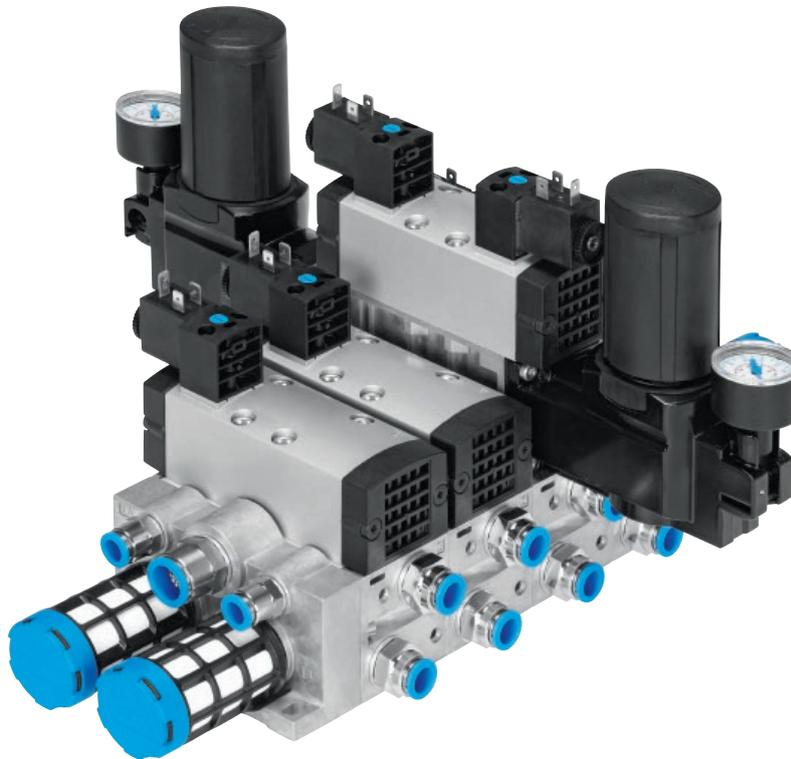


Standards-based valves to ISO 5599-1

FESTO



Key features



Innovative

- High-performance valves in a sturdy metal housing
- Individual electrical connection via square plug sockets or centrally for each valve via round plug sockets
- Valve replacement under pressure possible using vertical pressure shut-off plate
- Reverse operation
- Vacuum operation

Versatile

- Modular system offering a range of configuration options
- Conversions and extensions are possible at any time
- Possible to integrate innovative function modules
 - Pressure regulator plate
 - Throttle plate
 - Vertical pressure shut-off plate
 - Vertical supply plate
- Vertical supply plates permit a flexible air supply and variable pressure zones
- Wide range of valve functions
- Extensive operating voltage range from 12 V DC to 230 V AC

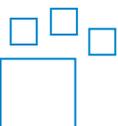
Reliable

- Sturdy and durable metal components
 - Valves
 - Horizontally linked sub-bases
 - Vertically stacked sub-bases
- Fast troubleshooting thanks to LED in the plug socket or illuminating seal
- LED integrated in the valve with the round plug variant
- Reliable servicing thanks to valves that can be replaced quickly and easily
- Manual override
- Durable thanks to tried-and-tested piston spool valves

