

## Valve series VOVG

**FESTO**



Product range overview

Function	Symbol	Design	Normal position		Voltage [V DC]			→ Page/ Internet
			Open	Closed	5	12	24	
3/2-way valve		In-line valve	■	■	■	■	■	8
		Semi in-line valve	■	■	■	■	■	
		Sub-base valve	■	■	■	■	■	
5/2-way valve		In-line valve	-	-	■	■	■	
		Semi in-line valve	-	-	■	■	■	
		Sub-base valve	-	-	■	■	■	

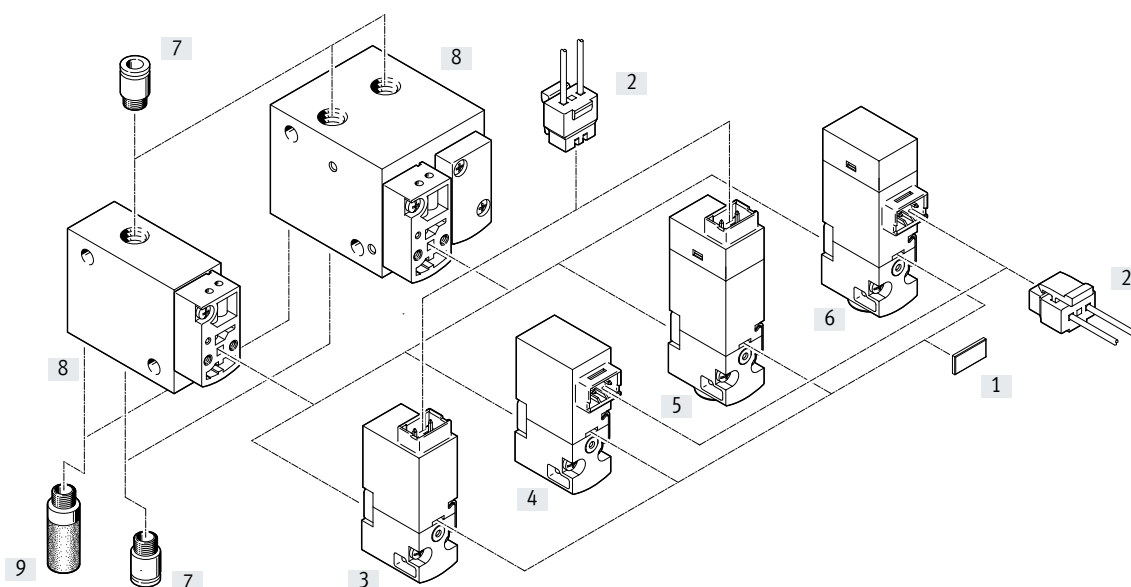
Mounting options		5 VDC	12 VDC	24 VDC	
Voltage				Without switching status indication	With switching status indication

Horizontal plug connection (H2)					
	Direct mounting	■	■	■	■
	Manifold assembly	■	■	■	■

Vertical plug connection (H3)					
	Direct mounting	■	■	■	■
	Manifold assembly	■	■	■	■

## Peripherals overview

## In-line valve

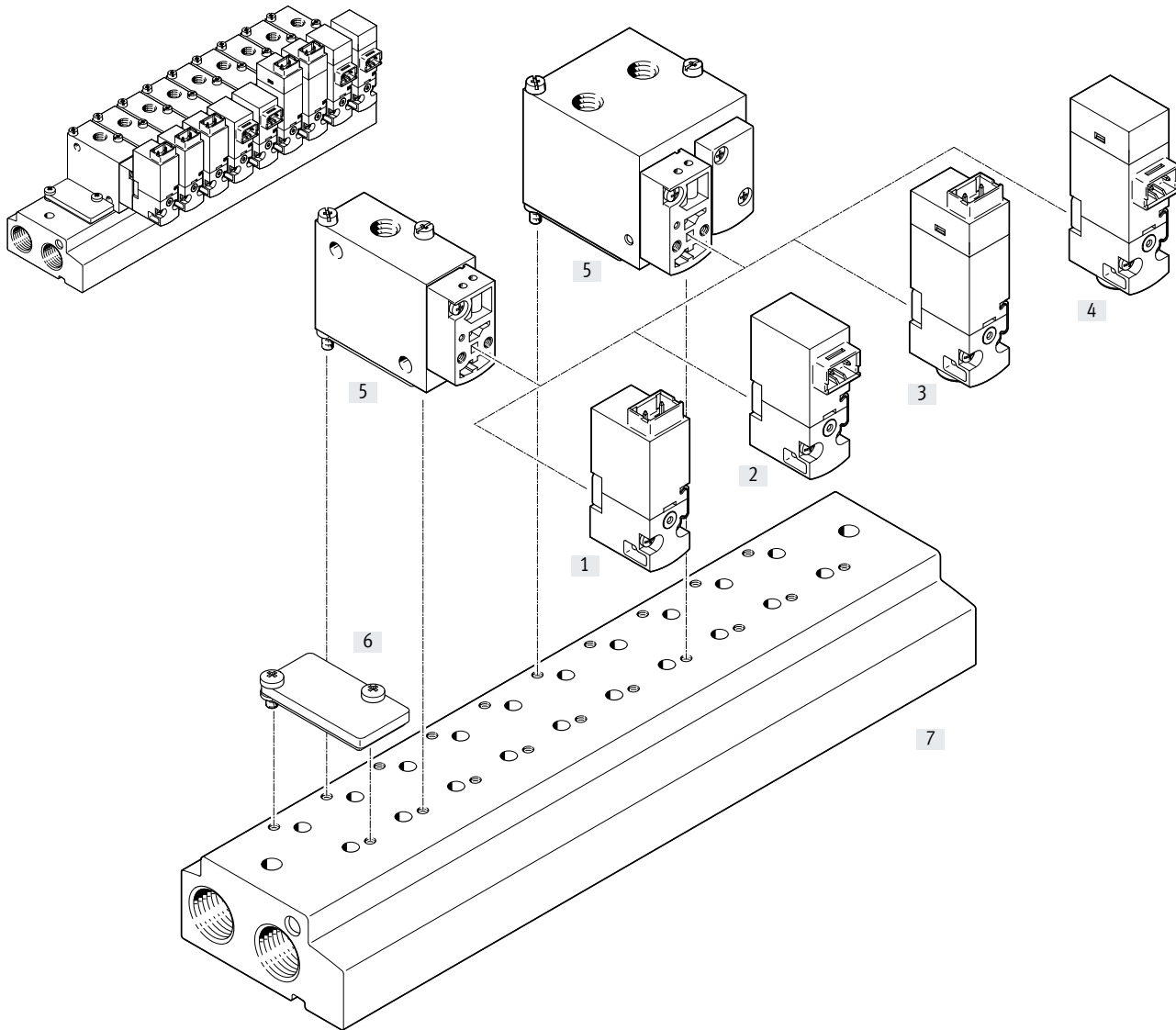


## Individual components

		Type	Brief description	→ Page/ Internet
[1]	Inscription label	MH-BZ-80X	For identifying the solenoid valves	19
[2]	Plug socket with cable	NEBV	For solenoid coils	19
[3]	Pilot valve	–	With vertical plug connection	8
[4]	Pilot valve	–	With horizontal plug connection	8
[5]	Pilot valve	–	With vertical plug connection and LED	8
[6]	Pilot valve	–	With horizontal plug connection and LED	8
[7]	Push-in fitting	QS/QSM	For standard O.D. tubing	18
[8]	Basic valves	–	Modules of the solenoid valves VOVG	8
[9]	Silencers	U	For fitting in exhaust ports	18

