

Valve series VOVG

FESTO



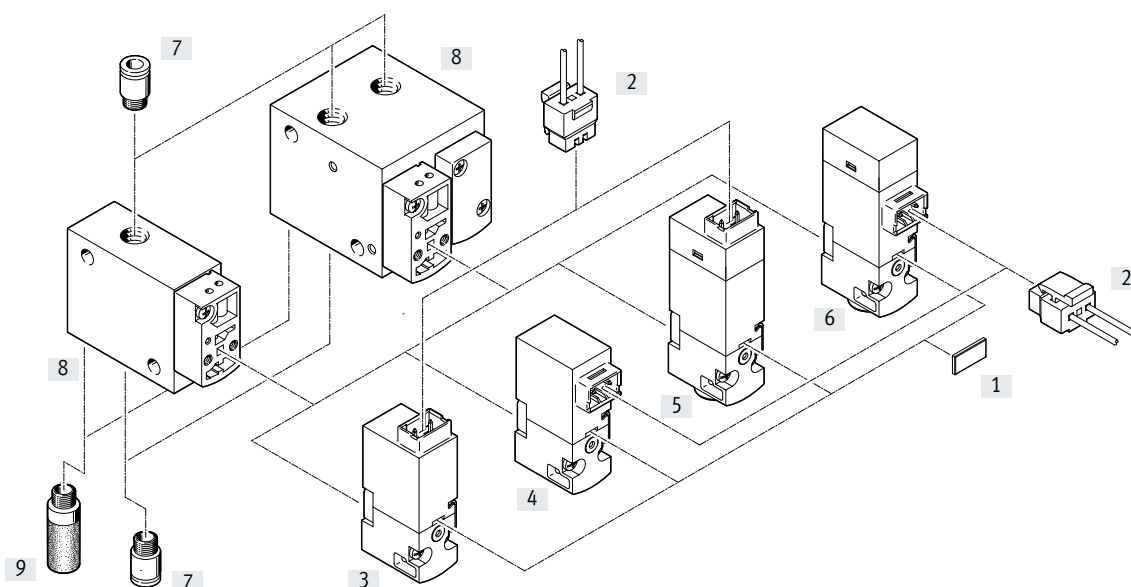
Product range overview

| 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 V DC | 12 V DC | 24 V DC | |
|----------------------------------------|-------------------|--------|---------|-------------------------------------|----------------------------------|
| 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