Easy to install

- Plug-in pressure gauges on the pressure regulator plate

Ordering data – Product options



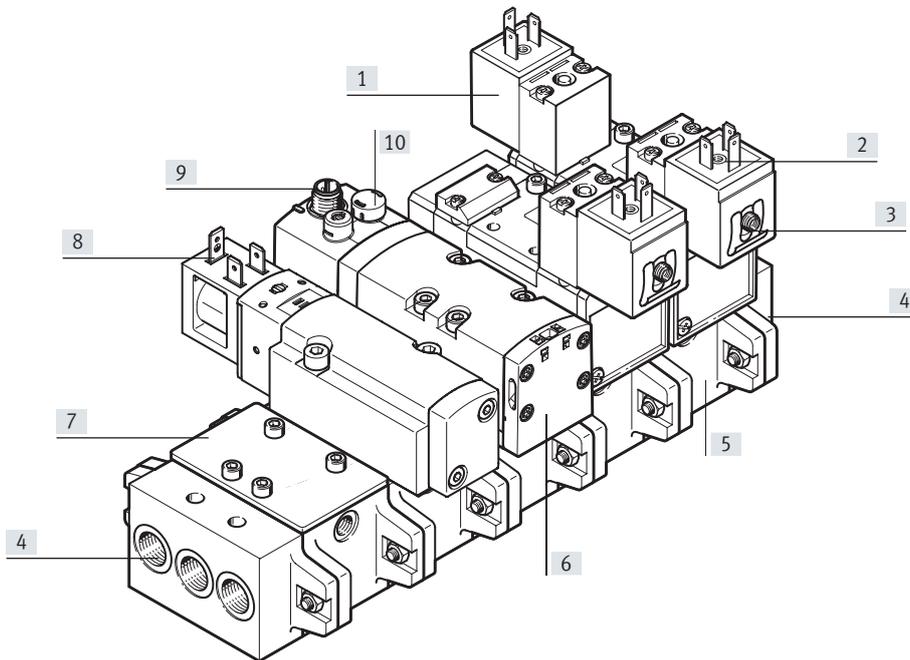
Configurable product
This product and all its product options can be ordered using the configurator.

The configurator can be found at
→ www.festo.com/catalogue/...
Enter the part number or the type.

| | |
|----------|------------|
| Part no. | Type |
| 8033845 | VSVA-B.-F. |

Key features

Simple valve manifold assembly



- [1] Pilot valve with hole pattern to ISO 15218
- [2] Various voltages
- [3] Armature tube for plug-on solenoid coils
- [4] End plate
- [5] Manifold sub-base
- [6] Various valve functions
- [7] Cover plate for vacant/expansion position
- [8] Electrical connection type B to industry standard (11 mm)
- [9] 3-pin round plug
- [10] Manual override

Equipment options

2x 2/2-way valve, single solenoid

- Normally closed
- Normally closed, vacuum operation possible at port 3 and 5

Operation with external pilot air supply

- For vacuum applications
- For working pressures lower than 3 bar
- For significant pressure fluctuations in the power section. The power section and the pneumatic control section are isolated
- For heavily lubricated air in the power section
- For manifolds where the pressure zones are created via ducts 3 and 5 (not possible with 2x 3/2-way valves)
- For manifolds or pressure zones that are equipped with reversible 2x 3/2-way valves (valves on request)

2x 3/2-way valve, single solenoid

- Normally open
- Normally closed
- 1x normally open, 1x normally closed
- Reverse operation possible

Operation with internal pilot air supply

- For small pressure fluctuations in the power section
- For using pressure regulator plates in a vertical stacking design, also in reverse operation
- As a low-cost solution

5/2-way valve

- Single solenoid, mechanical or pneumatic spring return
- Double solenoid
- Double solenoid, with dominant signal at port 14

Reverse operation with compressed air supply via ducts 3 and 5

- Pressure zone separation via ducts 3 and 5
 - Example: duct 3 vacuum, duct 5 ejector pulse
 - Example: high pressure in duct 3 for advancing the piston rod of a double-acting cylinder. Low pressure in duct 5 for retracting the piston rod with low energy consumption
- 2x 3/2-way valves used as 5/4-way valve with controllable overlap and pressure zone separation with the reversible variant

