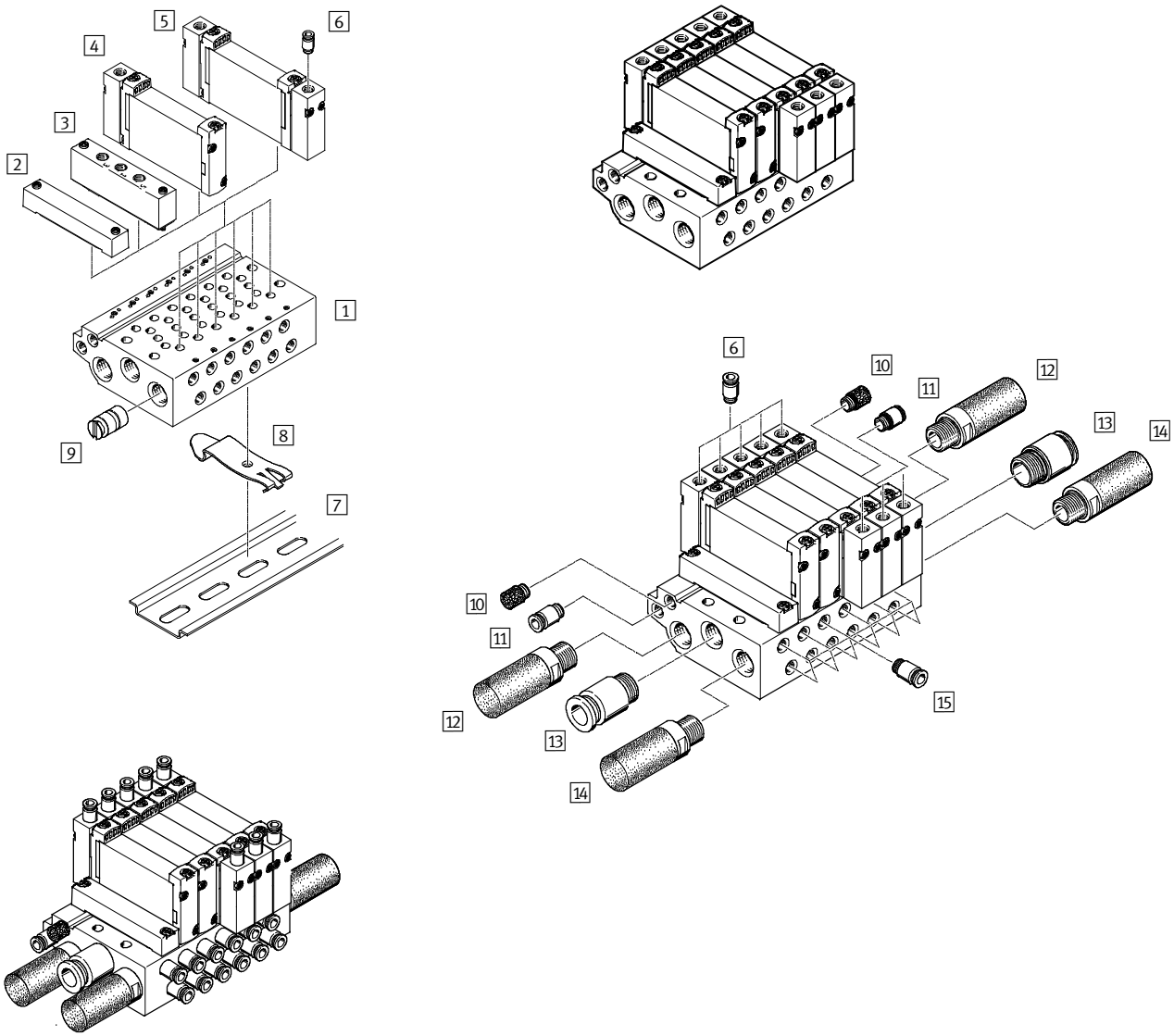
Sample system overview – VUWG-L10 and VUWG-S10, in-line valves M5/M7

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	23
2 Blanking plate	VABB-L1-10-S	For covering an unused valve position	23
3 Supply plate	VABF-L1-10-P3A4	For air supply port 1 and ports 3 and 5	23
4 Pneumatic valve	VUWG	Single pilot pneumatic valve	17
5 Pneumatic valve	VUWG	Double pilot pneumatic valve	17
6 Push-in fitting	QS	For adapter plate for port 12 or 14	54
7 H-rail	NRH-35-2000	For mounting the valve manifold	54
8 H-rail mounting	VAME-T-M4	2 pieces for fitting the valve manifold on an H-rail	54
9 Separator	VABD-8-B	For creating pressure zones	54
10 Silencer	U	For port 3	54
11 Push-in fitting	QS	For port 1	54
12 Silencer	U	For port 5	54
13 Push-in fitting	QS	For ports 2 and 4	54

Manifold assembly



Manifold assembly and accessories				
		Type	Brief description	➔ Page/Internet
1	Manifold rail	VABM-L1-10W-G18	For 2 to 10, 12, 14 and 16 valve positions	43
2	Blanking plate	VABB-L1-10-W	For covering an unused valve position	43
3	Supply plate	VABF-L1-10-P3A4-M5	For air supply port 1 and ports 3 and 5	43
4	Pneumatic valve	VUWG	Single pilot pneumatic valve	39
5	Pneumatic valve	VUWG	Double pilot pneumatic valve	39
6	Push-in fitting	QS	For adapter plate for port 12 or 14	54
7	H-rail	NRH-35-2000	For mounting the valve manifold	54
8	H-rail mounting	VAME-T-M4	2 pieces for fitting the valve manifold on an H-rail	54
9	Separator	VABD-6-B	For creating pressure zones	43
10	Silencer	U	For port 84	54
11	Push-in fitting	QS	For port 14	54
12	Silencer	U	For port 5	54
13	Push-in fitting	QS	For port 1	54
14	Silencer	U	For port 3	54
15	Push-in fitting	QS	For ports 2 and 4	54

Pneumatic valves VUWG-L10A, in-line valves M3

Technical data

Function
5/2-way, single pilot
5/2-way, double pilot
5/3-way, closed, exhausted, pressurised

Width 10 mm

Flow rate
90 ... 100 l/min

General technical data								
Valve function			M52-R	B52	M52-M	P53		
Normal position			–	–	–	C[1]	U[2]	E[3]
Pneumatic spring reset method			Yes[5]	–	No	No		
Mechanical spring reset method			Yes[5]	–	Yes	Yes		
Vacuum operation at port 1			No	Yes	Yes	Yes		
Design			Piston spool valve					
Sealing principle			Soft					
Actuation type			Pneumatic					
Type of control			Direct					
Pilot air supply			External					
Exhaust function			With flow control					
Type of mounting			Optionally via through-holes[7] or on manifold rail					
Mounting position			Any					
Standard nominal flow rate		[l/min]	100		80	90		
Switching time on/off		[ms]	5/11	–	5/16	7/19		
Changeover time		[ms]	–	5	–	9		
Width		[mm]	10					
Port	1, 2, 3, 4, 5		M3					
	12, 14		M5					
Product weight		[g]	37	40	34	40		
Corrosion resistance class		CRC	2[6]					

1) C = Normally closed
2) U = Normally open
3) E= Normally exhausted
4) H=2x3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
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.
7) 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.

Pneumatic valves VUWG-L10A, in-line valves M3

Technical data

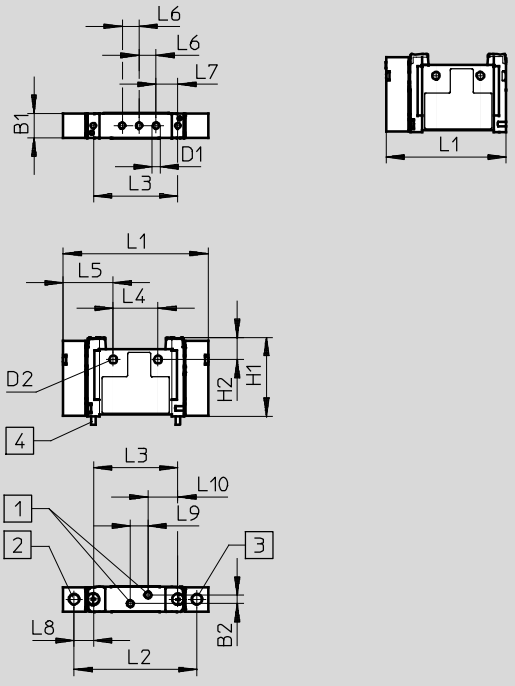
Operating and environmental conditions					
Valve function		M52-R[4]	B52	M52-M[3]	P53
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]			
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)			
Operating pressure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

1) Note operating pressure/pilot pressure graph ➔page 4
2) Pneumatic spring
3) Mechanical spring
4) Mixed, pneumatic/mechanical spring

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

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

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



1 Ports 2, 4: M3
2 Port 14: M5
3 Port 12: M5
4 M2.5 mounting screw

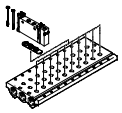
Type	B1	B2	D1	D2	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
VUWG-L-10A-...	10.3	3.6	M3	3.2	32.5	9.1	59.9	50.7	34.9	18.5	20.7	7	9	7.9	7.3	12.4
VUWG-L-10A-M52...							49.9									

Pneumatic valves VUWG-L10A and VUWG-S10A, in-line valves M3

Order code

VUWG	–		10A	–		–		–		–	

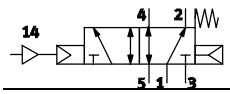
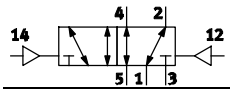
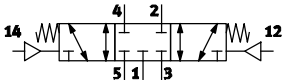
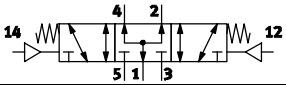
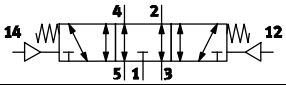
Valve design

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**

Exhausting with VUWG-L

QN	Via fitting[1]
U	Silencer
–	M3

Pneumatic connection		Flow rate [l/min][2]
M3	Thread M3	100
Q3	Push-in connector 3 mm/M3	80
Q4	Push-in connector 4 mm/M3	100
T18	Push-in connector 1/8"	80
T532	Push-in connector 5/32"	100