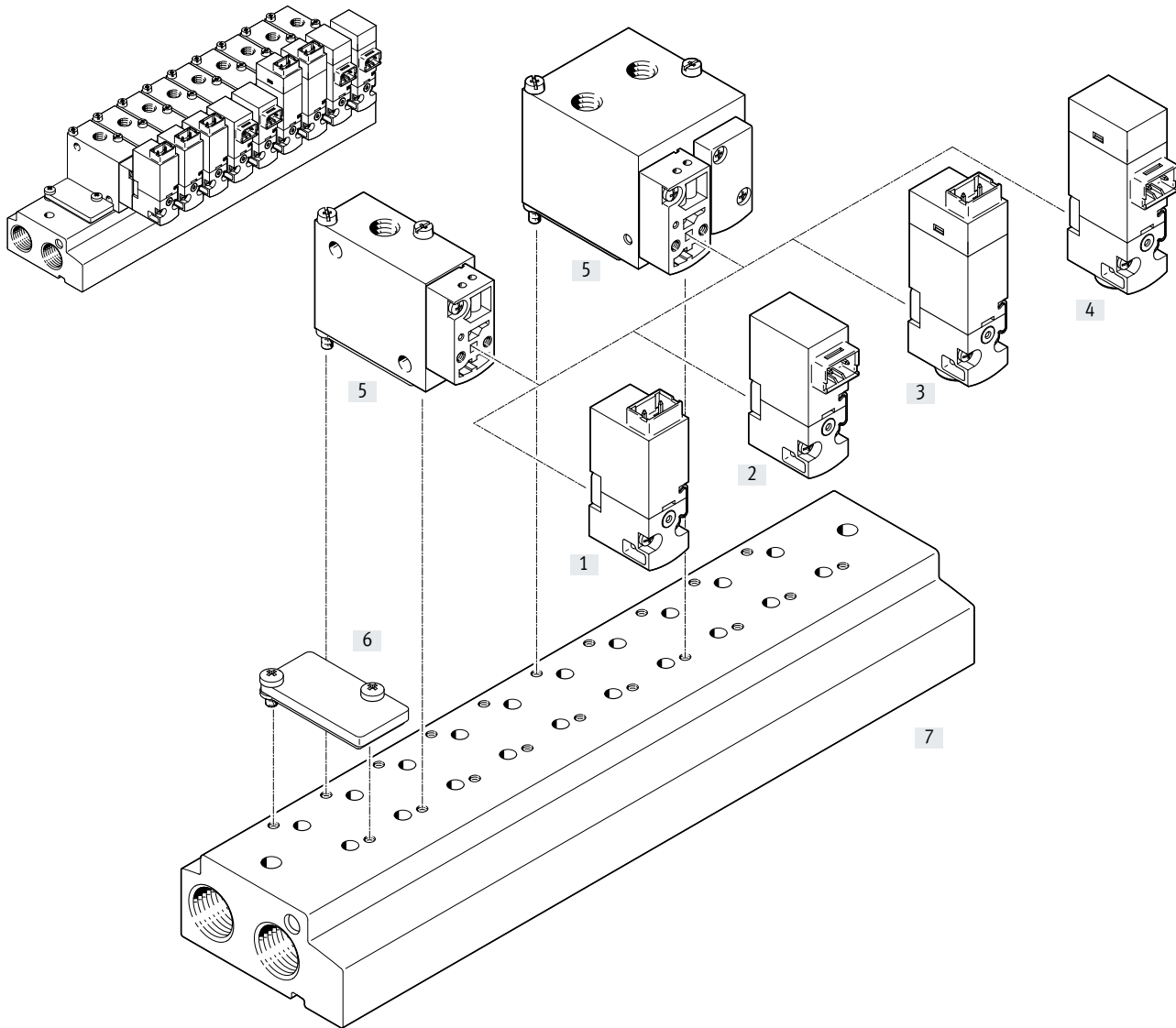


Individual components

| | Type | Brief description | → Page/ Internet |
|-----|-----------|-----------------------------------------|---------------------|
| [1] | MH-BZ-80X | For identifying the solenoid valves | 19 |
| [2] | NEBV | For solenoid coils | 19 |
| [3] | – | With vertical plug connection | 8 |
| [4] | – | With horizontal plug connection | |
| [5] | – | With vertical plug connection and LED | |
| [6] | – | With horizontal plug connection and LED | |
| [7] | QS/QSM | For standard O.D. tubing | 18 |
| [8] | – | Modules of the solenoid valves VOVG | 8 |
| [9] | U | For mounting in exhaust ports | 18 |

System overview

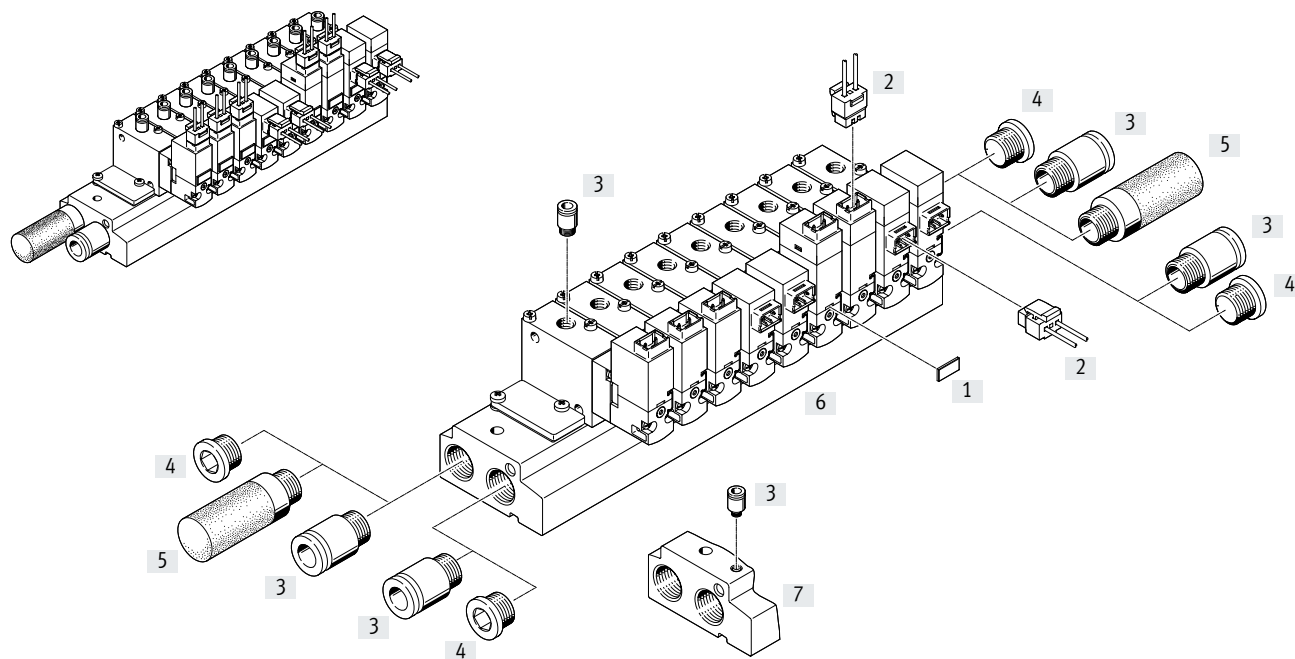
Manifold assembly – Semi in-line valves



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

Peripherals overview

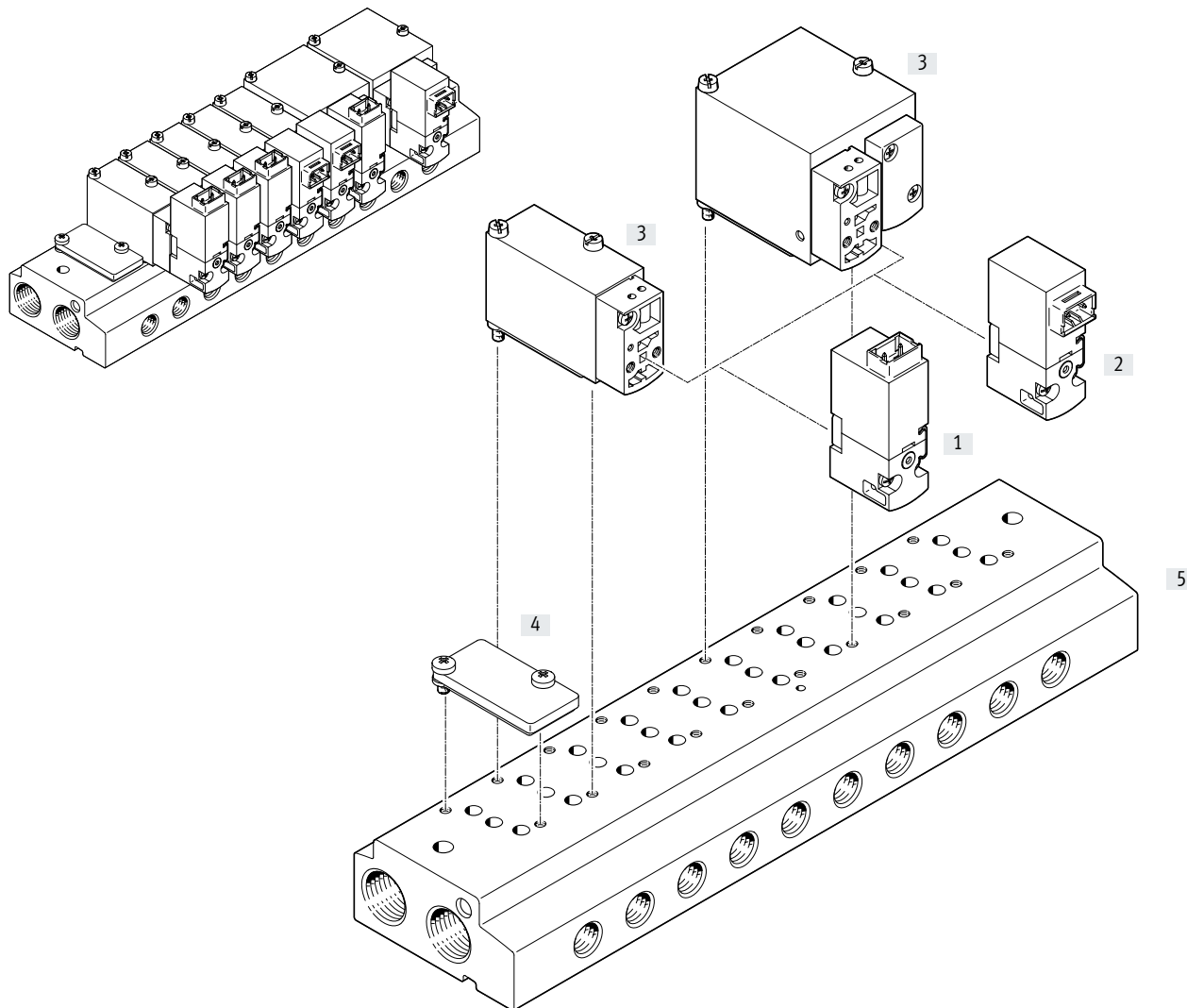
Manifold assembly – Semi in-line valves with accessories