5/3-way valve

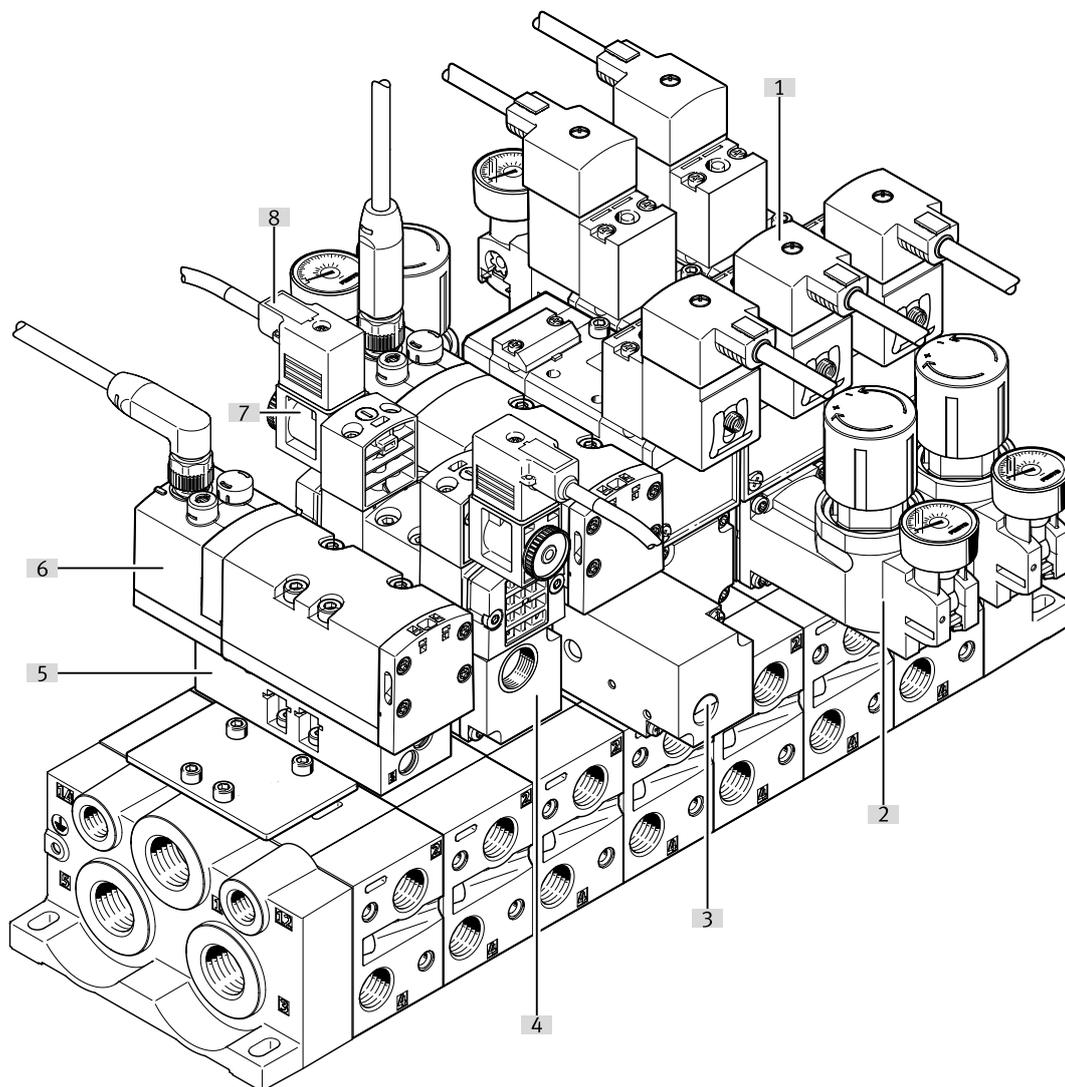
- Mid-position pressurised
- Mid-position closed
- Mid-position exhausted

Reverse operation with a pressure regulator plate, compressed air supply via duct 1

- Reversible pressure regulator combined with a reversible 2x 3/2-way valve regulates outputs 2 and 4
 - AB regulator for each of outputs 2 and 4
 - A regulator for output 4
 - B regulator for output 2
- Reversible pressure regulators are in the regulating position immediately after the power supply is switched on
 - Adjustment possible at any time
 - Dynamic response characteristics
 - Reduced regulator load because the supply pressure is maintained when the valve is switched
 - Not exhausted via the regulator

Key features

Valve manifold assembly with vertical stacking



- | | | | |
|--|---|---|--|
| [1] Solenoid valve with individual pilot valves and pneumatic interface to ISO 15218, can be connected using square plug sockets | [3] Vertical pressure shut-off plate for replacing solenoid valves during operation | [5] Throttle plate for adjusting the speed of the drive | [7] Valve with 8 mm armature tube |
| [2] Pressure regulator for adjusting the force of the actuated drive | [4] Vertical supply plate as separate compressed air supply for a valve | [6] Solenoid valve with central round plug | [8] Solenoid coil with connecting cable for valves with 8 mm armature tube |

Key features

Vertical stacking function

Pressure regulator

- Single variant to regulate the pressure in duct 4 or 2 or 1 at the valve
- Dual variant to regulate the pressure in ducts 4 and 2 individually
- As reversible version with ducts 1 and 3/5 swapped internally
- With pressure gauge connection

Throttle plate

- Designed with two throttle valves, at which the exhaust air flow rate at ducts 5 or 3 can be adjusted.
- The movement of the actuator is initiated via the manual override on the valve and the required speed is set via the throttle plate.