Reset method

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

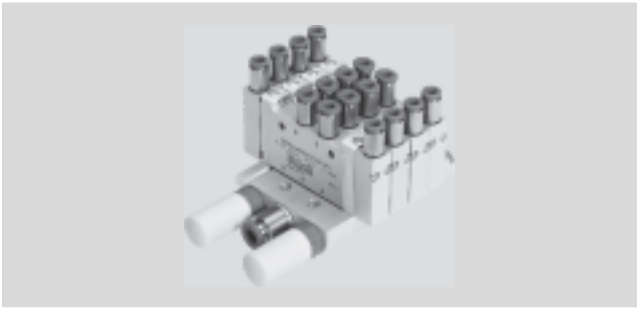
1) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5 (only possible with Q3)

2) Flow rate applies to 5/2-way individual valve

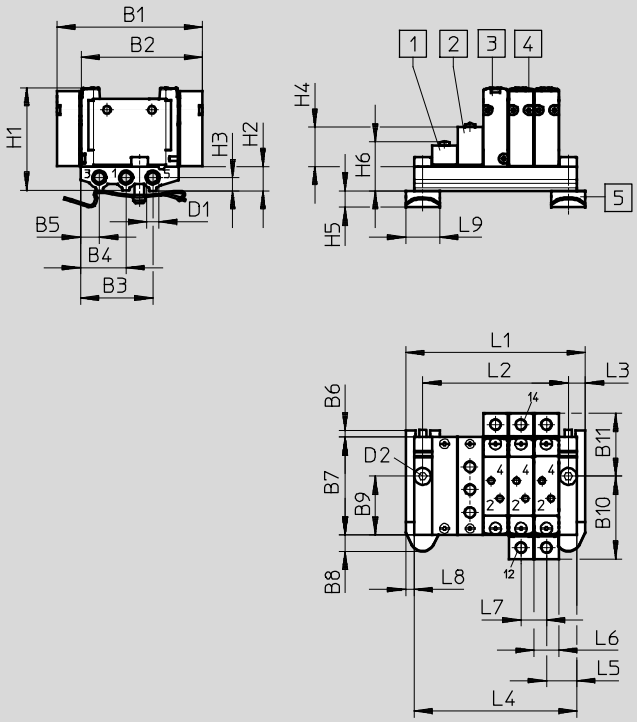
Pneumatic valves VUWG-S10A, in-line valves M3

Manifold assembly

In-line valves for manifold assembly



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



1 Blanking plate VABB-L1-10A-S
2 Supply plate VABF-L1-10A-P3A4-M5
3 Single pilot pneumatic valve
4 Double pilot pneumatic valve
5 H-rail mounting (two M4x15 screws to DIN 912 are required for mounting)

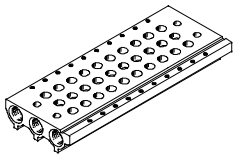
Type												
VABM-L1-10AS-M5	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	D1
	59.9	49.9	29.7	18.7	7.7	2.95	40.3	6.75	24.2	34	25.9	M5
	D2	H1	H2	H3	H4	H5	H6	L3	L5	L6	L7	L8
	ø 4.5	42.5	10	5.5	16.2	6.8	20.3	7	12.5	10.3	10.5	3.5
	L9											
	14											

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

Pneumatic valves VUWG-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	
VUWG	**L1**

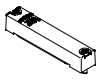
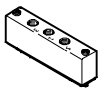
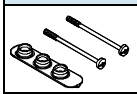
Valve width	
10 mm	**10A**

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

Ordering data – Accessories

			Type
Blanking plate			Technical data ➔ Internet: vabb
	For manifold rail for M3 in-line valves	Incl. screws and seal	**VABB-L1-10A**
Separator			Technical data ➔ Internet: vabd
	For manifold rail for M3 in-line valves	Separator for pressure zones	**VABD-4.2-B**
Supply plate			Technical data ➔ Internet: vabf
	For manifold rail for M3 in-line valves	Incl. screws and seal	**VABF-L1-10A-P3A4-M5**
Seals for in-line valves			Technical data ➔ Internet: vabd
	M3	10 seals and 20 screws	**VABD-L1-10AX-S-M3**

Pneumatic valves VUWG-L10 and VUWG-S10, in-line valves M5

Technical data

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

Width 10 mm

Flow rate
150 ... 220 l/min

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]
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			Yes				Yes				
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Pneumatic											
Type of control			Direct											
Pilot air supply			External											
Exhaust function			With flow control											
Type of mounting			Optionally via through-holes[7] or on manifold rail											
Mounting position			Any											
Standard nominal flow rate		[l/min]	150			135	125		220		190	210		
Switching time on/off		[ms]	4/9			6/7			6/12	–	7/16	8/25		
Changeover time		[ms]	–							5	–	11		
Width		[mm]	10											
Port	1, 2, 3, 4, 5		M5											
	12, 14		M5											
Product weight		[g]	48			51			45	48	41	48		
Corrosion resistance class		CRC	2[6]											

1) C = Normally closed
2) U = Normally open
3) E = Normally exhausted
4) H=2x3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
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.
7) 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.

Pneumatic valves VUWG-L10 and VUWG-S10, in-line valves M5

Technical data

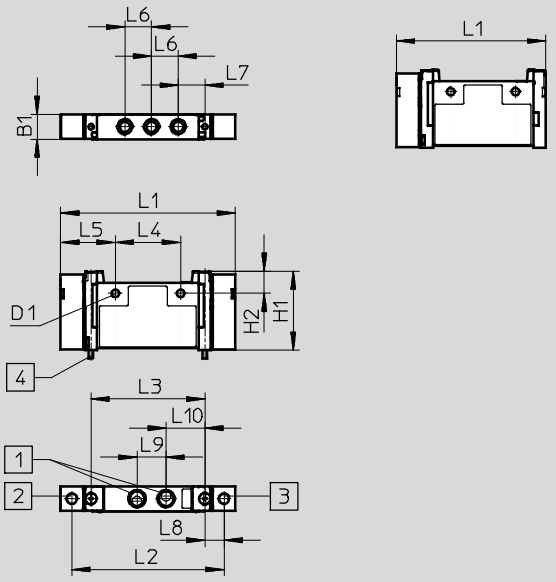
Operating and environmental conditions							
Valve function		T32-A[2]	T32-M[3]	M52-R[4]	B52	M52-M[3]	P53
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)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

1) Note operating pressure/pilot pressure graph ➔page 4
2) Pneumatic spring
3) Mechanical spring
4) Mixed, pneumatic/mechanical spring

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 Ports 2, 4: M5
2 Port 14: M5
3 Port 12: M5
4 M2.5 mounting screw

Type	B1	D1	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
VUWG-L-10-...	10.2	3.2	32.5	9.1	72	62.8	47	27	22.5	11	11	7.9	12	16
VUWG-L-10-M52-...					62									

Pneumatic valves VUWG-L10 and VUWG-S10, in-line valves M7

Technical data

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

Width 10 mm

Flow rate
190 ... 380 l/min

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]
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			Yes			No	Yes				
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Pneumatic											
Type of control			Direct											
Pilot air supply			External											
Exhaust function			With flow control											
Type of mounting			Optionally via through-holes[7] or on manifold rail											
Mounting position			Any											
Standard nominal flow rate		[l/min]	190			150	140		380		320			
Switching time on/off		[ms]	4/9			6/7			6/12	–	7/16	8/25		
Changeover time		[ms]	–							5	–	11		
Width		[mm]	10											
Port	1, 2, 3, 4, 5		M7											
	12, 14		M5											
Product weight		[g]	48			51			45	48	41	48		
Corrosion resistance class		CRC	2[6]											

1) C = Normally closed
2) U = Normally open
3) E = Normally exhausted
4) H=2x3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
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.
7) 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.

Pneumatic valves VUWG-L10 and VUWG-S10, in-line valves M7

Technical data

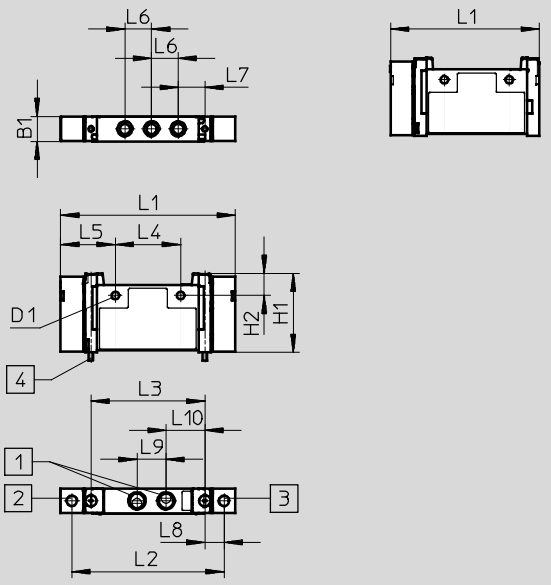
Operating and environmental conditions							
Valve function		T32-A[2]	T32-M[3]	M52-R[4]	B52	M52-M[3]	P53
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)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

1) Note operating pressure/pilot pressure graph ➔page 4
2) Pneumatic spring
3) Mechanical spring
4) Mixed, pneumatic/mechanical spring

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 Ports 2, 4: M7
2 Port 14: M5
3 Port 12: M5
4 M2.5 mounting screw

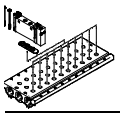
Type	B1	D1	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
VUWG-L-10 -...-	10.2	3.2	32.5	9.1	72	62.8	47	27	22.5	11	11	7.9	12	16
VUWG-L-10-M52 ...					62									

Pneumatic valves VUWG-L10 and VUWG-S10, in-line valves M5/M7

Order code

VUWG	–		10	–		–		–		–	

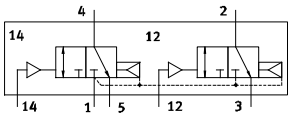
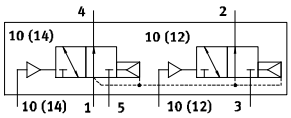
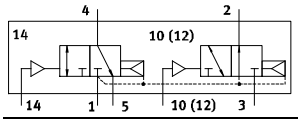
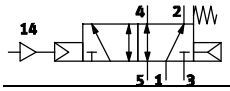
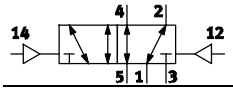
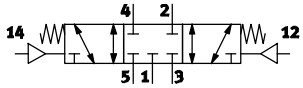
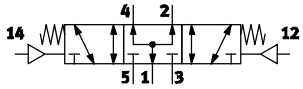
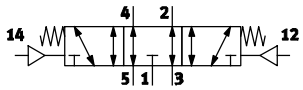
Valve design