## System overview

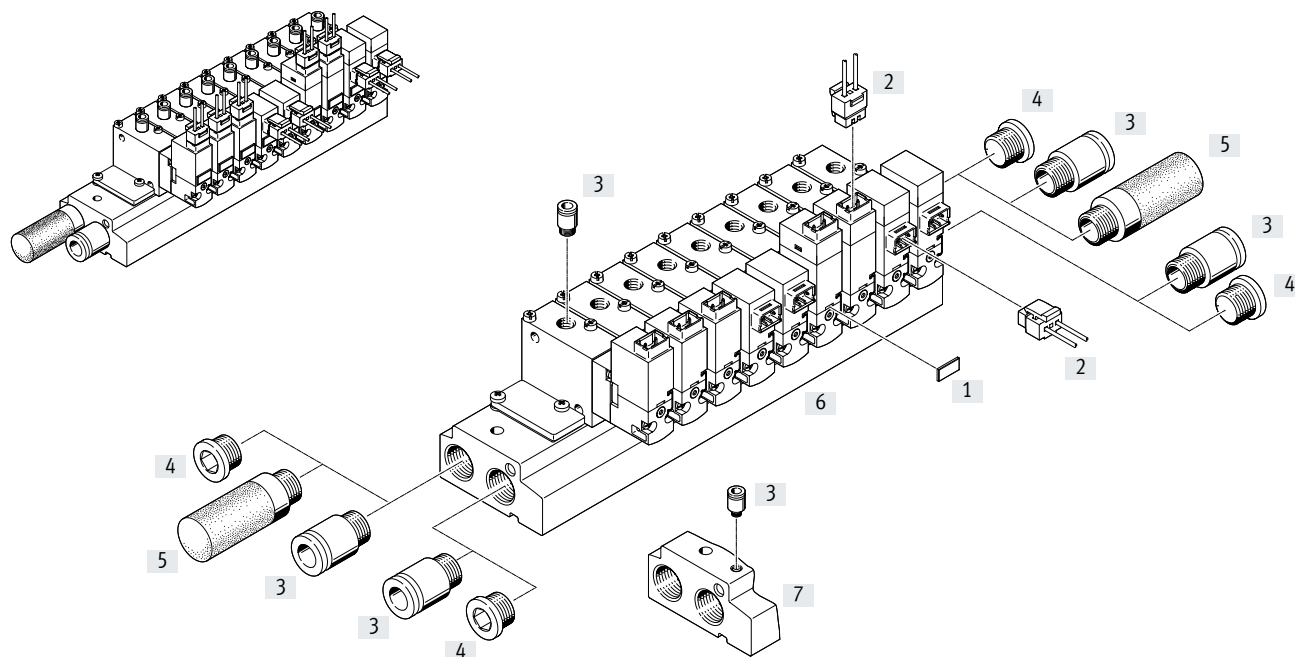
### Manifold assembly – Semi in-line valves



Individual components		Type	Brief description	→ Page/ Internet
[1]	Pilot valve	–	With vertical plug connection	8
[2]	Pilot valve	–	With horizontal plug connection	8
[3]	Pilot valve with LED	–	With vertical plug connection and LED	8
[4]	Pilot valve with LED	–	With horizontal plug connection and LED	8
[5]	Basic valves	–	Modules of the solenoid valves VOVG	8
[6]	Cover plate	VABB-C7-12-W	For vacant positions	18
[7]	Manifold rail	VABM-C7-...	For semi in-line valves	16

## Peripherals overview

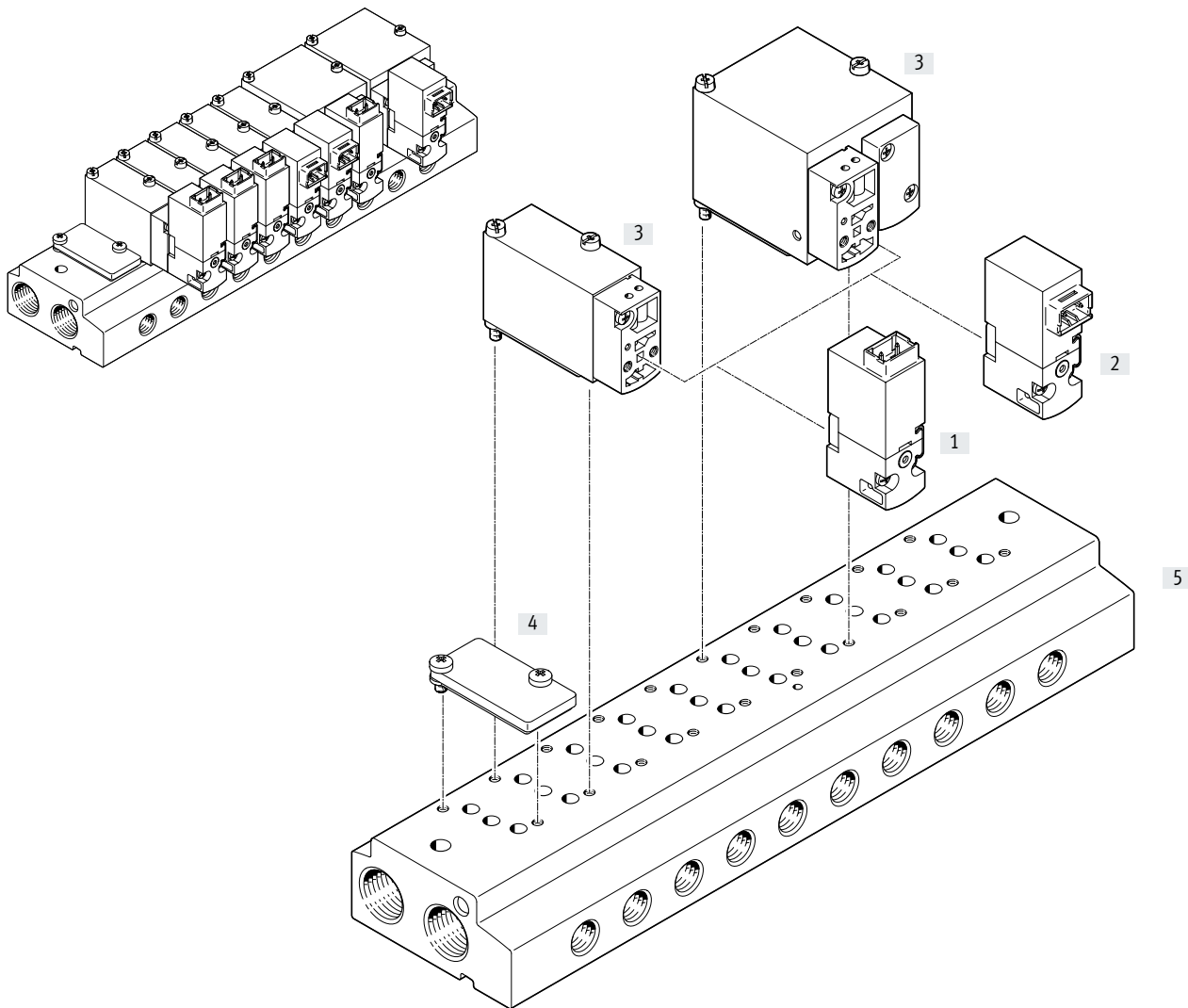
## Manifold assembly – Semi in-line valves with accessories