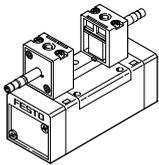
Vertical pressure shut-off plate

- This is equipped with a switch with which the compressed air supply can be shut off. As a result, components mounted on the vertical pressure shut-off plate (e.g. a valve) can be replaced without switching off the overall air supply.
- If the control chain has a redundant connection, the cycle can continue even in the case of a cyclical control system.

Vertical supply plate

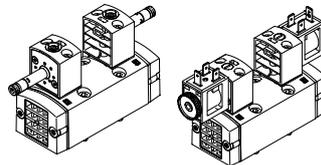
- As additional air supply for a valve
- Separates the valve from duct 1 of the manifold sub-base
- To supply an additional pressure zone

Valves with solenoid coil MSN1/MSF



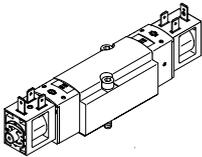
The directional control valve has a pilot control to ISO 15218. The solenoid coil plugged onto the armature tube can be chosen in different designs and operating voltages.

Valves with 8 mm armature tube



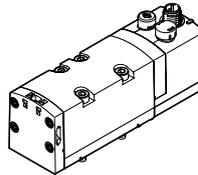
The directional control valve has a pilot control to ISO 15218 with 8 mm armature tube. The electrical connection is established via a standardised plug with plug pattern type A, B or C.

Valves with square plug type B to industry standard



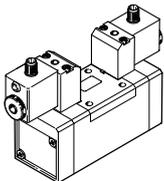
The electrical connection is established via a standardised plug with plug pattern type B, industry standard, 24 V DC.

Valves with central plug M12



The electrical connection is established via a standardised M12 plug, 24 V DC (EN 61076-2-101).

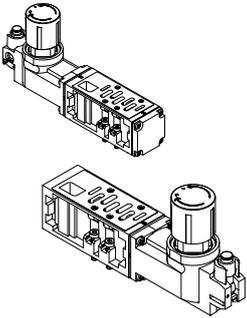
Valves with individual plug M12x1



The electrical connection is established via a standardised M12 plug, 24 V DC (2-pin or 4-pin to VDMA).

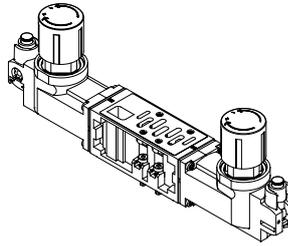
Key features

Pressure regulator with one regulated duct



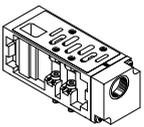
- For pressure regulation at the supply input duct 1. The set pressure is identical for ducts 2 and 4
- For pressure regulation at working port 4
 - The pressure regulator for reverse operation is supplied via duct 1 of the manifold sub-base and supplies duct 5 on the valve
 - The valve is exhausted via duct 1 to ducts 3 and 5 of the manifold sub-base
- For pressure regulation at working port 2
 - In reverse operation duct 3 is supplied

Pressure regulator with 2 regulated ducts



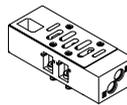
- For pressure regulation at working ports 4 and 2
- The pressure regulators for reverse operation are supplied via duct 1 of the manifold sub-base and supply ducts 5 and 3 on the valve
- The directional control valve is exhausted via duct 1 to ducts 3 and 5 of the manifold sub-base.