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

Width

10 mm	**10**

Valve functions

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

Exhausting with VUWG-L

QN	QS if QS[1]
U	Silencer
–	M5 and M7

Pneumatic connection		Flow rate [l/min][2]
M5	Thread M5	220
Q3	Push-in connector 3 mm/M5	100
Q4	Push-in connector 4 mm/M5	200
Q6	Push-in connector 6 mm/M5	220
T14	Push-in connector ¼"	220
T18	Push-in connector ⅛"	100
T316	Push-in connector 3/16	200
T532	Push-in connector 5/32	200
M7	Thread M7	380
Q4H	Push-in connector 4 mm/M7	220
Q6H	Push-in connector 6 mm/M7	330
T14H	Push-in connector ¼", M7	330
T316H	Push-in connector 3/16, M7	200

Reset method

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

1) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5

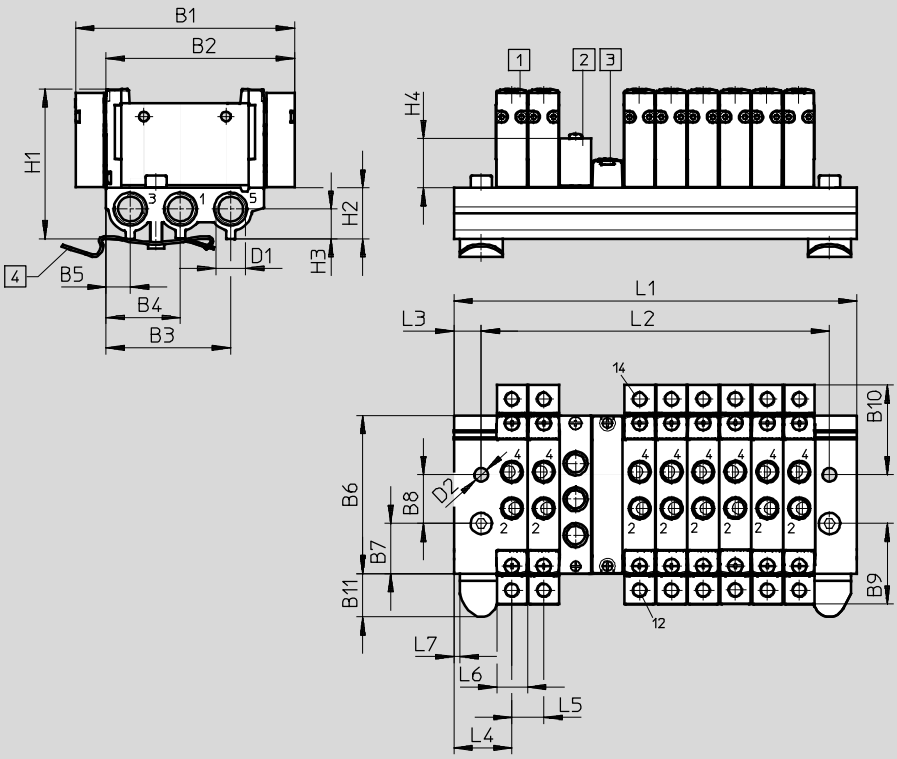
2) Flow rate applies to 5/2-way individual valve

Pneumatic valves VUWG-S10, in-line valves M5/M7

Manifold assembly

In-line valves for manifold assembly

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



1 Pneumatic valve
2 Supply plate M5 or M7 for 1, 3, 5
3 Blanking plate VABB-L1-10-S
4 H-rail mounting (two M4x20 screws to DIN 912 are required)

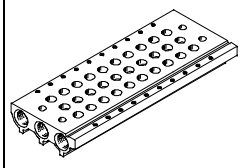
Type											
VABM-L1-10S-G18	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
	72	62	41	24.5	8	52	16.5	16	26.5	29.5	14.45
	D1	D2	H1	H2	H3	H4	H4	L3	L4	L5	L6
	G⅛	4.5	49.3	16.8	7	16.2	16.2	9	19	10.5	10.3
	L7										
	2										

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

Pneumatic valves VUWG-S10, in-line valves M5/M7

FESTO

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
	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**

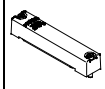
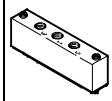
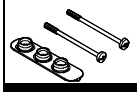
Valve series	
VUWG	**L1**

Valve width	
10 mm	**10**

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

Ports 1, 3, 5	
G18	G1/8

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

Ordering data – Accessories			
			Type
Blanking plate			Technical data ➔ Internet: vabb
	For manifold rail for M5/M7 in-line valves	Incl. screws and seal	**VABB-L1-10-S**
Separator			Technical data ➔ Internet: vabd
	For manifold rail for M5/M7 in-line valves	Separator for pressure zones	**VABD-8-B**
Supply plate			Technical data ➔ Internet: vabf
	For manifold rail for M5 in-line valves	Incl. screws and seal	**VABF-L1-10-P3A4-M5**
	For manifold rail for M7 in-line valves		**VABF-L1-10-P3A4-M7**
Seals for in-line valves			Technical data ➔ Internet: vabd
	M5	10 seals and 20 screws	**VABD-L1-10X-S-M5**
	M7		**VABD-L1-10X-S-M7**

Pneumatic valves VUWG-L14 and VUWG-S14, in-line valves G1⁄8

Technical data

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

Width 14 mm

Flow rate
580 ... 780 l/min

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]
Pneumatic spring reset method			Yes			No			Yes	–	No	No		
Mechanical spring reset method			No			Yes			No	–	Yes	Yes		
Vacuum operation at port 1			No			Yes			No	Yes				
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Pneumatic											
Type of control			Direct											
Pilot air supply			External											
Exhaust function			With flow control											
Type of mounting			Optionally via through-holes[7] or on manifold rail											
Mounting position			Any											
Standard nominal flow rate		[l/min]	650	600	650	550	500		780			650	600	
Switching time on/off		[ms]	6/19			9/13			12/22	–	12/32	8/30		
Changeover time		[ms]	–							6		16		
Width		[mm]	14											
Port	1, 2, 3, 4, 5		G1⁄8											
	14		M5											
Product weight		[g]	81			77			75	81	67	81		
Corrosion resistance class		CRC	2[6]											

1) C = Normally closed
2) U = Normally open
3) E = Normally exhausted
4) H=2x3/2-way valve in one housing with 1x normally closed and 1x normally open
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.
7) 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.

Pneumatic valves VUWG-L14 and VUWG-S14, in-line valves G1⁄8

Technical data

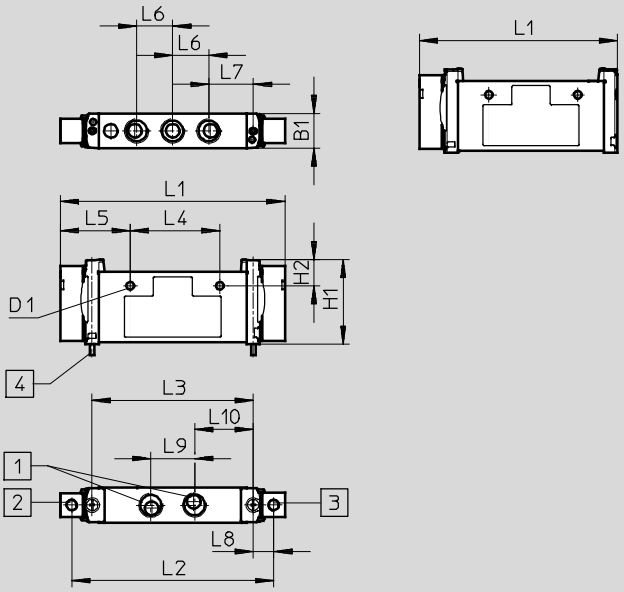
Operating and environmental conditions							
Valve function		T32-A[2]	T32-M[3]	M52-A[2]	B52	M52-M[3]	P53
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)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

1) Note operating pressure/pilot pressure graph ➔page 4
2) Pneumatic spring
3) Mechanical spring
4) Mixed, pneumatic/mechanical spring

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 Ports 2, 4: G1⁄8
2 Port 14: M5
3 Port 12: M5
4 M2.5 mounting screw

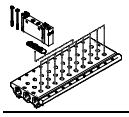
Type	B1	D1	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
VUWG-L-14-...	14.4	3.2	34.8	10.8	92.6	83.4	66.5	37	28.8	14.9	18.35	8.45	18	24.25
VUWG-L14-M52 ...					82.25									

Pneumatic valves VUWG-L14 and VUWG-S14, in-line valves G1⁄8

Order code

VUWG	–		14	–		–		–	

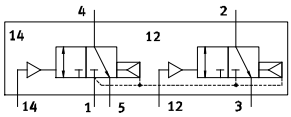
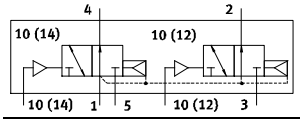
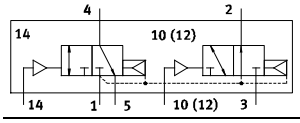
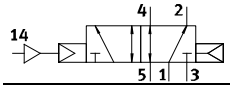
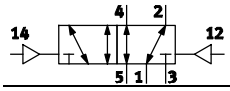
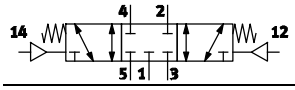
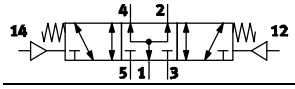
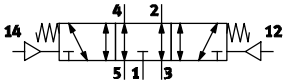
Valve design

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

Width

14 mm	**14**

Valve functions

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

						–		–	

Exhausting with VUWG-L

QN	QS if QS[1]
U	Silencer
–	G1⁄8

Pneumatic connection		Flow rate [l/min][2]
G18	Thread G1⁄8	780
Q4	Push-in connector 4 mm/G1⁄8	200
Q6	Push-in connector 6 mm/G1⁄8	400
Q8	Push-in connector 8 mm/G1⁄8	700
T14	Push-in connector ¼"	400
T516	Push-in connector 5⁄16"	700