Individual components		Type	Brief description	→ Page/ Internet
[1]	Inscription label	MH-BZ-80X	For identifying the solenoid valves	19
[2]	Plug socket with cable	NEBV	For solenoid coils	19
[3]	Push-in fitting	QS/QSM	For standard O.D. tubing	18
[4]	Blanking plug	B	For sealing unused connections	18
[5]	Silencers	U	For fitting in exhaust ports	18
[6]	Manifold rail	VABM-...-P...	Without port for external pilot air for valves with internal pilot air supply	16
[7]	Manifold rail	VABM-...-G...	With port for external pilot air	16

## System overview

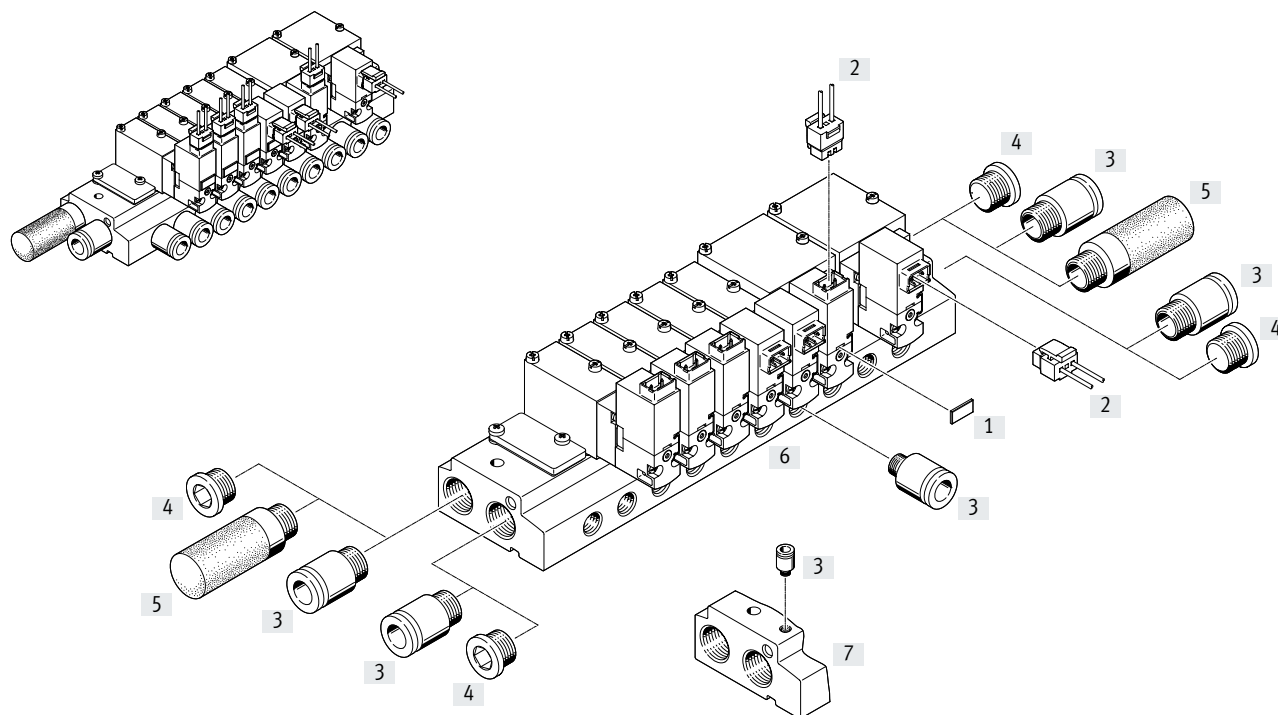
### Manifold assembly – Sub-base valves



Individual components		Type	Brief description	→ Page/ Internet
[1]	Pilot valve	-	With vertical plug connection	8
[2]	Pilot valve	-	With horizontal plug connection	8
[3]	Basic valves	-	Modules of the solenoid valves VOVG	8
[4]	Cover plate	VABB-C7-12-W	For vacant positions	18
[5]	Manifold rail	VABM-C7-...	For sub-base valves	17





## Peripherals overview

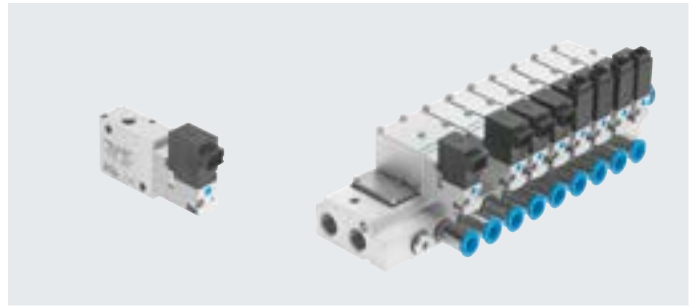
## Manifold assembly – Sub-base valves with accessories



Individual components		Type	Brief description	→ Page/ Internet
[1]	Inscription label	MH-BZ-80X	For identifying the solenoid valves	19
[2]	Plug socket with cable	NEBV	For solenoid coils	19
[3]	Push-in fitting	QS/QSM	For standard O.D. tubing	18
[4]	Blanking plug	B	For sealing unused connections	18
[5]	Silencers	U	For fitting in exhaust ports	18
[6]	Manifold rail	VABM-...-M...	Without port for external pilot air for valves with internal pilot air supply	17
[7]	Manifold rail	VABM-...-W...	With port for external pilot air	17