Vertical supply plate



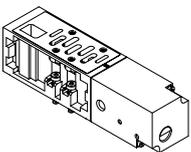
- As intermediate supply
 - For one valve
 - To supply an additional pressure zone
- Can be equipped with a valve

Throttle plate



- Exhaust air flow control valves in ducts 3 and 5
- The throttle plates act as supply-air flow control for pressure zones that are created via ducts 3 and 5

Vertical pressure shut-off plate



- A switch activated with a slotted screwdriver shuts off duct 1:
- The throttle plates, pressure regulators or valves positioned above it can be replaced
 - Other components of the control chain such as drives, for example, can be replaced once the valve has been exhausted

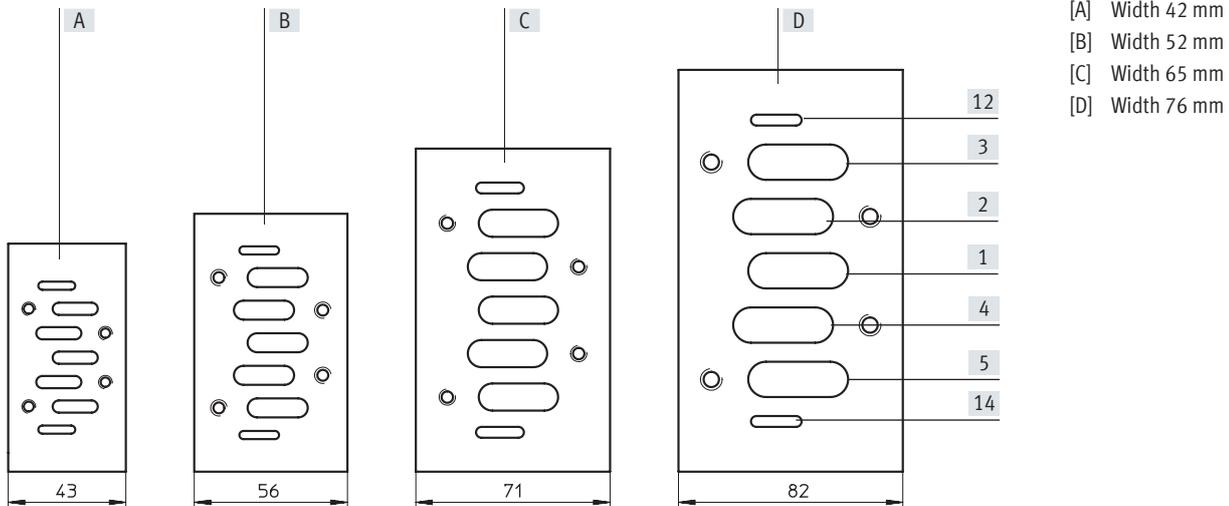
Pressure gauge



Plugs into the pressure regulators

Key features

Hole pattern on sub-base to ISO 5599-1



Sub-base port identifications

| Duct | Function | Description |
|------|-----------------|---|
| [14] | Control section | Pilot air supply for pilot valves 12 and 14 |
| [5] | Power section | Exhaust port |
| [4] | Power section | Working port |
| [1] | Power section | Working air supply port |
| [2] | Power section | Working port |
| [3] | Power section | Exhaust port |
| [12] | Control section | Exhaust port for pilot air supply |

Key features

Pilot air supply

The pneumatic supply ports are located on the right and left end plates and on the supply plates.

The ports differ for the following types of pilot air supply:

- Internal pilot air supply
- External pilot air supply

The port for the external pilot air supply is on the right and left end plates. Internal pilot air supply takes place in the valve itself and the ports for pilot air supply are not provided on the end plates.

Note

If a gradual pressure build-up is required in the system by using a soft-start valve, then external pilot air should be selected so that the pilot pressure is already applied in full at the point of switch-on.

Internal pilot air supply

Internal pilot air supply can be selected if the working pressure is between 2 and 10 bar, 3 and 10 bar, 2 and 16 bar or 3 and 16 bar, depending on the valve.