Reset method

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

1) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5

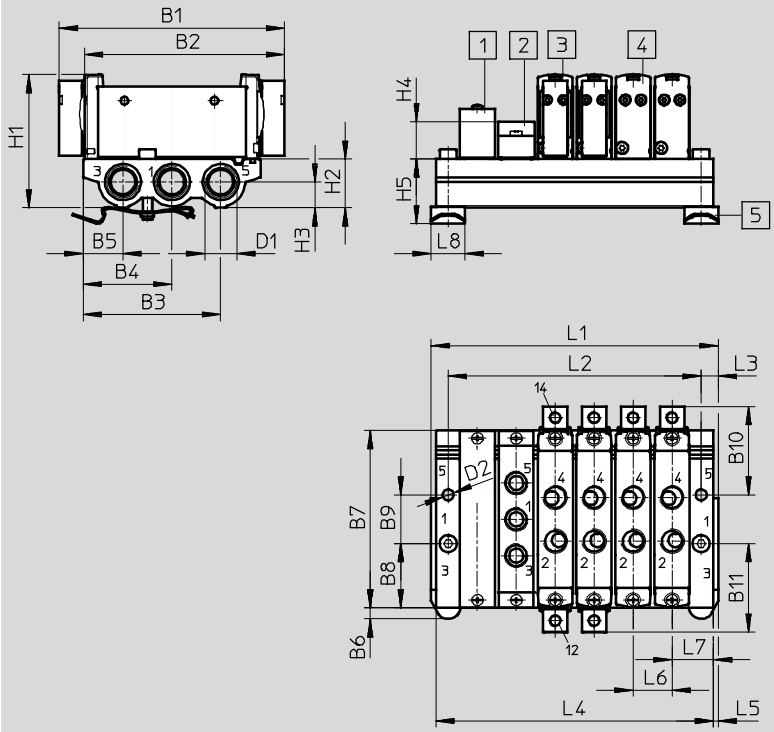
2) Flow rate applies to 5/2-way individual valve

Pneumatic valves VUWG-S14, in-line valves G1⁄8

Manifold assembly

In-line valves for manifold assembly

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



1 Blanking plate VABB-L1-14

2 Supply plate VABF-L1-14-P3A4-G18

3 Double pilot pneumatic valve

4 Single pilot pneumatic valve

5 H-rail mounting (two M4x25 screws to DIN 912 are required for mounting)

Type												
VABM-L1-14S-G14	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	D1
	92.6	82.3	56.6	36.5	16.4	4.5	72.9	26.45	20	36.3	36.3	G¼
	D2	H1	H2	H3	H4	H5	L3	L5	L6[1)]	L7		
	Ø 4.5	54.8	20	10.6	15.4	26.4	7	2	16	17		

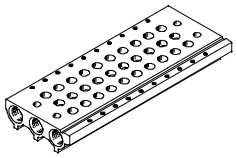
Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1 [mm]	54	70	86	98	118	134	150	166	182	214	246	278
L2 [mm]	40	56	72	88	104	120	136	152	168	200	232	264
L4 [mm]	50	66	82	98	114	130	146	162	178	210	242	274

1) Grid dimension

Pneumatic valves VUWG-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
	G1⁄4	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
VUWG **L1**

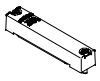
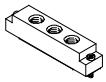
Valve width
14 mm **14**

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

Ports 1, 3, 5
G14 G1⁄4

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

Ordering data – Accessories

			Type
Blanking plate			Technical data ➔ Internet: vabb
	For manifold rail for M5/M7 in-line valves	Incl. screws and seal	**VABB-L1-14**
Separator			Technical data ➔ Internet: vabd
	For manifold rail for G1⁄8 in-line valves	Separator for pressure zones	**VABD-10-B**
Supply plate			Technical data ➔ Internet: vabf
	For manifold rail for G1⁄8 in-line valves	Incl. screws and seal	**VABF-L1-14-P3A4-G18**
Seals for in-line valves			Technical data ➔ Internet: vabd
	G1⁄8	10 seals and 20 screws	**VABD-L1-14X-S-G18**

Pneumatic valves VUWG-L18 and VUWG-S18, in-line valves G¼

FESTO

Technical data

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

Width 18 mm

Flow rate
1,000 ... 1,300 l/min

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]
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			Yes			No	Yes				
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Pneumatic											
Type of control			Direct											
Pilot air supply			External											
Exhaust function			With flow control											
Type of mounting			Optionally via through-holes[7] or on manifold rail											
Mounting position			Any											
Standard nominal flow rate		[l/min]	1,000						1,300			1,200		
Switching time on/off		[ms]	12/25			14/22			14/30	–	12/45	12/45		
Changeover time		[ms]	–							10	–	25		
Width		[mm]	18											
Port	1, 2, 3, 4, 5		G¼											
	12/14		M5											
Product weight		[g]	160						152	160	152			
Corrosion resistance class		CRC	2[6]											

1) C = Normally closed
2) U = Normally open
3) E = Normally exhausted
4) H=2x3/2-way valve in one housing with 1x normally closed and 1x normally open
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.
7) 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.

Pneumatic valves VUWG-L18 and VUWG-S18, in-line valves G¼

Technical data

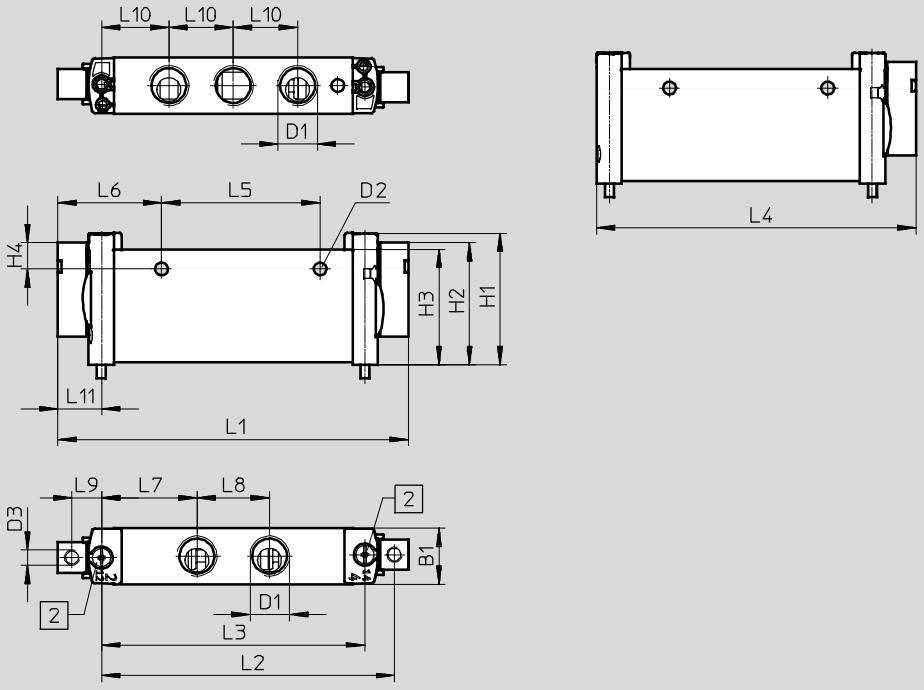
Operating and environmental conditions							
Valve function		T32-A[2]	T32-M[3]	M52-R[4]	B52	M52-M[3]	P53
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)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

1) Note operating pressure/pilot pressure graph ➔page 4
2) Pneumatic spring
3) Mechanical spring
4) Mixed, pneumatic/mechanical spring

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



2 Mounting screw

Type	B1	D1	D2	D3	H1	H2	H3	H4	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11
VUWG-L-18-... G14	18.3	D¼	4.2	M5	43.1	40	37.8	6.4	115	96.1	86.4	105	52	34	31.3	23.8	9.7	21.1	14.3

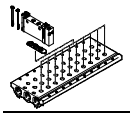
Pneumatic valves VUWG-L18 and VUWG-S18, in-line valves G¼

FESTO

Order code

VUWG	–		18	–		–		–		–	

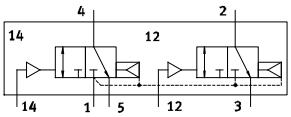
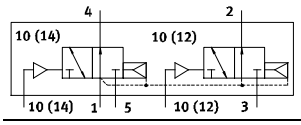
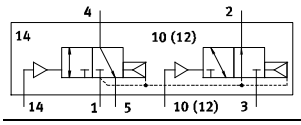
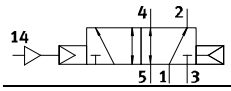
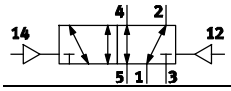
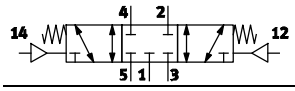
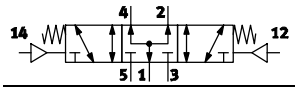
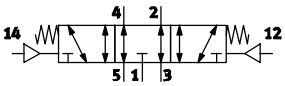
Valve design

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

Width

18 mm	**18**

Valve functions

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

	–		–	

Exhausting with VUWG-L

QN	QS if QS[1]
U	Silencer
–	G⅛

Pneumatic connection		Flow rate [l/min][2]
G14	Thread G¼	1,300
Q6	Push-in connector 6 mm	400
Q8	Push-in connector 8 mm	700
Q10	Push-in connector 10 mm	1,100
T14	Push-in connector ¼"	400
T38	Push-in connector ⅜"	1,200
T516	Push-in connector 5/16"	700

Reset method

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

1) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5

2) Flow rate applies to 5/2-way individual valve

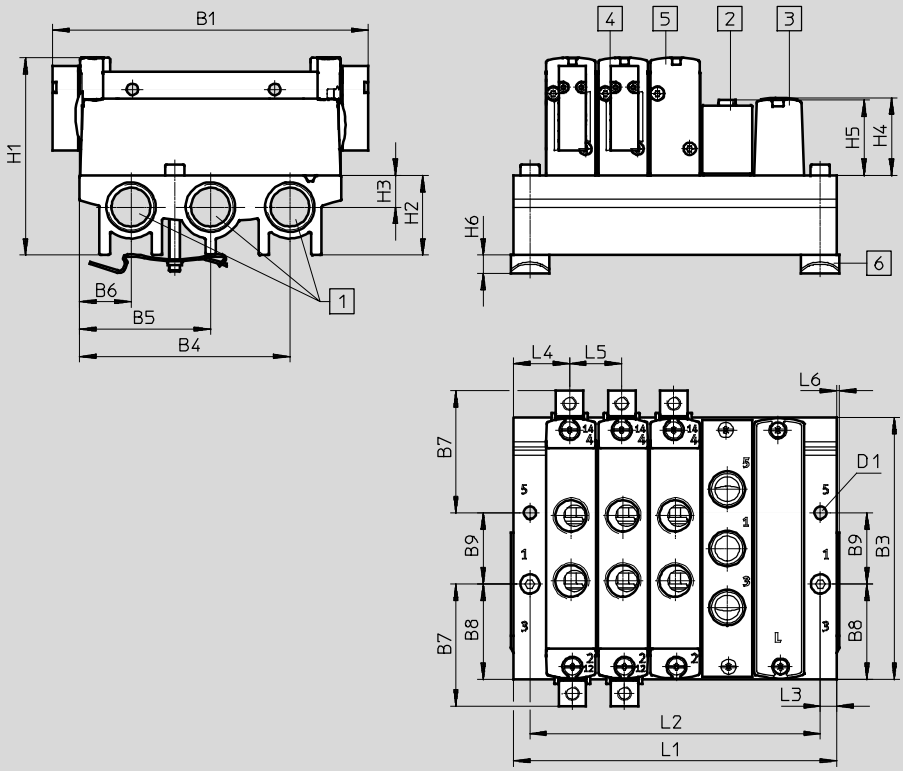
Pneumatic valves VUWG-S18, in-line valves G¼