## Datasheet

	Voltage 5, 12, 24 V DC		Temperature range -5 ... +50°C
	Pressure -0.9 ... +8 bar		
	Flow rate 180 ... 200 l/min		



General technical data		
Design type		In-line valve
Valve function		3/2-way, closed, single solenoid 3/2-way, open, single solenoid 5/2-way, single solenoid
Design		Piston spool
Overlap		Positive overlap
Sealing principle		Soft
Actuation type		Electrical
Reset method		Pneumatic spring
Type of control		Piloted
Direction of flow		Not reversible
Mounting position		Any
Nominal width	[mm]	2.1
Standard nominal flow rate	[l/min]	180 ... 200
Width	[mm]	10
	[mm]	12

Switching times [ms]	Switching times [ms]	
	Switching time on	Switching time off
3/2-way valve	12	10
5/2-way valve	15	18

Pneumatic connection		1	2	3
In-line valve	Width 10 mm	M5	M5	M5
	Width 25 mm	M7	M5	M5
Semi in-line valve		Sub-base	M5	Sub-base
Sub-base valve		Sub-base	Sub-base	Sub-base

Operating and environmental conditions		Valve manifold assembly	3/2-way valve	5/2-way valve
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]		
Pilot medium		Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure	[MPa]	-0.09 ... 0.8	0.2 ... 0.8	0.2 ... 0.8
	[bar]	-0.9 ... 8	2 ... 8	2 ... 8
	[psi]	-13.05 ... 116	29 ... 116	29 ... 116
Pilot pressure	[MPa]	0.3 ... 0.8	-	-
	[bar]	3 ... 8	-	-
	[psi]	43.5 ... 116	-	-
Ambient temperature	[°C]	-5 ... +50		
Temperature of medium	[°C]	-5 ... +50		
Corrosion resistance class CRC <sup>1)</sup>		0		
Noise level	[dB(A)]	95	-	-

1) Corrosion resistance class CRC 0 to Festo standard FN 940070

No corrosion stress. Applies to small, visually unimportant standards-based parts such as threaded pins, circlips and clamping sleeves which are usually only available on the market in a phosphated or burnished version (and possibly oiled) as well as to ball bearings (for components < CRC 3) and plain bearings.



# Datasheet

Electrical data		
Permissible voltage fluctuations	[%]	10
Electrical connection		Plug
		2-pin
Degree of protection		IP40

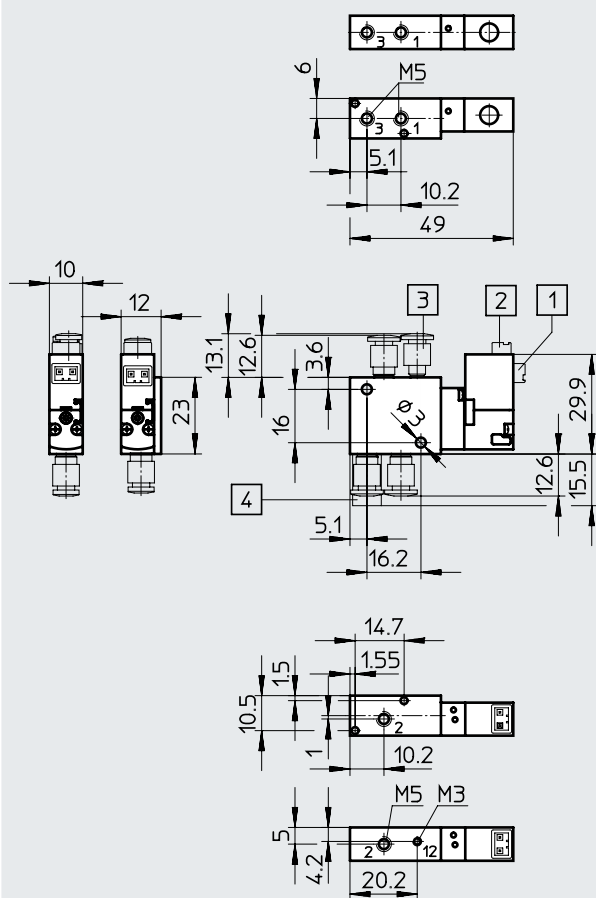
  

Materials	
Housing	Die-cast aluminium
Seals	FPM, HNBR, NBR
Screws	Galvanised steel
Note on materials	RoHS-compliant

## Dimensions – Valve

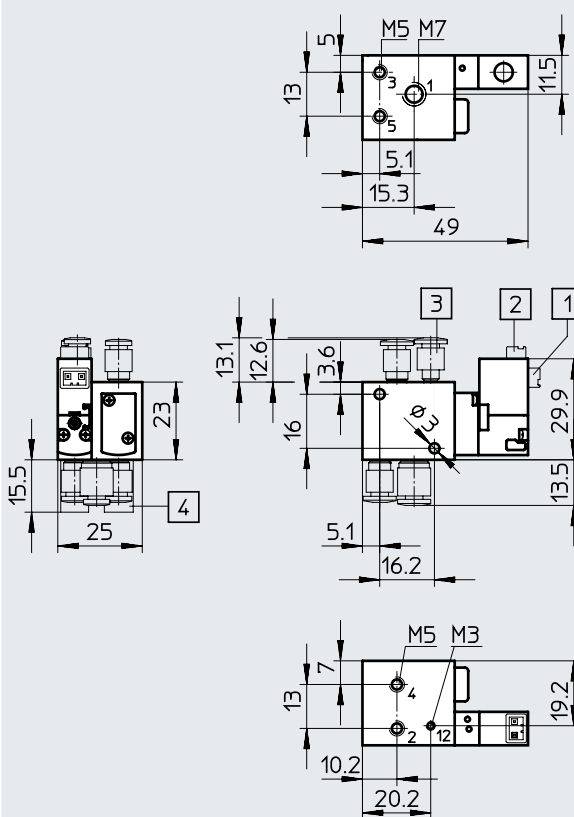
Download CAD data → [www.festo.com](http://www.festo.com)

### 3/2-way in-line valve



- [1] Electrical connection at the rear
- [2] Electrical connection on top
- [3] Pilot air supply
- [4] Silencer