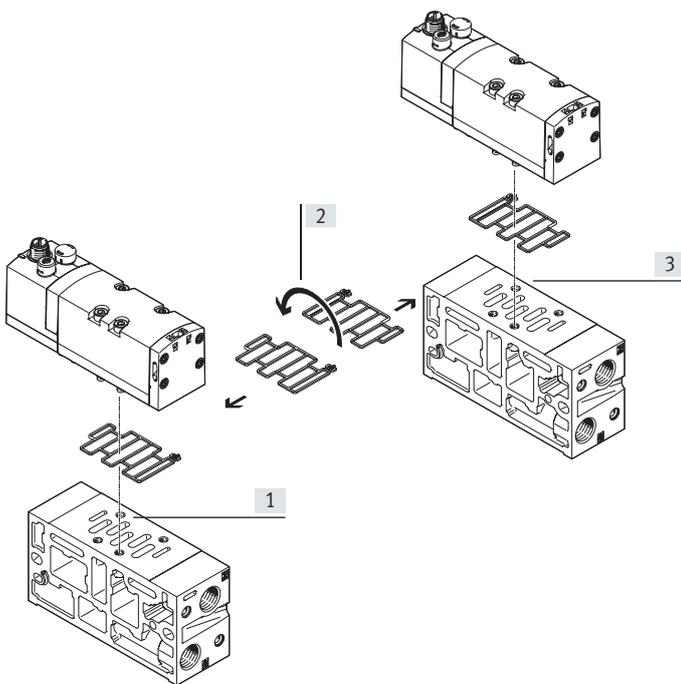
In this case the pilot air supply is branched from the compressed air supply 1 using an internal connection in the valve.

External pilot air supply

If the supply pressure is less than 2 or 3 bar, you must operate your valve manifold assembly VSVA using external pilot air supply.

The pilot air supply is then supplied via ports 12 and 14 on the end plates.

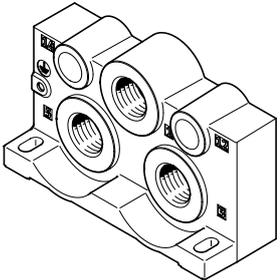
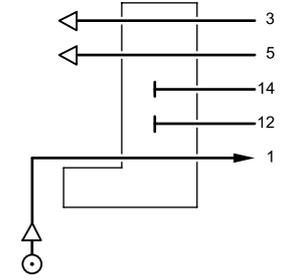
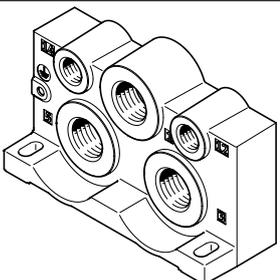
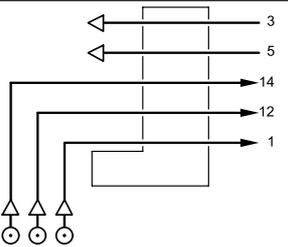
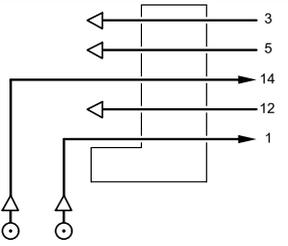
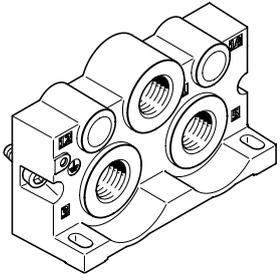
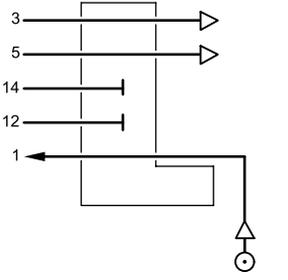
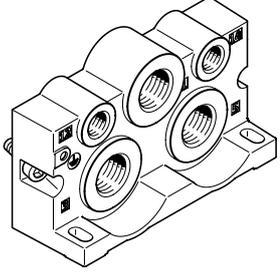
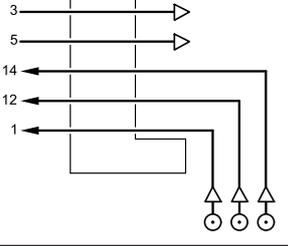
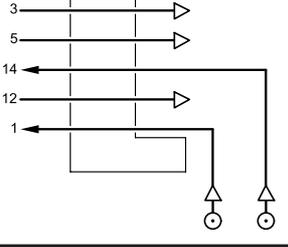
Using the seals with ducted/unducted pilot exhaust air



- [1] Ducted pilot air exhaust
- [2] Turning the seal 180°
- [3] Unducted pilot air exhaust (as supplied)

Valve manifold assemblies VSVA are delivered with unducted pilot air exhaust. By turning the seal between the valve and manifold block, exhaust air (pilot air) can be diverted into pilot duct 12 and can thus be ducted and silenced (see illustration).