| 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] | Silencer | U | For mounting 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

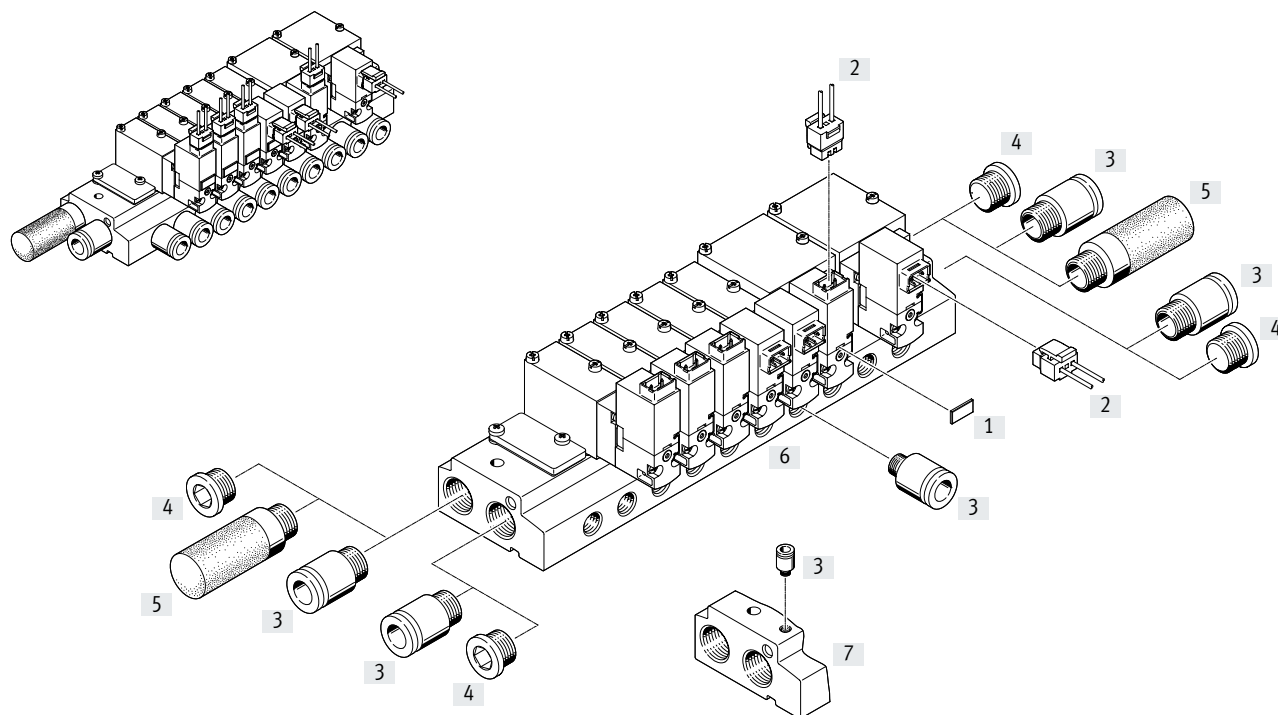


Individual components

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

Peripherals overview

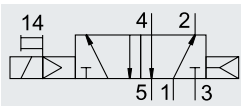
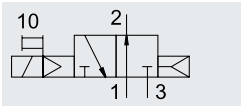
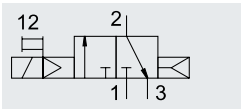
Manifold assembly – Sub-base valves with accessories





| 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] | Silencer | U | For mounting 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 |