### 5/2-way in-line valve



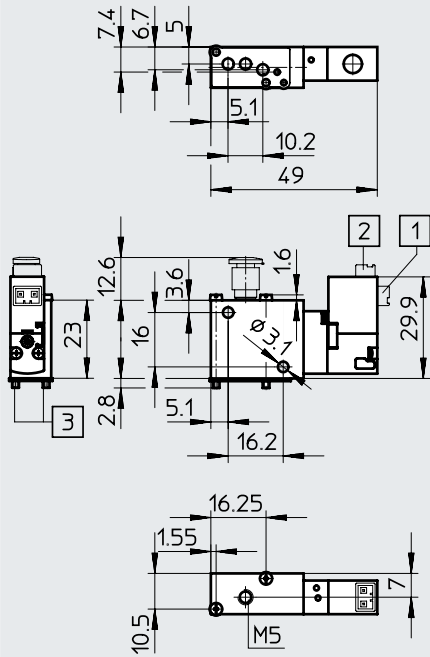
- [1] Electrical connection at the rear
- [2] Electrical connection on top
- [3] Pilot air supply
- [4] Silencer

Datasheet

Dimensions – Valve

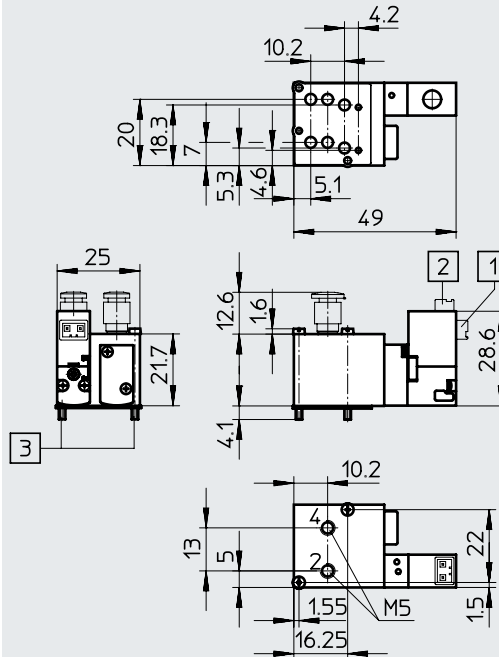
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3/2-way semi in-line valve



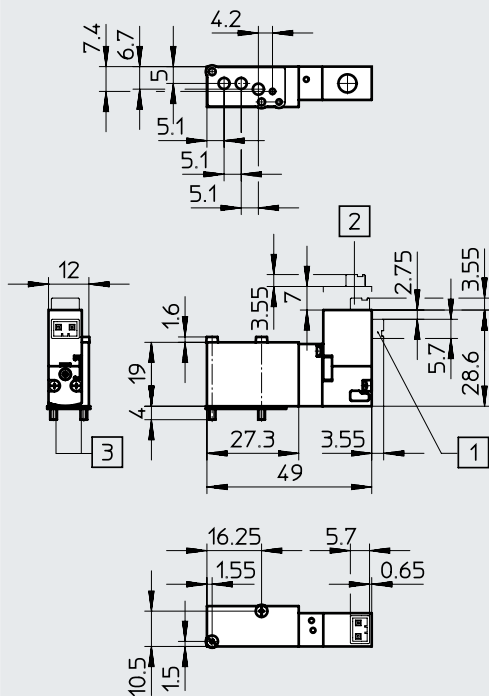
- [1] Electrical connection at the rear
- [2] Electrical connection on top
- [3] Retaining screws M2x25

5/2-way semi in-line valve



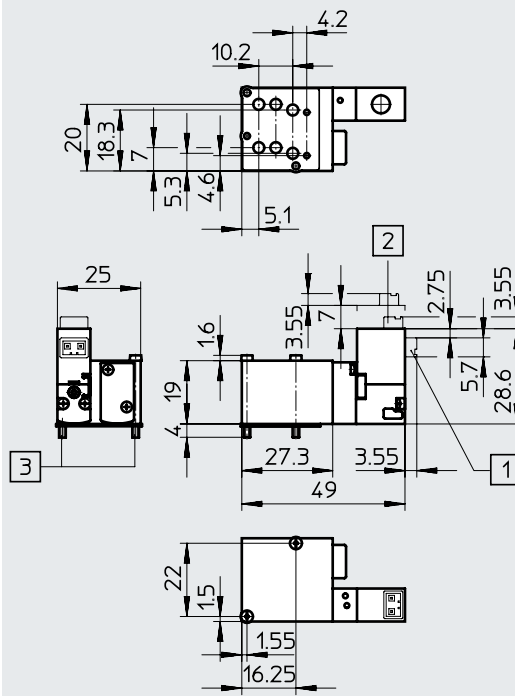
- [1] Electrical connection at the rear
- [2] Electrical connection on top
- [3] Retaining screws M2x25

3/2-way sub-base valve



- [1] Electrical connection at the rear
- [2] Electrical connection on top
- [3] Retaining screws M2x23

5/2-way sub-base valve



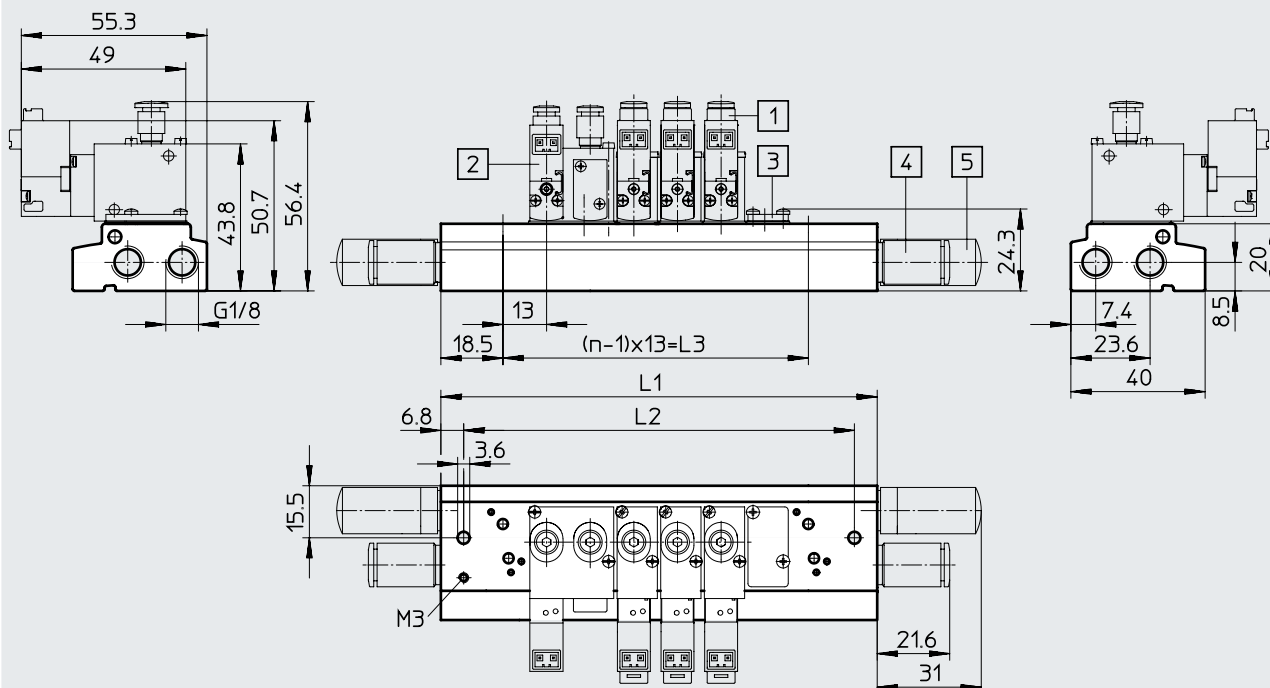
- [1] Electrical connection at the rear
- [2] Electrical connection on top
- [3] Retaining screws M2x23