Key features

| Pilot air supply via end plates | | Description |
|---|---|--|
| End plate left (graphical illustration) | | |
|  |  | <p>Internal pilot air supply</p> <ul style="list-style-type: none"> • Pilot air supply is branched within the valve from port 1 • Port 12 is not available • Port 14 is not available • Exhaust air via ports 3 and 5 • Pilot exhaust air via port 12 |
|  |  | <p>External pilot air supply</p> <ul style="list-style-type: none"> • Pilot air supply via ports 12 and 14 • Exhaust air via ports 3 and 5 • Unducted pilot exhaust air |
| |  | <p>External pilot air supply, ducted pilot exhaust air</p> <ul style="list-style-type: none"> • Pilot air supply via port 14 • Exhaust air via ports 3 and 5 • Pilot exhaust air via port 12 • For valves with central plug M12, 3-pin |
| End plate right (graphical representation) | | |
|  |  | <p>Internal pilot air supply</p> <ul style="list-style-type: none"> • Pilot air supply is branched within the valve from port 1 • Port 12 is not available • Port 14 is not available • Exhaust air via ports 3 and 5 • Pilot exhaust air via port 12 |
|  |  | <p>External pilot air supply</p> <ul style="list-style-type: none"> • Pilot air supply via ports 12 and 14 • Exhaust air via ports 3 and 5 • Unducted pilot exhaust air |
| |  | <p>External pilot air supply, ducted pilot exhaust air</p> <ul style="list-style-type: none"> • Pilot air supply via port 14 • Exhaust air via ports 3 and 5 • Pilot exhaust air via port 12 • For valves with central plug M12, 3-pin |

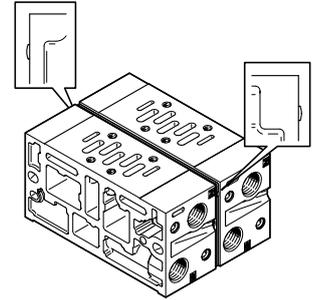
Key features

Creating pressure zones and separating exhaust air

The valve manifold assembly VSVA offers a number of options for creating pressure zones if different working pressures are required. Pressure zones are created by isolating the internal supply ducts between the manifold sub-bases by appropriate duct separation.