Data sheet

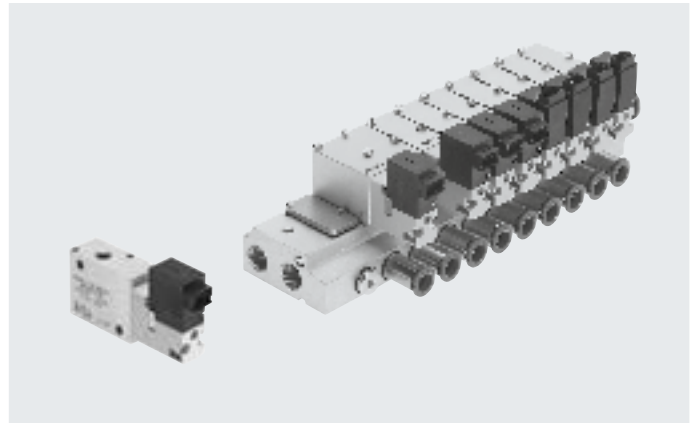
Function



-  - Voltage
5, 12, 24 V DC

-  - Pressure
-0.9 ... +8 bar

-  - Temperature range
-5 ... +50°C



General technical data

| Design | In-line valve | | Semi in-line valve | | Sub-base valve | |
|----------------------------|-------------------------|-----|------------------------------|-----|----------------|-----|
| | 3/2 | 5/2 | 3/2 | 5/2 | 3/2 | 5/2 |
| Valve function | Monostable | | | | | |
| Stable position | Piston spool | | | | | |
| Design | Positive overlap | | | | | |
| Overlap | Soft | | | | | |
| Sealing principle | Electrical | | | | | |
| Actuation type | Pneumatic spring | | | | | |
| Reset method | Piloted | | | | | |
| Type of control | Non-reversible | | | | | |
| Flow direction | Can be throttled | | | | | |
| Exhaust air function | Non-detenting/detenting | | Non-detenting | | | |
| Manual override | With through-hole | | On sub-base via through-hole | | | |
| Type of mounting | Any | | | | | |
| Mounting position | 2.1 | | | | | |
| Nominal size | [l/min] | | | | | |
| Standard nominal flow rate | 200 | | 180 | | 180 | |
| Width | [mm] | | 12 | | 25 | |
| Switching time on/off | 1 0/12 | | 25 | | 12 | |
| Pneumatic connection | [ms] | | 1 2/10 | | 1 5/18 | |
| | 1 2/10 | | 1 5/18 | | 1 2/10 | |
| | 1 5/18 | | 1 5/18 | | | |
| | M5 | | Sub-base | | | |

Operating and environmental conditions

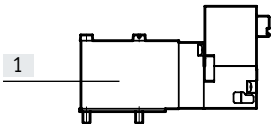
| | | | | | | |
|---------------------------------------------------|--------------------------------------------------------------------------------------------|------------|--|--|--|--|
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] | | | | | |
| Note on the operating/pilot medium | Lubricated operation possible (in which case lubricated operation will always be required) | | | | | |
| Operating pressure with internal pilot air supply | [bar] | 2 ... 8 | | | | |
| Operating pressure with external pilot air supply | [bar] | -0.9 ... 8 | | | | |
| Pilot pressure ¹⁾ | [bar] | 3 ... 8 | | | | |
| Ambient temperature | [°C] | -5 ... +50 | | | | |
| Temperature of medium | [°C] | -5 ... +50 | | | | |

1) With vacuum (at port 3) and ejector pulse (at port 1), the minimum pressure (at port 12) is 4 bar.

Data sheet

| Electrical data | | |
|----------------------------------|--------|----------------------------|
| Operating voltage | [V DC] | 5 ±10%, 12 ±10% or 24 ±10% |
| Connection type | | Plug connection |
| Power consumption | [W] | 1 |
| Duty cycle | [%] | 100 |
| Degree of protection to EN 60529 | | |
| With plug socket with cable NEBV | | IP40 |

Materials



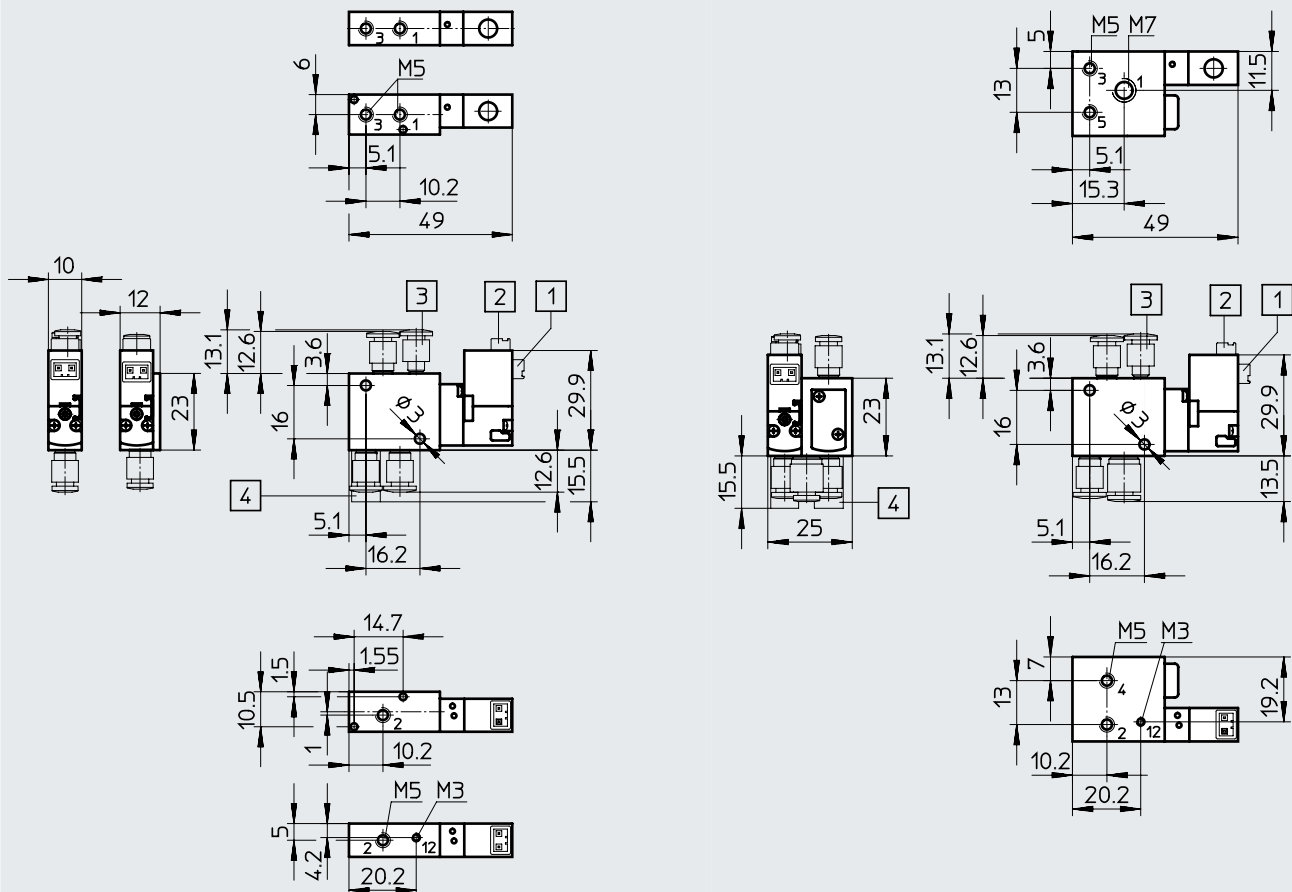
| | | |
|-------------------|---------|----------------|
| [1] | Housing | Aluminium |
| - | Seals | FPM, NBR, HNBR |
| Note on materials | | RoHS-compliant |