Manifold assembly

In-line valves for manifold assembly

Dimensions

Download CAD data ➔ **www.festo.com**



1 Ports 1, 3 and 5: G⅜
2 Blanking plate
VABB-L1-18
3 Supply plate
VABF-L1-18-P3A4-G14
4 Double pilot pneumatic valve
5 Single pilot pneumatic valve
6 H-rail mounting (two M4x35 screws to DIN 912 are required)

Type											
VABM-L1-18S-G38	B1	B3	B4	B5	B6	B7	B8	B9	D1	H1	H2
	115	95.6	76.8	47.8	18.8	44.5	34.8	26	4.5	72.1	29
	H3	H4	H5	H6	L3	L4	L6				
	11.5	28.4	27.6	6.5	6	20.5	1				

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

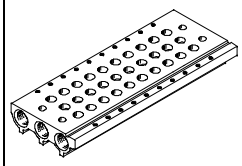
1) Grid dimension

Pneumatic valves VUWG-S18, in-line valves G1/4

FESTO

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
	G3/8	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	–	18	S	–	G38	–	

Manifold assembly parts
Manifold rail **VABM**

Valve series
VUWG **L1**

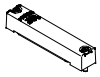
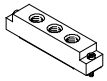
Valve width
18 mm **18**

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

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

Ports 1, 3, 5
G38 G3/8

Ordering data – Accessories

			Type
Blanking plate			Technical data ➔ Internet: vabb
	For manifold rail for M5/M7 in-line valves	Incl. screws and seal	**VABB-L1-18**
Separator			Technical data ➔ Internet: vabd
	For manifold rail for G1/8 in-line valves	Separator for pressure zones	**VABD-14-B**
Supply plate			Technical data ➔ Internet: vabf
	For manifold rail for G1/8 in-line valves	Incl. screws and seal	**VABF-L1-18-P3A4-G14**
Seals for in-line valves			Technical data ➔ Internet: vabd
	G1/8	10 seals and 20 screws	**VABD-L1-18X-S-G14**

Pneumatic valves VUWG-B10A, sub-base valves

Technical data

Function
5/2-way, single pilot
5/2-way, double pilot
5/3-way, closed, exhausted, pressurised

- Width 10 mm
- Flow rate 90 ... 100 l/min

General technical data								
Valve function			M52-R	B52	M52-M	P53		
Normal position			–	–	–	C[1]	U[2]	E[3]
Pneumatic spring reset method			Yes[5]	–	No	Yes		
Mechanical spring reset method			Yes[5]	–	Yes	No		
Vacuum operation at port 1			No	Yes		Yes		
Design			Piston spool valve					
Sealing principle			Soft					
Actuation type			Pneumatic					
Type of control			Direct					
Pilot air supply			External					
Exhaust function			With flow control					
Type of mounting			On manifold rail					
Mounting position			Any					
Standard nominal flow rate		[l/min]	100		80	90		
Switching time on/off		[ms]	5/11	–	5/16	7/19		
Changeover time		[ms]	–	5		9		
Width		[mm]	10					
Port	1, 3, 5		M5/M7					
	2, 4		M3					
	12, 14, 82/84		M5					
Product weight		[g]	37	40	34	40		
Corrosion resistance class		CRC	2[6]					

1) C = Normally closed
2) U = Normally open
3) E= Normally exhausted
5) Combined reset method
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.

Pneumatic valves VUWG-B10A, sub-base valves

Technical data

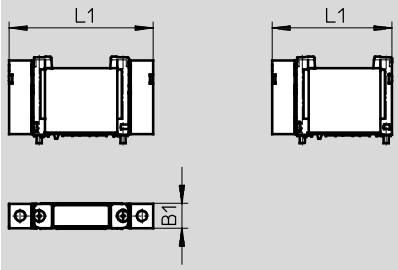
Operating and environmental conditions					
Valve function		M52-R[4]	B52	M52-M[3]	P53
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]			
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)			
Operating pressure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

1) Note operating pressure/pilot pressure graph ➔page 4
2) Pneumatic spring
3) Mechanical spring
4) Mixed, pneumatic/mechanical spring

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

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

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



Type	B1	L1
VUWG-B10A-...	10.3	59.9
VUWG-B10A-M52...		49.9

1) Only with external pilot air

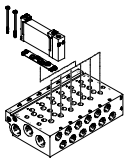
Pneumatic valves VUWG-B10A, sub-base valves

Order code

VUWG	–	B	10A	–		–		–	F

Valve design

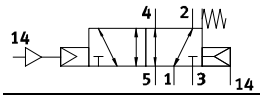
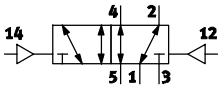
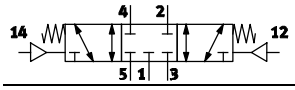
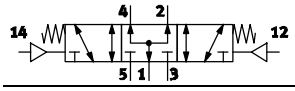
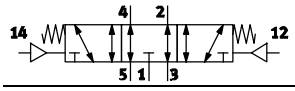
Sub-base, manifold valve incl. seal and screws	**B**



Width

10 mm	**10A**

Valve functions

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

Pneumatic connection

F	In the manifold rail

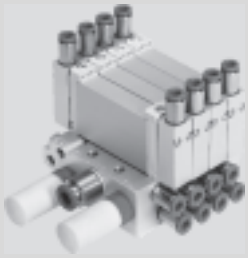
Reset method

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

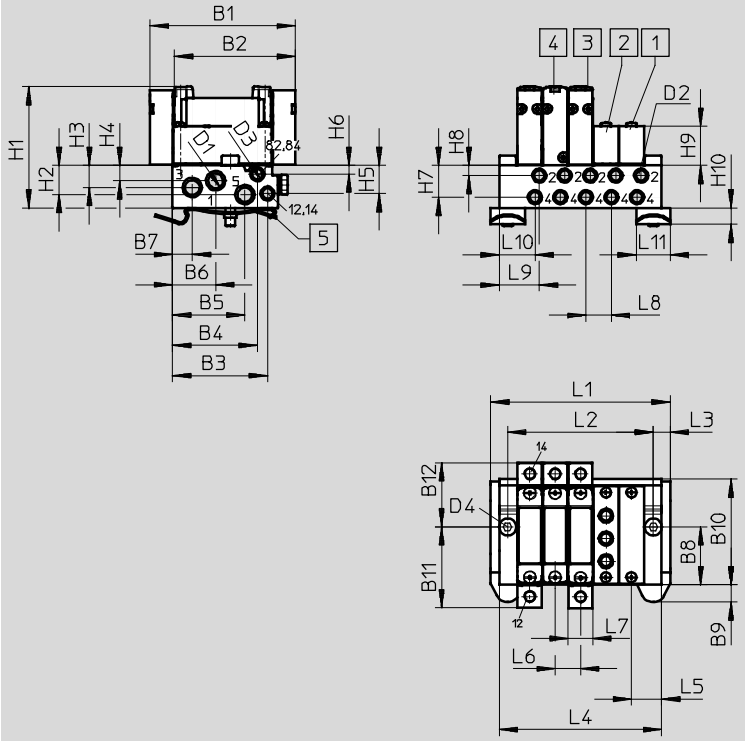
Pneumatic valves VUWG-B10A, sub-base valves

Manifold assembly

Sub-base valve for
manifold assembly
M5 connection



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



1 Blanking plate VABB-L1-10A
2 Supply plate VABF-L1-10A-P3A4-M5
3 Double pilot pneumatic valve
4 Single pilot pneumatic valve
5 H-rail mounting (two M4x25 screws to DIN 912 are required)

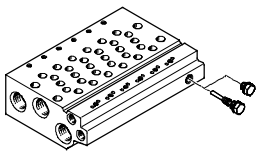
Type												
VABM-L1-10AW-M7	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
	59.9	49.9	39.1	35	29.8	17.8	8.2	24	7.15	43.5	33.45	26.45
	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	D1	D2
	50	12	9.1	6.3	11.6	3.6	13.1	4.2	16.2	6.8	M7	M5
	D3	D4	L3	L5	L6	L7	L8	L9	L10	L11		
	M5	Ø4.5	7	12.5	10.5	10.2	10.5	16.5	14.7	11		

Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1 [mm]	42.5	53	63.5	74	84.5	96	106.5	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	89	99.5	109	119.5	140.5	161.5	182.5

Pneumatic valves VUWG-B10A, sub-base valves

Ordering data

Technical data – Manifold rails[1)]

	Port			CRC	Material[3)]	Operating pressure	Max. tightening torque for assembly [Nm]		
	2, 4	1, 3, 5	12/14, 82/84			[bar]	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	W	–	M7	–	

Manifold assembly parts	
Manifold rail	**VABM**

Valve series	
VUWG	**L1**

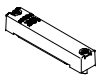
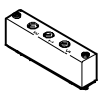
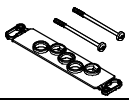
Valve width	
10 mm	**10A**

Rail with ports 1, 2, 3, 4, 5, 12/14, 82/84	
Ports 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 – Accessories

			Type
Blanking plate			Technical data ➔ Internet: vabb
	For manifold rail 10AW	Incl. screws and seal	**VABB-L1-10A**
Separator			Technical data ➔ Internet: vabd
	For manifold rail 10AW	Separator for pressure zones	**VABD-4.2-B**
Supply plate			Technical data ➔ Internet: vabf
	For manifold rail 10AW	Incl. screws and seal	**VABF-L1-10A-P3A4-M5**
Seals			Technical data ➔ Internet: vabd
	For sub-base valves B10A	10 seals and 20 screws	**VABD-L1-10AB-S-M3**

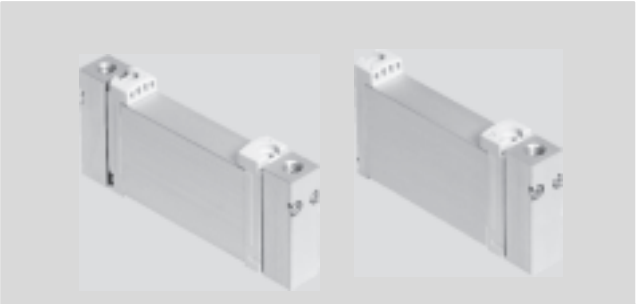
Pneumatic valves VUWG-B10, sub-base valves

Technical data

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

Width 10 mm

Flow rate
150 ... 270 l/min



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]
Pneumatic spring reset method			Yes			Yes			Yes[5]	–		No		
Mechanical spring reset method			No			No			Yes[5]	–		Yes		
Vacuum operation at port 1			No							Yes				
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Pneumatic											
Type of control			Direct											
Pilot air supply			External											
Exhaust function			With flow control											
Type of mounting			On manifold rail											
Mounting position			Any											
Standard nominal flow rate M5		[l/min]	150			130	120		210		180	200		
Standard nominal flow rate M7		[l/min]	160			140	130		270		230	250		
Switching time on/off		[ms]	4/9			6/7			6/12	–	7/16	8/25		
Changeover time		[ms]	–							5	–	11		
Width		[mm]	10											
Port	1, 3, 5		G1/8											
	2, 4		M5/M7											
	12/14, 82/84		M5											
Product weight		[g]	48			51			45	48	41	48		
Corrosion resistance class		CRC	2[6]											

1) C = Normally closed
2) U = Normally open
3) E = Normally exhausted
4) H=2x3/2-way valve in one housing with 1x normally closed and 1x normally open
5) Combined reset method
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.