## Datasheet

## Dimensions – Manifold assembly

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

Semi in-line valve



[1] 3/2-way semi in-line valve

[3] Cover plate VABB-C7-12-W

[4] Push-in fitting

[5] Silencer

[2] 5/2-way semi in-line valve

n Number of valve positions

occupying two valve positions

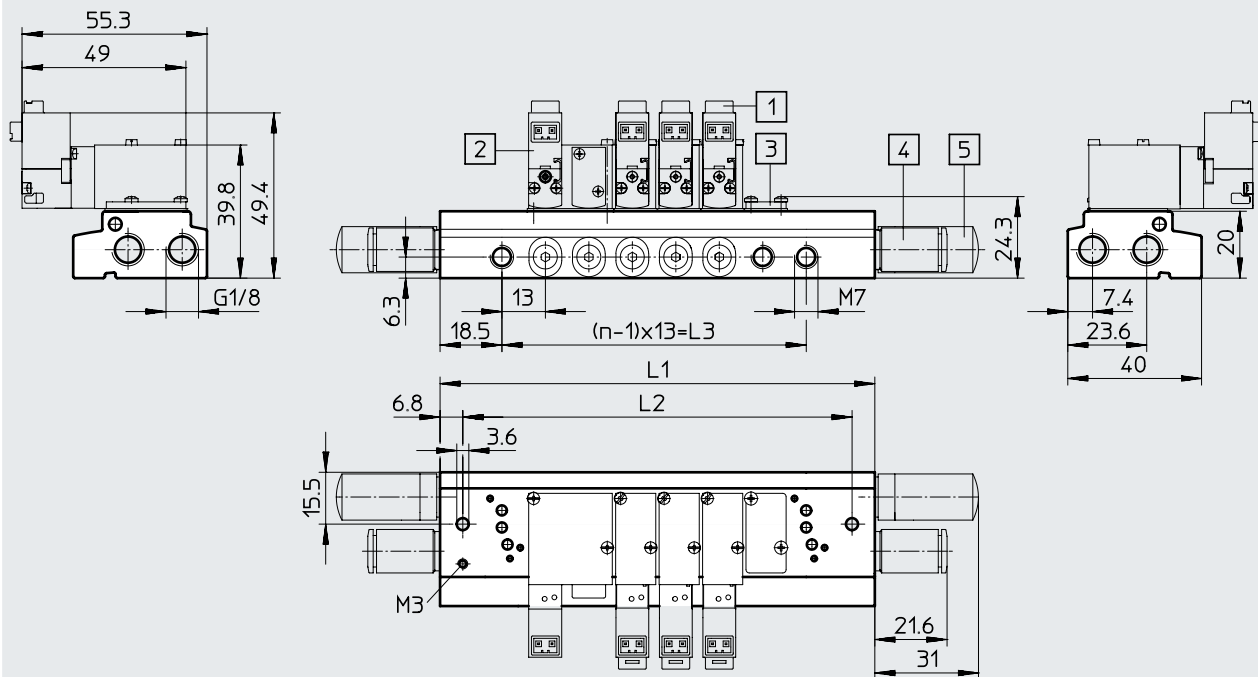
Number of valve positions n	L1	L2(-0/+0.4)	L3
2	52	38.4	13
3	65	51.4	26
4	78	64.4	39
5	91	77.4	52
6	104	90.4	65
7	117	103.4	78
8	130	116.4	91
9	143	129.4	104
10	156	142.4	117

Datasheet

Dimensions – Manifold assembly

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

Sub-base valve



- [1] 3/2-way sub-base valve
- [2] 5/2-way sub-base valve occupying two valve positions

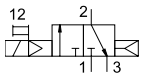
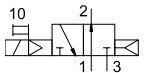
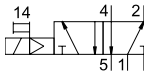
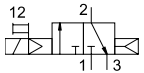
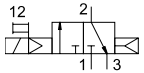
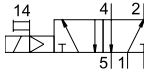
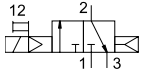
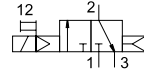
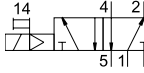
- [3] Cover plate VABB-C7-12-W

- [4] Push-in fitting

- [5] Silencer
- n Number of valve positions

Number of valve positions n	L1	L2(-0/+0.4)	L3
2	52	38.4	13
3	65	51.4	26
4	78	64.4	39
5	91	77.4	52
6	104	90.4	65
7	117	103.4	78
8	130	116.4	91
9	143	129.4	104
10	156	142.4	117

## Datasheet

Ordering data								
Circuit symbol	Width [mm]	Function	Normal position	Plug direction	Standard nominal flow rate [l/min]	Characteristic coil data	Part no.	Type
<b>In-line valve</b>								
	10	3/2-way, single solenoid	Closed	Horizontal	200	24 V DC, 1.0 W	560697	VOVG-L10-M32C-AH-M5-1H2
				Vertical	200	24 V DC, 1.0 W	560698	VOVG-L10-M32C-AH-M5-1H3
	10	3/2-way, single solenoid	Open	Horizontal	200	24 V DC, 1.0 W	560699	VOVG-L10-M32U-AH-M5-1H2
				Vertical	200	24 V DC, 1.0 W	560700	VOVG-L10-M32U-AH-M5-1H3
	25	5/2-way, single solenoid	-	Horizontal	200	24 V DC, 1.0 W	560701	VOVG-L12-M52Q-AH-M5-1H2
				Vertical	200	24 V DC, 1.0 W	560702	VOVG-L12-M52Q-AH-M5-1H3
<b>Semi in-line valve</b>								
	12	3/2-way, single solenoid	Closed	Horizontal	180	24 V DC, 1.0 W	560703	VOVG-S12-M32C-AH-M5-1H2
				Vertical	180	24 V DC, 1.0 W	560704	VOVG-S12-M32C-AH-M5-1H3
	12	3/2-way, single solenoid	Open	Horizontal	180	24 V DC, 1.0 W	560705	VOVG-S12-M32U-AH-M5-1H2
				Vertical	180	24 V DC, 1.0 W	560706	VOVG-S12-M32U-AH-M5-1H3
	25	5/2-way, single solenoid	-	Horizontal	180	24 V DC, 1.0 W	560707	VOVG-S12-M52Q-AH-M5-1H2
				Vertical	180	24 V DC, 1.0 W	560708	VOVG-L12-M52Q-AH-M5-1H3
<b>Sub-base valve</b>								
	12	3/2-way, single solenoid	Closed	Horizontal	180	24 V DC, 1.0 W	560709	VOVG-B12-M32C-AH-F-1H2
				Vertical	180	24 V DC, 1.0 W	560710	VOVG-B12-M32C-AH-F-1H3
	12	3/2-way, single solenoid	Open	Horizontal	180	24 V DC, 1.0 W	560711	VOVG-B12-M32U-AH-F-1H2
				Vertical	180	24 V DC, 1.0 W	560712	VOVG-B12-M32U-AH-F-1H3
	25	5/2-way, single solenoid	-	Horizontal	180	24 V DC, 1.0 W	560713	VOVG-B12-M52Q-AH-F-1H2
				Vertical	180	24 V DC, 1.0 W	560714	VOVG-B12-M52Q-AH-F-1H3