Dimensions – Valve

3/2-way in-line valve

5/2-way in-line valve

Download CAD data → www.festo.com



[1] Electrical connection at rear

[2] Electrical connection at top

[3] Pilot air supply

[4] Silencer

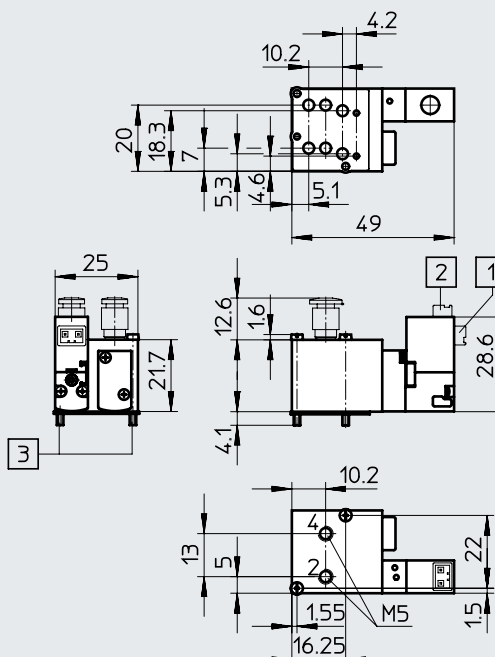
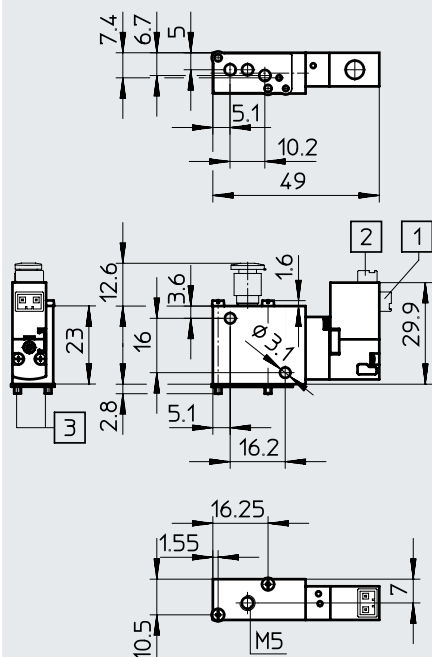
Data sheet

Dimensions – Valve

Download CAD data → www.festo.com

3/2-way semi in-line valve

5/2-way semi in-line valve



[1] Electrical connection at rear

[2] Electrical connection at top

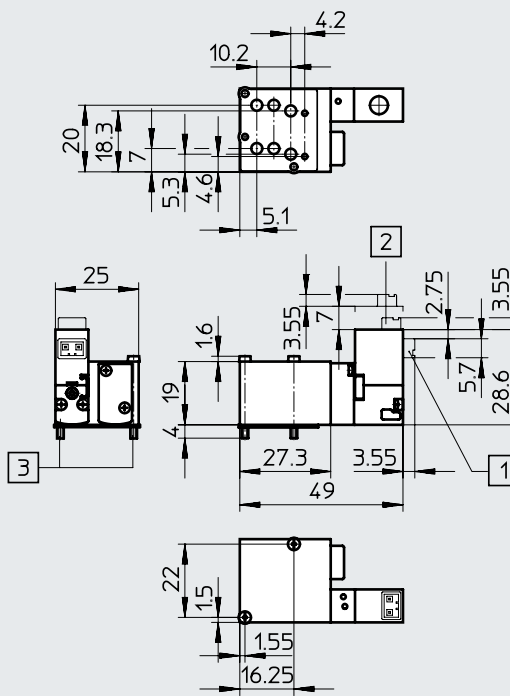
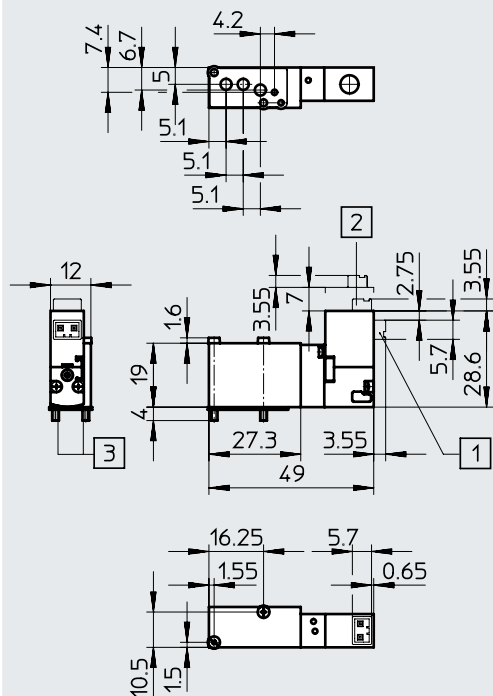
[3] Retaining screws M2x25