Pneumatic valves VUWG-B10, sub-base valves

Technical data

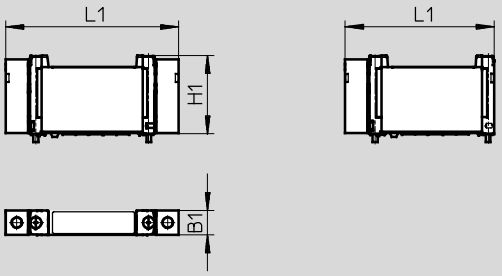
Operating and environmental conditions							
Valve function		T32-A[2]	T32-M[3]	M52-R[4]	B52	M52-M[2]	P53
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)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

1) Note operating pressure/pilot pressure graph ➔page 4
2) Pneumatic spring
3) Mechanical spring
4) Mixed, pneumatic/mechanical spring

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



Type	B1	H1	L1
VUWG-B10-...	10.3	32.5	72
VUWG-B10-M52-...			62

1) Only with external pilot air

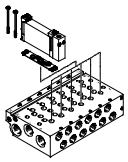
Pneumatic valves VUWG-B10, sub-base valves

Order code

VUWG	–	B	10	–		–		–	F

Valve design

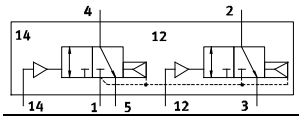
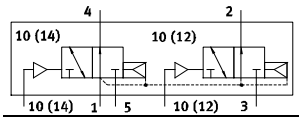
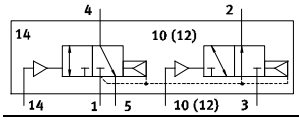
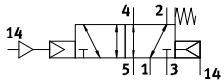
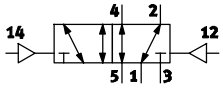
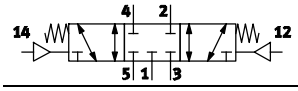
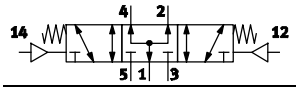
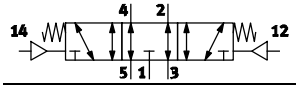
Sub-base, manifold valve incl. seal and screws	B



Width

10 mm	10

Valve functions

	T32C
	T32U
	T32H
	M52
	B52
	P53C
	P53U
	P53E

Pneumatic connection

F	In the manifold rail

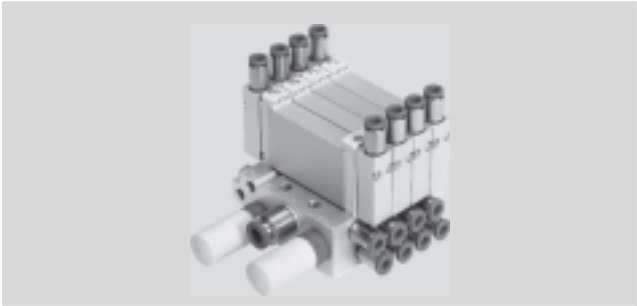
Reset method

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

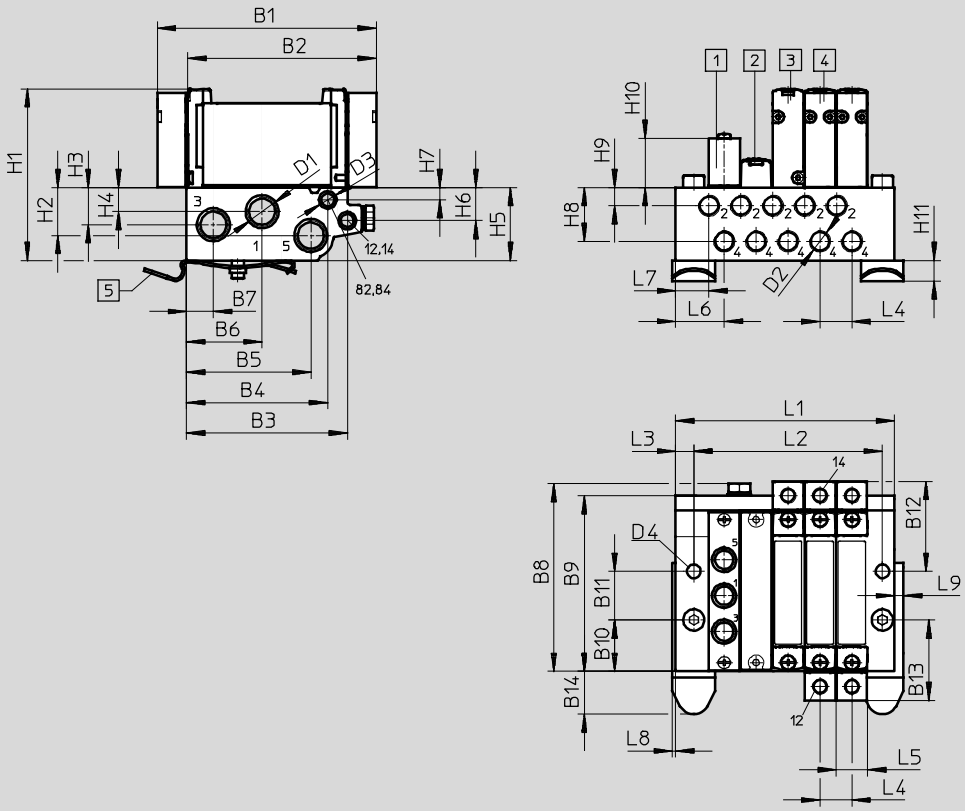
Pneumatic valves VUWG-B10, sub-base valves

Manifold assembly

Sub-base valve for manifold assembly
M5 or M7 connection



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



1 Supply plate VABF-L1-10-P3A4-M5
2 Blanking plate VABB-L1-10-W
3 Single pilot pneumatic valve, VUWG-B10-M52
4 Double pilot pneumatic valve, VUWG-B10
5 H-rail mounting (two M4x30 screws to DIN 912 are required)

Type												
VABM-L1-...G18	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
	72	62	52.9	46.5	40.9	24.9	8.9	62	57.7	16.9	16	29.5
	B13	B14	D1	D2	D3	D4	H1	H2	H3	H4	H5	H6
	26.5	14.1	G1⁄8	M5	M5	4.5	56.4	15.7	12.2	7.9	23.9	10.8
	H7	H8	H9	H10	H11	L3	L4	L5	L6	L7	L8	L9
	4	17.6	5.9	16.2	6.8	4	10.5	10.3	16	11	1	3
	L8	L9	L15									
	1	3	10									

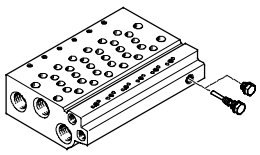
Valve positions	2	3	4	5	6	7	8	9	10	12	14	16	22
L1 [mm]	48.5	59	69.5	80	90.5	101	111.5	122	132.5	153.5	174.5	195.5	258.5
L2 [mm]	30.5	41	51.5	62	72.5	83	93.5	104	114.5	135.5	156.5	177.5	240.5

Pneumatic valves VUWG-B10, sub-base valves

FESTO

Ordering data

Technical data – Manifold rails[1)]

	Port			CRC	Material[3)]	Operating pressure	Max. tightening torque for assembly [Nm]		
	2, 4	1, 3, 5	12/14, 82/84			[bar]	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

VUWG	**L1**

Valve width

10 mm	**10**

Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84

Ports 2 and 4 in M5	**W**
Ports 2 and 4 in M7	**HW**

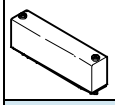
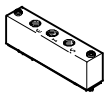
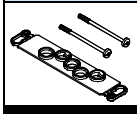
Number of valve positions

	2 to 10, 12, 14 and 16

Ports 1, 3, 5

G18	G1⁄8

Ordering data – Accessories

			Type
Blanking plate			Technical data ➔ Internet: vabb
	For manifold rail 10W/10HW, sub-base valves	Incl. screws and seal	**VABB-L1-10-W**
Separator			Technical data ➔ Internet: vabd
	For manifold rail 10W and 10HW, sub-base valves	Separator for pressure zones	**VABD-6-B**
Supply plate			Technical data ➔ Internet: vabf
	For manifold rail 10W	Incl. screws and seal	**VABF-L1-10-P3A4-M5**
	For manifold rail 10HW		**VABF-L1-10-P3A4-M7**
Seals			Technical data ➔ Internet: vabd
	For sub-base valves B10	10 seals and 20 screws	**VABD-L1-10B-S-M7**

Pneumatic valves VUWG-B14, sub-base valves

Technical data

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

Width 14 mm

Flow rate
510 ... 580 l/min

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]
Pneumatic spring reset method		Yes							–		No		
Mechanical spring reset method		No							–		Yes		
Vacuum operation at port 1		No			No			Yes					
Design		Piston spool valve											
Sealing principle		Soft											
Actuation type		Pneumatic											
Type of control		Direct											
Pilot air supply		External											
Exhaust function		With flow control											
Type of mounting		On manifold rail											
Mounting position		Any											
Standard nominal flow rate	[l/min]	540	510	540	430	410		580			540	510	
Switching time on/off	[ms]	6/19			9/13			12/22	–		8/30		
Changeover time	[ms]	–							6		16		
Width	[mm]	14											
Port	1, 3, 5	G¼											
	2, 4	G⅛											
	12/14, 82/84	M5											
Product weight	[g]	83			83			75	81				
Corrosion resistance class	CRC	2[6]											

1) C = Normally closed
2) U = Normally open
3) E = Normally exhausted
4) H=2x3/2-way valve in one housing with 1x normally closed and 1x normally open
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.