## Ordering data – Modular product system

Ordering table		Condi- tions	Code	Enter code
Module no.	<b>549438</b>			
Valve	Solenoid valve		<b>VOVG</b>	VOVG
Valve type	Sub-base valve		<b>-B</b>	
	Semi in-line valve		<b>-S</b>	
	In-line valve		<b>-L</b>	
Size	10 (200 l/min)	[1]	<b>10</b>	
	12 (200 l/min)		<b>12</b>	
Valve function	3/2-way valve, single solenoid, normally closed		<b>-M32C</b>	
	3/2-way valve, single solenoid, normally open		<b>-M32U</b>	
	5/2-way valve, single solenoid, 2 valve positions	[8]	<b>-M52Q</b>	
Reset method	Pneumatic spring		<b>-A</b>	-A
Pilot air	Internal pilot air supply			
	External pilot air supply	[9]	<b>Z</b>	

[1] 10, D, U Not with valve type B, S

[8] Z Not in combination with size 10

[9] Z Not in combination with valve type L and size 12

## Ordering data – Modular product system

Ordering table		Condi- tions	Code	Enter code
Manual override	Non-detenting		H	
	Non-detenting/detenting	[1] [2]	D	
Pneumatic connection	Flange/sub-base	[3]	-F	
	Metric thread M5	[4]	-M5	
	Push-in connectors 3 mm	[4]	-Q3	
	Push-in connectors 4 mm	[4]	-Q4	
	Push-in connectors 6 mm	[4]	-Q6	
Exhaust type	Ducted			
	Silencers	[1] [5]	U	
Pilot exhaust	Unducted			
Nominal operating voltage [V DC]	24		-1	
	5		-4	
	12		-5	
Electrical connection	Horizontal plug		H2	
	Vertical plug		H3	
Display	Without			
	LED signal display	[7]	L	
Electrical accessories			+	+
Connecting cable	Without casing, 0.5 m		W1	
	Without casing, 1 m		W2	
	Without casing, 2.5 m		W3	
	Without casing, 5 m		W4	

[1] 10, D, U Not with valve type B, S

[2] D Not with nominal operating voltage 5 V DC, 12 V DC

[3] F Not with valve type L, S

[4] M5, Q3, Q4, Q6 Not with valve type B

[5] U Not with pneumatic connection F, M5

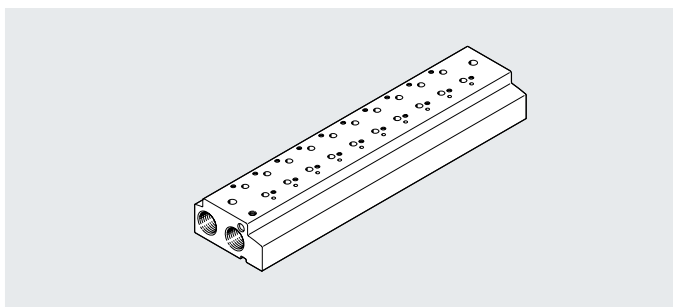
[7] L Not with nominal operating voltage 5 V DC, 12 V DC