Dimensions – Valve

Download CAD data → www.festo.com

3/2-way sub-base valve

5/2-way sub-base valve



[1] Electrical connection at rear

[2] Electrical connection at top

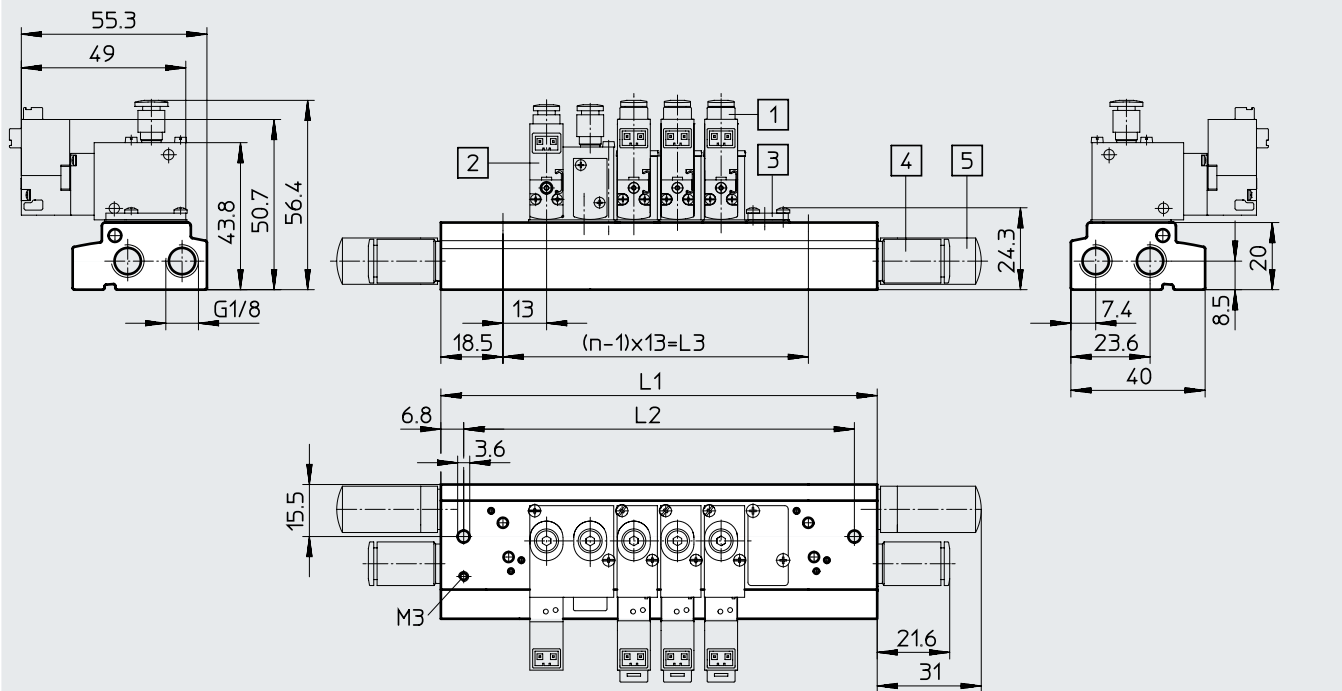
[3] Retaining screws M2x23

Data sheet

Dimensions – Manifold assembly

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Semi in-line valve



[1] 3/2-way semi in-line valve
 [2] 5/2-way semi in-line valve
 occupying two valve positions

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

[4] Push-in fitting

[5] Silencer
 n Number of valve positions

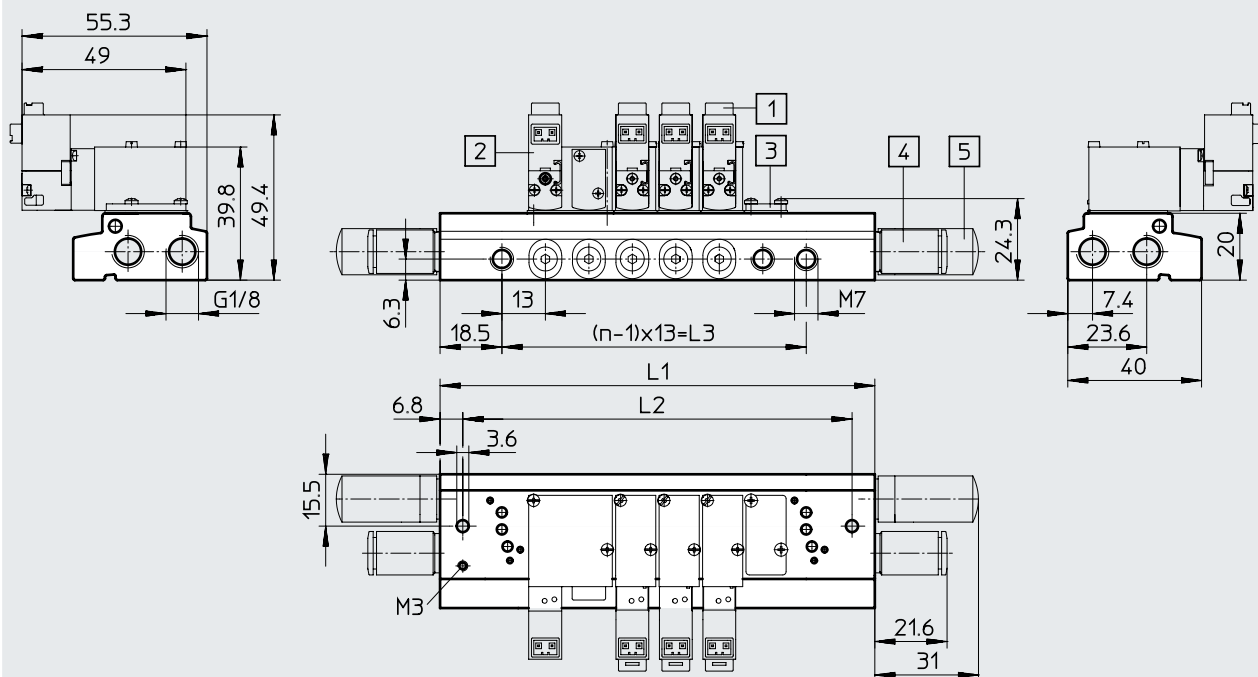
| Number of valve positions n | L1 | L2(-0/+0.4) | L3 |
|-----------------------------|-----|-------------|-----|
| 2 | 52 | 38.4 | 13 |
| 3 | 65 | 51.4 | 26 |
| 4 | 78 | 64.4 | 39 |
| 5 | 91 | 77.4 | 52 |
| 6 | 104 | 90.4 | 65 |
| 7 | 117 | 103.4 | 78 |
| 8 | 130 | 116.4 | 91 |
| 9 | 143 | 129.4 | 104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