Pneumatic valves VUWG-B14, sub-base valves

Technical data

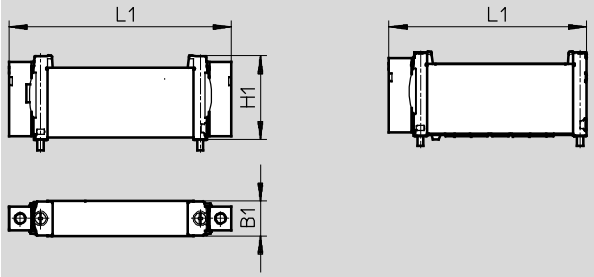
Operating and environmental conditions							
Valve function		T32-A[2]	T32-M[3]	M52-A[2]	B52	M52-M[3]	P53
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)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

1) Note operating pressure/pilot pressure graph ➔page 4
2) Pneumatic spring
3) Mechanical spring
4) Mixed, pneumatic/mechanical spring

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



Type	B1	H1	L1
VUWG-B14-...	14.4	34.8	92.6
VUWG-B14-M52-...			82.3

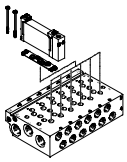
Pneumatic valves VUWG-B14, sub-base valves

Order code

VUWG	–	B	14	–		–		–	F

Valve design

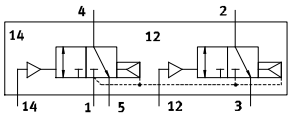
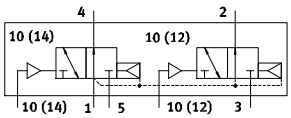
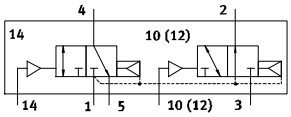
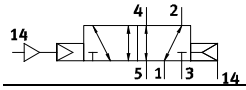
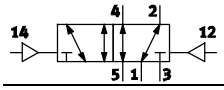
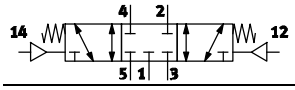
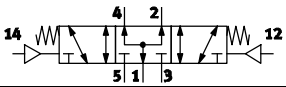
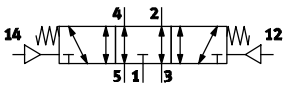
Sub-base, manifold valve incl. seal and screws	B



Width

10 mm	14

Valve functions

	T32C
	T32U
	T32H
	M52
	B52
	P53C
	P53U
	P53E

Pneumatic connection

F	In the manifold rail

Reset method

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

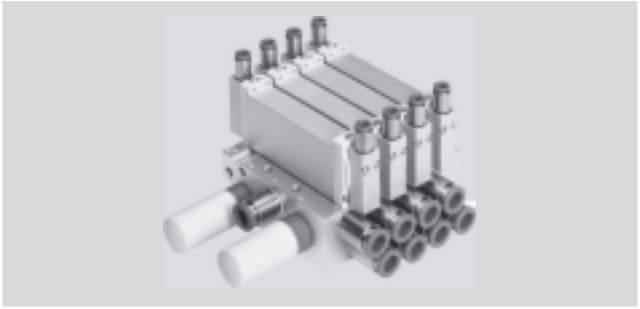
1) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5

2) Flow rate applies to 5/2-way individual valve

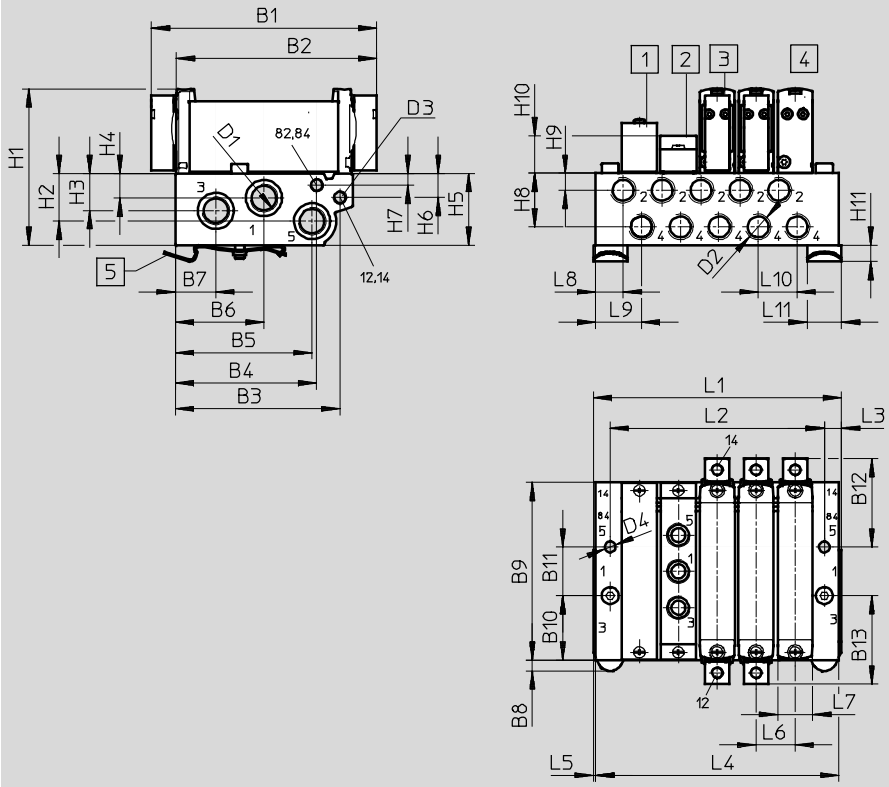
Pneumatic valves VUWG-B14, sub-base valves

Manifold assembly

Sub-base valve for manifold assembly G⅛ connection



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



1 Blanking plate VABB-L1-14
2 Supply plate VABF-L1-14-P3A4-G18
3 Double pilot pneumatic valve
4 Single pilot pneumatic valve
5 H-rail mounting (two M4x25 screws to DIN 912 are required)

Type												
VUWG-B14 -...-F- ...	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
	92.6	82.3	67.7	58.2	56.3	36.6	16.7	4.5	72.9	26.5	20	36.3
	B13	D1	D2	D3	D4	H1	H2	H3	H4	H5	H6	H7
	36.3	G¼	G⅛	M5	Ø 4.5	64.3	19.6	15.3	10.1	29.5	9.8	4.8
	H8	H9	H10	H11	L3	L5	L6	L7	L8	L9	L10	L11
	22.1	7	15.4	6.8	6	1	16	14.4	11.3	18.5	16	14

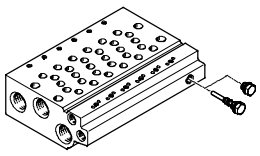
Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1 [mm]	56.3	72.3	88.3	104.3	120.3	136.3	152.3	168.3	184.3	216.3	248.3	280.3
L2 [mm]	40	56	72	88	104	120	136	152	168	200	232	264
L4 [mm]	54.3	70.3	86.3	102.3	118.3	134.3	150.3	166.3	182.3	214.3	246.6	278.3

Pneumatic valves VUWG-B14, sub-base valves

FESTO

Ordering data

Technical data – Manifold rails[1)]

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

1) Blanking plugs are included with the manifold rail.
2) Corrosion resistance class 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 G1⁄8

VABM	–	L1	–	14	W	–	G14	–	

Manifold assembly parts	
Manifold rail	**VABM**

Valve series	
VUWG	**L1**

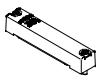
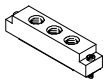
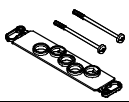
Valve width	
14 mm	**14**

Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84	
Ports 2 and 4 in G1⁄8	**W**

Ports 1, 3, 5	
G14	G1⁄4

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

Ordering data – Accessories

			Type
Blanking plate			Technical data ➔ Internet: vabb
	For manifold rail 14W, sub-base valves	Incl. screws and seal	**VABB-L1-14**
Separator			Technical data ➔ Internet: vabd
	For manifold rail 14W, sub-base valves	Separator for pressure zones	**VABD-10-B**
Supply plate			Technical data ➔ Internet: vabf
	For manifold rail 14W	Incl. screws and seal	**VABF-L1-14-P3A4-G18**
Seals			Technical data ➔ Internet: vabd
	For sub-base valves B14	10 seals and 20 screws	**VABD-L1-14B-S-G18**

Pneumatic valves VUWG-B18, sub-base valves

FESTO

Technical data

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

Width 18 mm

Flow rate
900 ... 1,000 l/min

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]
Pneumatic spring reset method			Yes							–		No		
Mechanical spring reset method			No							–		Yes		
Vacuum operation at port 1			No			No			Yes					
Design			Piston spool valve											
Sealing principle			Soft											
Actuation type			Pneumatic											
Type of control			Direct											
Pilot air supply			External											
Exhaust function			With flow control											
Type of mounting			On manifold rail											
Mounting position			Any											
Standard nominal flow rate		[l/min]	900						1,000			950		
Switching time on/off		[ms]	12/25			14/22			14/30	–	12/45	12/45		
Changeover time		[ms]	–							10	–	25		
Width		[mm]	18											
Port	1, 3, 5		G¼											
	2, 4		G⅛											
	12/14, 82/84		M5											
Product weight		[g]	83			83			75	81				
Corrosion resistance class		CRC	2[6]											

1) C = Normally closed
2) U = Normally open
3) E = Normally exhausted
4) H=2x3/2-way valve in one housing with 1x normally closed and 1x normally open
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.