## Datasheet – Manifold rail for semi in-line valves

**Manifold rail VABM-C7  
for semi in-line valves**

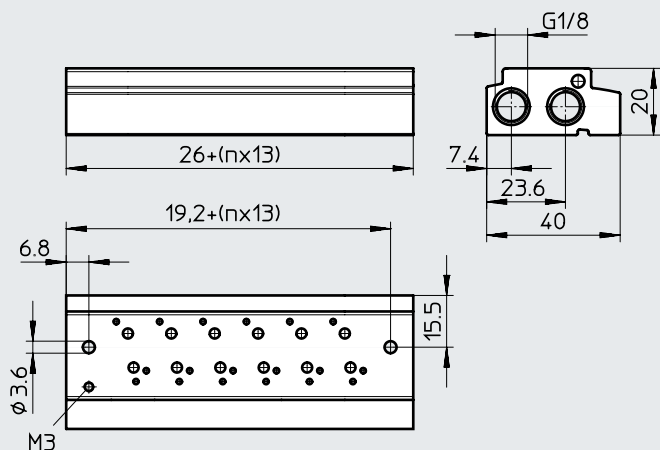
Material:  
Wrought aluminium alloy

Note on materials:  
RoHS-compliant



### Dimensions

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



n Number of valve positions

### Ordering data – Manifold rails for semi in-line valves

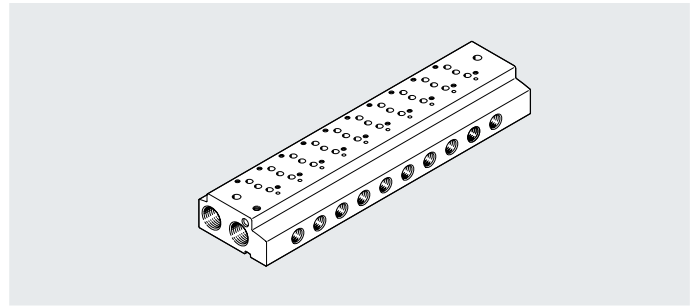
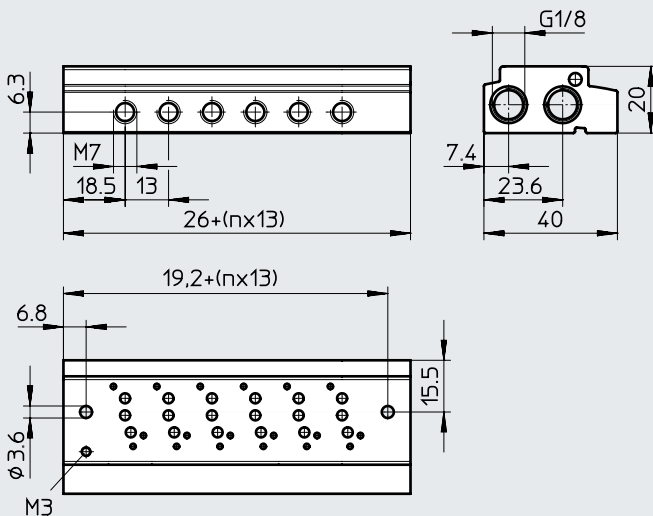
Valve positions n	Weight [g]	Corrosion resistance class CRC <sup>1)</sup>	Part no.	Type
<b>For valves with internal pilot air</b>				
2	84	2	552652	VABM-C7-12P-G18-2
3	105		552653	VABM-C7-12P-G18-3
4	126		552654	VABM-C7-12P-G18-4
5	147		552655	VABM-C7-12P-G18-5
6	168		552656	VABM-C7-12P-G18-6
7	189		552657	VABM-C7-12P-G18-7
8	210		552658	VABM-C7-12P-G18-8
9	231		552659	VABM-C7-12P-G18-9
10	252		552660	VABM-C7-12P-G18-10
<b>For valves with external pilot air</b>				
2	84	2	552661	VABM-C7-12G-G18-2
3	105		552662	VABM-C7-12G-G18-3
4	126		552663	VABM-C7-12G-G18-4
5	147		552664	VABM-C7-12G-G18-5
6	168		552665	VABM-C7-12G-G18-6
7	189		552666	VABM-C7-12G-G18-7
8	210		552667	VABM-C7-12G-G18-8
9	231		552668	VABM-C7-12G-G18-9
10	252		552669	VABM-C7-12G-G18-10

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.



## Datasheet – Manifold rail for sub-base valves

**Manifold rail VABM-C7  
for sub-base valves**Material:  
Wrought aluminium alloyNote on materials:  
RoHS-compliant**Dimensions**Download CAD data → [www.festo.com](http://www.festo.com)

n Number of valve positions

**Ordering data – Manifold rails for sub-base valves**

Valve positions	Weight [g]	Corrosion resistance class CRC <sup>1)</sup>	Part no.	Type
<b>For valves with internal pilot air</b>				
2	82	2	549639	VABM-C7-12M-G18-2
3	102		549640	VABM-C7-12M-G18-3
4	122		549641	VABM-C7-12M-G18-4
5	142		549642	VABM-C7-12M-G18-5
6	162		549643	VABM-C7-12M-G18-6
7	182		549644	VABM-C7-12M-G18-7
8	202		549645	VABM-C7-12M-G18-8
9	222		549646	VABM-C7-12M-G18-9
10	242		549647	VABM-C7-12M-G18-10
<b>For valves with external pilot air</b>				
2	82	2	549648	VABM-C7-12W-G18-2
3	102		549649	VABM-C7-12W-G18-3
4	122		549650	VABM-C7-12W-G18-4
5	142		549651	VABM-C7-12W-G18-5
6	162		549652	VABM-C7-12W-G18-6
7	182		549653	VABM-C7-12W-G18-7
8	202		549654	VABM-C7-12W-G18-8
9	222		549655	VABM-C7-12W-G18-9
10	242		549656	VABM-C7-12W-G18-10

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

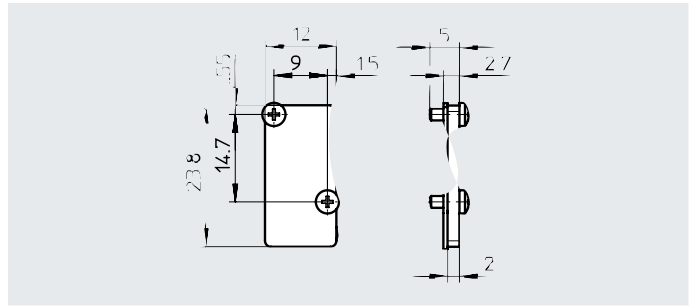
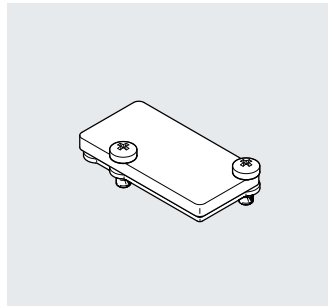
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

## Accessories

### Cover plate VABB-C7




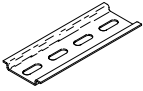
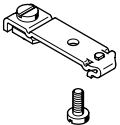
Material:  
Cover plate: Steel  
Seal: NBR

Note on materials:  
RoHS-compliant

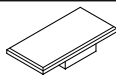
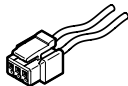


Ordering data				
	Weight [g]	Corrosion resistance class CRC <sup>1)</sup>	Part no.	Type
Cover plate for vacant positions	6	2	552651	VABB-C7-12-W

1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Ordering data				
Designation			Part no.	Type
<b>Silencer</b>				
	Connecting thread G1/8	Polymer version	2307	U-1/8
		Metal design	6841	U-1/8-B
<b>Blanking plug</b>				
	G1/8 thread	10 pieces	3568	B-1/8
<b>Push-in fitting</b>				
	Connecting thread G1/8 for tubing O.D.	6 mm (10 pieces)	153002	QS-1/8-6
		8 mm (10 pieces)	153004	QS-1/8-8
	Connecting thread M3 for tubing O.D.	3 mm (10 pieces)	153312	QSM-M3-3-I
		4 mm (10 pieces)	153315	QSM-M5-4-I
	Connecting thread M5 for tubing O.D.	6 mm (10 pieces)	153317	QSM-M5-6-I
		4 mm (10 pieces)	153319	QSM-M7-4-I
Connecting thread M7 for tubing O.D.	6 mm (10 pieces)	153321	QSM-M7-6-I	
<b>H-rail</b>				
			35430	NRH-35-2000
<b>Mounting</b>				
	For H-rail		527392	CPASC1-BG-NRH

## Accessories

Ordering data		Part no.	Type
Designation			
<b>Inscription label</b>			
	For identifying the valve positions	80 pieces	<b>197259</b> <b>MH-BZ-80X</b>
<b>Plug socket with cable</b>			
	For 1 coil, 2-wire	0.5 m	<b>566654</b> <b>NEBV-H1G2-KN-0.5-N-LE2</b>
		1 m	<b>566655</b> <b>NEBV-H1G2-KN-1-N-LE2</b>
		2.5 m	<b>566656</b> <b>NEBV-H1G2-KN-2.5-N-LE2</b>
		5 m	<b>566657</b> <b>NEBV-H1G2-KN-5-N-LE2</b>