Data sheet

Dimensions – Manifold assembly

Download CAD data → www.festo.com

Sub-base valve



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

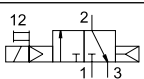
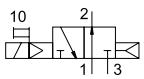
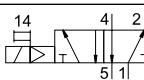
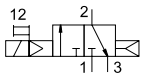
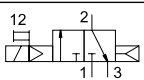
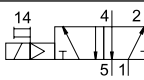
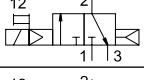
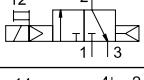
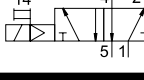
- [3] Cover plate VABB-C7-12-W

- [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 |

Data sheet

| Ordering data | | | | | | | |
|-------------------------------------------------------------------------------------|--------------------------|-----------------|----------------|--------------------------------|-----------------------|----------|-------------------------|
| Circuit symbol | Function | Normal position | Plug direction | Pilot air supply ¹⁾ | Voltage ¹⁾ | Part no. | Type |
| In-line valve | | | | | | | |
|  | 3/2-way, single solenoid | Closed | Horizontal | Internal | 24 V DC | 560697 | VOVG-L10-M32C-AH-M5-1H2 |
| | | | Vertical | | | 560698 | VOVG-L10-M32C-AH-M5-1H3 |
|  | | Open | Horizontal | | | 560699 | VOVG-L10-M32U-AH-M5-1H2 |
| | | | Vertical | | | 560700 | VOVG-L10-M32U-AH-M5-1H3 |
|  | 5/2-way, single solenoid | - | Horizontal | | | 560701 | VOVG-L12-M52Q-AH-M5-1H2 |
| | | | Vertical | | | 560702 | VOVG-L12-M52Q-AH-M5-1H3 |
| Semi in-line valve | | | | | | | |
|  | 3/2-way, single solenoid | Closed | Horizontal | Internal | 24 V DC | 560703 | VOVG-S12-M32C-AH-M5-1H2 |
| | | | Vertical | | | 560704 | VOVG-S12-M32C-AH-M5-1H3 |
|  | | Open | Horizontal | | | 560705 | VOVG-S12-M32U-AH-M5-1H2 |
| | | | Vertical | | | 560706 | VOVG-S12-M32U-AH-M5-1H3 |
|  | 5/2-way, single solenoid | - | Horizontal | | | 560707 | VOVG-S12-M52Q-AH-M5-1H2 |
| | | | Vertical | | | 560708 | VOVG-L12-M52Q-AH-M5-1H3 |
| Sub-base valve | | | | | | | |
|  | 3/2-way, single solenoid | Closed | Horizontal | Internal | 24 V DC | 560709 | VOVG-B12-M32C-AH-F-1H2 |
| | | | Vertical | | | 560710 | VOVG-B12-M32C-AH-F-1H3 |
|  | | Open | Horizontal | | | 560711 | VOVG-B12-M32U-AH-F-1H2 |
| | | | Vertical | | | 560712 | VOVG-B12-M32U-AH-F-1H3 |
|  | 5/2-way, single solenoid | - | Horizontal | | | 560713 | VOVG-B12-M52Q-AH-F-1H2 |
| | | | Vertical | | | 560714 | VOVG-B12-M52Q-AH-F-1H3 |

1) For other variants see modular system

Ordering data – Modular product system

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

[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 | | Conditions | 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 | |
| Exhausting | Ducted | | | |
| | Silencer | [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

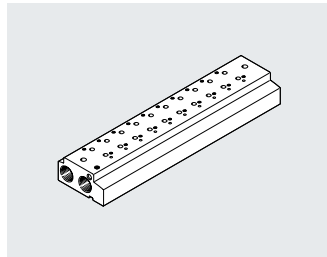
[7] L Not with nominal operating voltage 5 V DC, 12 V DC