Pneumatic valves VUWG-B18, sub-base valves

Technical data

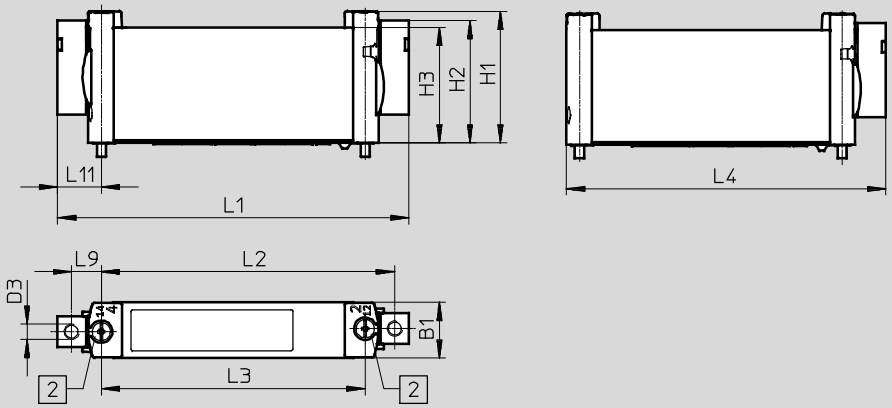
Operating and environmental conditions							
Valve function		T32-A[2]	T32-M[3]	M52-R[4]	B52	M52-M[3]	P53
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)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

1) Note operating pressure/pilot pressure graph ➔page 4
2) Pneumatic spring
3) Mechanical spring
4) Mixed, pneumatic/mechanical spring

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



2 Mounting screw

Type	B1	D3	H1	H2	H3	L1	L2	L3	L4	L9	L11
VUWG-B18...	18.3	M5	43.1	40	37.8	115	96.1	86.4	105	9.7	14.3

Pneumatic valves VUWG-B18, sub-base valves

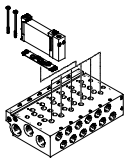
FESTO

Order code

VUWG	–	B	18	–		–		–	F

Valve design

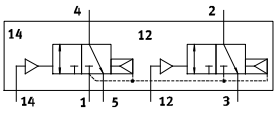
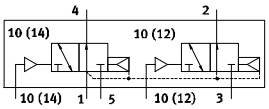
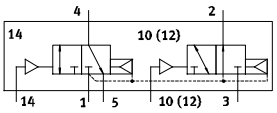
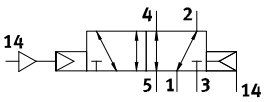
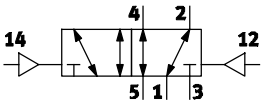
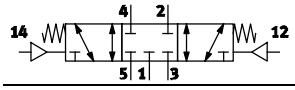
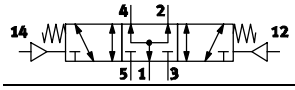
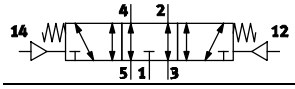
Sub-base, manifold valve incl. seal and screws	B



Width

18 mm	18

Valve functions

	T32C
	T32U
	T32H
	M52
	B52
	P53C
	P53U
	P53E

Pneumatic connection

F	In the manifold rail

Reset method

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

1) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5

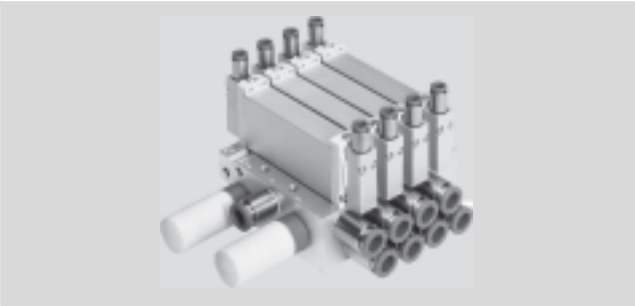
2) Flow rate applies to 5/2-way individual valve

Pneumatic valves VUWG-B18, sub-base valves

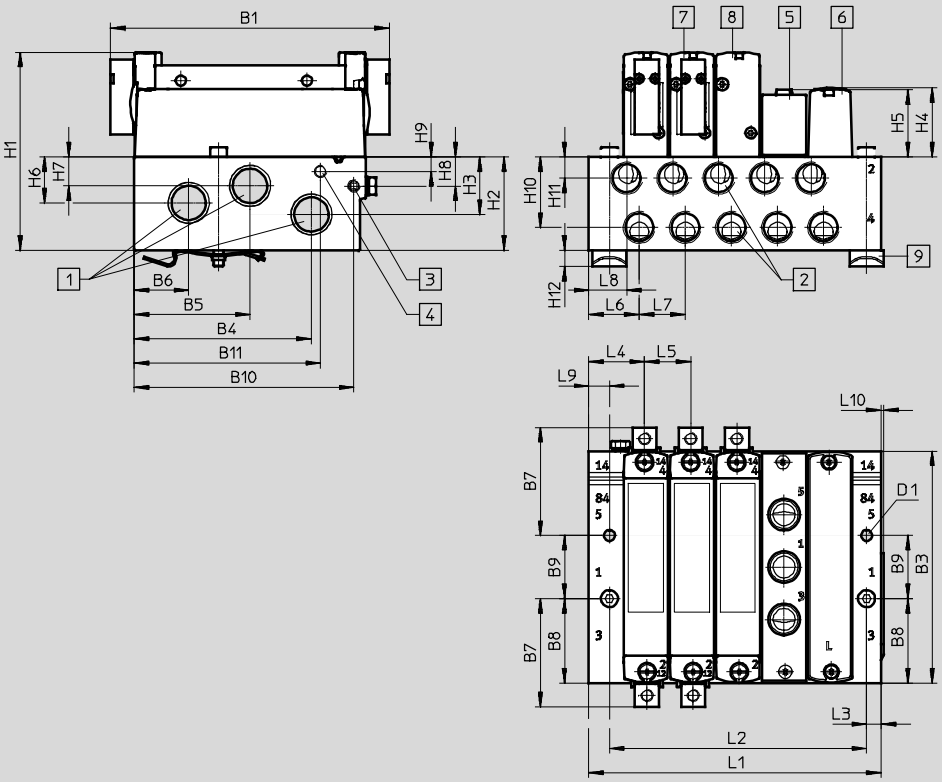
Manifold assembly

FESTO

Sub-base valve for manifold assembly
G⅛ connection



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



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 VABF-L1-18-P3A4-G14
6 Blanking plate VABB-L1-18
7 Double pilot pneumatic valve
8 Single pilot pneumatic valve
9 H-rail mounting (two M4x40 screws to DIN 912 are required for mounting)

Type												
VUWG-B14 -...-F- ...	B1	B3	B4	B5	B6	B7	B8	B9	B10	B11	D1	H1
	115	95.6	73.1	47.8	22.5	51.7	34.8	26	90.6	76.8	4.5	81.6
	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	L3
	38.5	23.8	28.4	27.6	19	12	12.1	6.1	29.1	8.8	6.5	6
	L4	L5	L6	L7	L8	L9	L10					
	23	19	20.8	19	15.6	8.5						

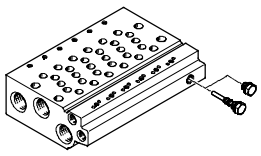
Valve positions	2	3	4	5	6	7	8	9	10	12	14	16
L1 [mm]	56.3	72.3	88.3	104.3	120.3	136.3	152.3	168.3	184.3	216.3	248.3	280.3
L2 [mm]	40	56	72	88	104	120	136	152	168	200	232	264
L4 [mm]	54.3	70.3	86.3	102.3	118.3	134.3	150.3	166.3	182.3	214.3	246.6	278.3

Pneumatic valves VUWG-B18, sub-base valves

FESTO

Ordering data

Technical data – Manifold rails[1)]

	Port			CRC	Material[3)]	Operating pressure	Max. tightening torque for assembly [Nm]		
	2, 4	1, 3, 5	12/14, 82/84			[bar]	Valve	H-rail	Wall
	G¼	G⅜	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 G¼

VABM	–	L1	–	18	W	–	G38	–	

Manifold assembly parts	
Manifold rail	**VABM**

Valve series	
VUWG	**L1**

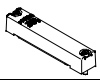
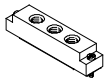
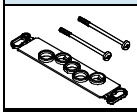
Valve width	
18 mm	**18**

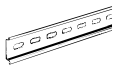
Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84	
Ports 2 and 4 in G¼	**W**

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

Ports 1, 3, 5	
G38	G⅜

Ordering data – Accessories

			Type
Blanking plate			Technical data ➔ Internet: vabb
	For manifold rail 18W, sub-base valves	Incl. screws and seal	**VABB-L1-18**
Separator			Technical data ➔ Internet: vabd
	For manifold rail 14W, sub-base valves	Separator for pressure zones	**VABD-14-B**
Supply plate			Technical data ➔ Internet: vabf
	For manifold rail 14W	Incl. screws and seal	**VABF-L1-18-P3A4-G14**
Seals			Technical data ➔ Internet: vabd
	For sub-base valves B14	10 seals and 20 screws	**VABD-L1-18B-S-G14**

Ordering data			
	Description		Type
Blanking plug			Technical data ➔ Internet: b
	For manifold rail and valve		**B-M5-B**
			B-M7
	For manifold rail		**B-⅛**
			B-¼
Blanking plug			Technical data ➔ Internet: qsc
	For valve		**QSC-F-G1/8-I**
Reducing nipple			
			**D-M5I-M7A-ISK**
Fittings			Technical data ➔ Internet: qs
	For tubing Ø 3 mm	100 pieces	**QSM-M3-3-I-R-100**
	For tubing Ø 4 mm		**QSM-M3-4-I-R-100**
	For tubing Ø 3 mm		**QSM-M5-3-I-R100**
	For tubing Ø 4 mm		**QSM-M5-4-I-R100**
	For tubing Ø 6 mm		**QSM-M5-6-I-R100**
	For tubing Ø 6 mm		**QSM-M7-6-I-R100**
	For tubing Ø 3 mm	10 pieces	**QSM-M5-3-I**
	For tubing Ø 4 mm		**QSM-M5-4-I**
	For tubing Ø 6 mm		**QSM-M5-6-I**
	For tubing Ø 4 mm		**QSM-M7-4-I**
	For tubing Ø 6 mm		**QSM-M7-6-I**
	For tubing Ø 4 mm	10 pieces	**QS-G1/8-4-I**
	For tubing Ø 6 mm		**QS-G1/8-6-I**
	For tubing Ø 8 mm		**QS-G1/8-8-I**
	For tubing Ø 10 mm		**QS-G1/8-10-I**
	For tubing Ø 6 mm	10 pieces	**QS-G1/4-6-I**
	For tubing Ø 8 mm		**QS-G1/4-8-I**
	For tubing Ø 10 mm		**QS-G1/4-10-I**
Silencer			Technical data ➔ Internet: uc
	For thread M5		**U-M5**
	For thread M7		**UC-M7**
	For thread G⅛		**UC-⅛**
	For thread G¼		**UC-¼**
H-rail			Technical data ➔ Internet: nrh
	To EN 60715, 35 x 7.5 (WxH)	2 m	**NRH-35-2000**
H-rail mounting			Technical data ➔ Internet: vame
	–	2 pieces	**VAME-T-M4**