Data sheet – Manifold rail

Manifold rail VABM-C7 For semi in-line valves

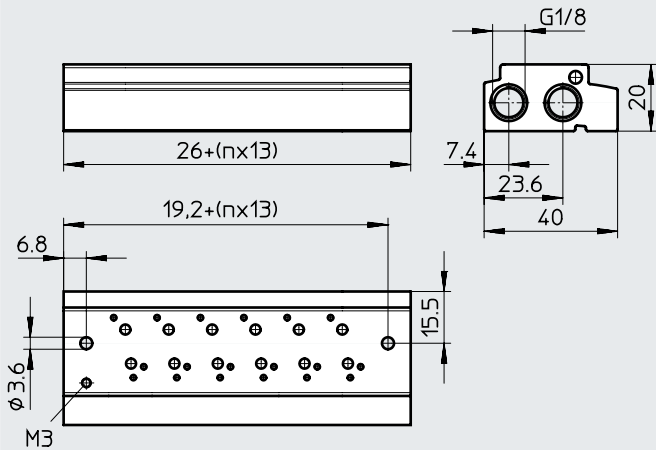
Material:
Wrought aluminium alloy

Note on materials:
RoHS-compliant



Dimensions – Manifold rails for semi in-line valves

Download CAD data → www.festo.com



n Number of valve positions

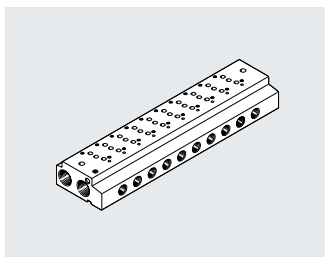
Ordering data – Manifold rails for semi in-line valves

| Valve positions n | Weight [g] | CRC | Part no. | Type |
|-------------------------------------------|------------|-----------------|----------|--------------------|
| For valves with internal pilot air | | | | |
| 2 | 84 | 2 ¹⁾ | 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 |
| For valves with external pilot air | | | | |
| 2 | 84 | 2 ¹⁾ | 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 |

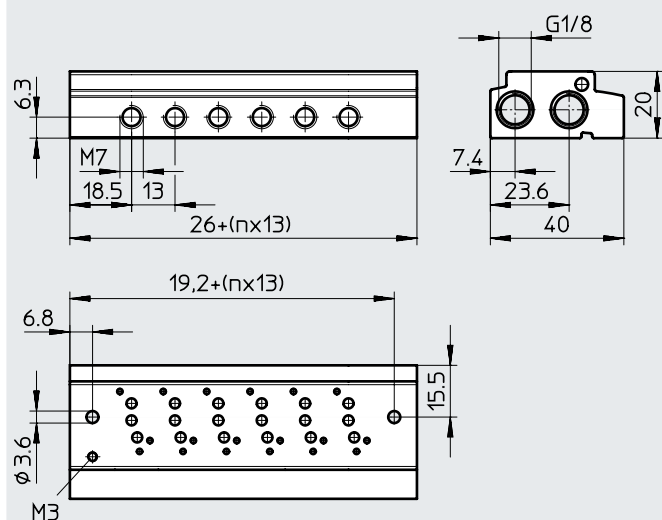
1) Corrosion resistance class CRC 2 to Festo standard FN 940070

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.

Data sheet – Manifold rail

Manifold rail VABM-C7
for sub-base valvesMaterial:
Wrought aluminium alloyNote on materials:
RoHS-compliant

Dimensions – Manifold rails for sub-base valves

Download CAD data → www.festo.com

n Number of valve positions

Ordering data – Manifold rails for sub-base valves

| Valve positions | Weight [g] | CRC | Part no. | Type |
|-------------------------------------------|---------------|-----------------|----------|--------------------|
| For valves with internal pilot air | | | | |
| 2 | 82 | 2 ¹⁾ | 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 |
| For valves with external pilot air | | | | |
| 2 | 82 | 2 ¹⁾ | 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

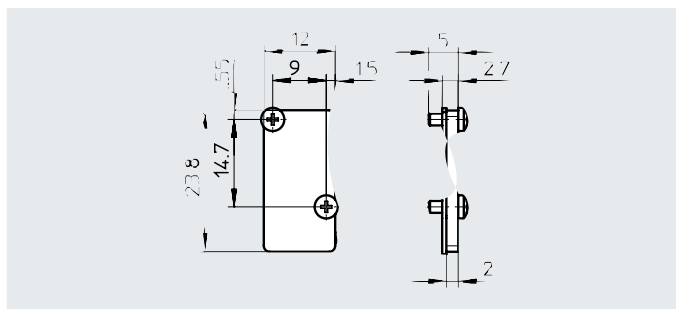
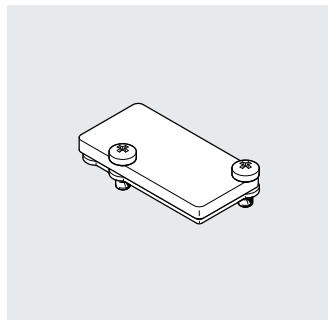
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Accessories

Cover plate VABB-C7

Material:
Cover plate: Steel
Seal: NBR

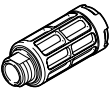

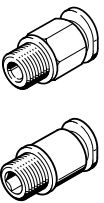
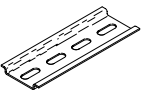
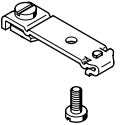
Note on materials:
RoHS-compliant



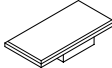
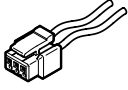
| Ordering data | | Weight [g] | CRC | Part no. | Type |
|----------------------------------|---|-----------------|-----|----------|--------------|
| Cover plate for vacant positions | 6 | 2 ¹⁾ | | 552651 | VABB-C7-12-W |

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 | | Part no. | Type |
|-------------------------------------------------------------------------------------|----------------------------------------|-------------------|-------------------|
| Silencer | | | |
|  | Connecting thread G1/8 | Polymer version | 2307 U-1/8 |
| | | Metal design | 6841 U-1/8-B |
| Blanking plug | | | |
|  | Thread G1/8 | 10 pieces | 3568 B-1/8 |
| Push-in fitting | | | |
|  | 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) | 153313 QSM-M5-3-I |
| | | 6 mm (10 pieces) | 153315 QSM-M5-4-I |
| | | 6 mm (10 pieces) | 153317 QSM-M5-6-I |
| Connecting thread M7 for tubing O.D. | 4 mm (10 pieces) | 153319 QSM-M7-4-I | |
| | 6 mm (10 pieces) | 153321 QSM-M7-6-I | |
| H-rail | | | |
|  | | 35430 | NRH-35-2000 |
| Mounting | | | |
|  | For H-rail | 527392 | CPASC1-BG-NRH |

Accessories

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