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

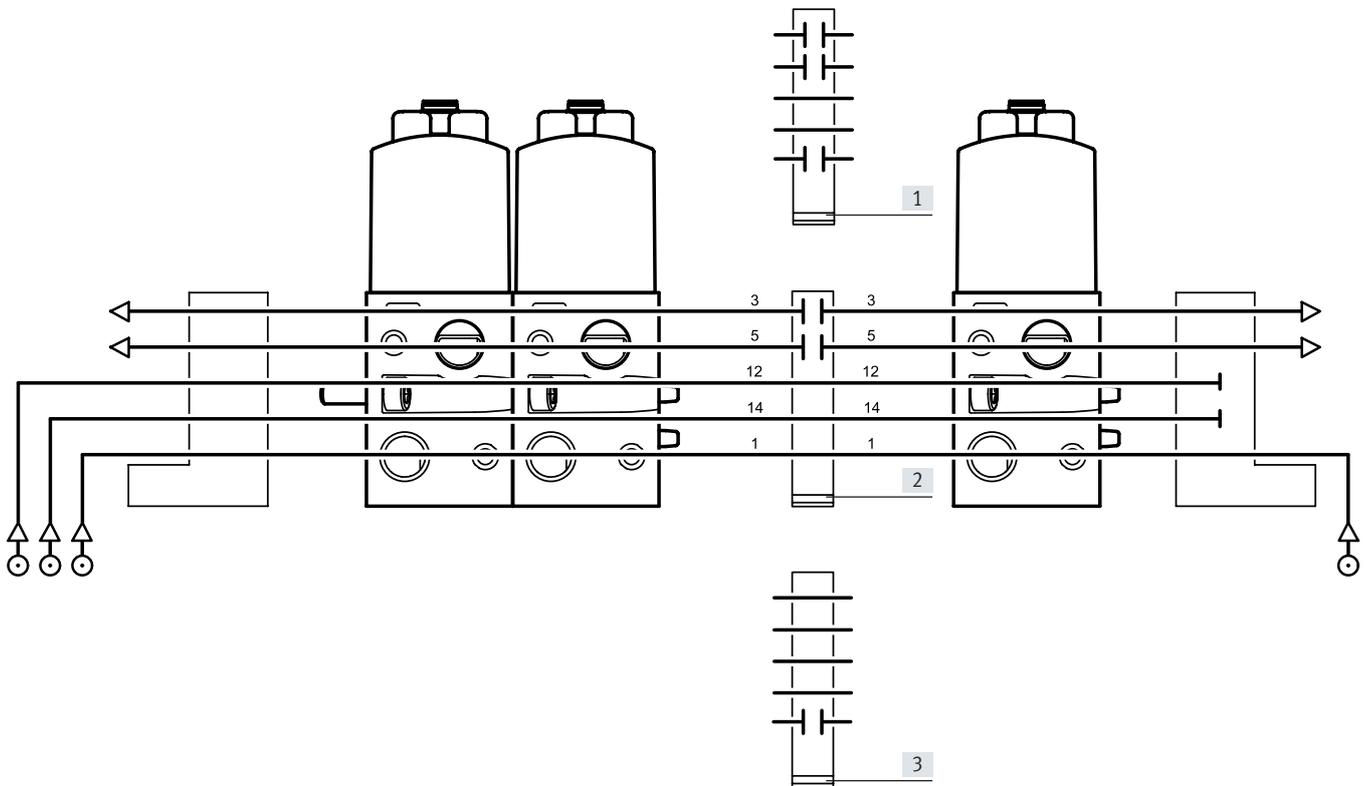
Duct separations are integrated exhausts as per your order. Duct separations can be distinguished by their coding, even when the valve terminal is assembled.



| Creating pressure zones | | | | Description |
|-------------------------|--------------|--------|---|--|
| Separating seal | | | | |
| Coding | Sample image | Coding | Basic representation | |
| | | | 3 ——— 5 ——— 12 ——— 14 ——— 1 ——— ——— | Duct 1 separated <ul style="list-style-type: none"> • Different supply pressure for each pressure zone • Supply pressure for each pressure zone can be switched off separately |
| | | | 3 ——— ——— 5 ——— ——— 12 ——— 14 ——— 1 ——— | Ducts 3 and 5 separated <ul style="list-style-type: none"> • The valves (for different pressure zones) do not affect each other via the exhaust ducts |
| | | | 3 ——— 5 ——— 12 ——— ——— 14 ——— ——— 1 ——— | Ducts 12 and 14 separated <ul style="list-style-type: none"> • Different pilot pressure for each supply zone • Operation with internal and external pilot air supply possible according to pressure zone • Pilot pressure for each pressure zone can be switched off separately |
| | | | 3 ——— ——— 5 ——— ——— 12 ——— 14 ——— 1 ——— ——— | Ducts 1, 3 and 5 separated <ul style="list-style-type: none"> • Different supply pressure for each pressure zone • The valves (for different pressure zones) do not affect each other via the exhaust ducts • Supply pressure for each pressure zone can be switched off separately |
| | | | 3 ——— ——— 5 ——— ——— 12 ——— ——— 14 ——— ——— 1 ——— ——— | Ducts 1, 3, 5, 12 and 14 separated <ul style="list-style-type: none"> • Different supply pressure for each pressure zone • Supply pressure for each pressure zone can be switched off separately • The valves (for different pressure zones) do not affect each other via the exhaust ducts • Different pilot pressure for each supply zone • Operation with internal and external pilot air supply possible according to pressure zone • Pilot pressure for each pressure zone can be switched off separately |

Key features

Examples: Creating pressure zones



[1] Pressure zone separation in ducts 1, 3 and 5. Pressure supply and exhausting via the respective end plate for each of the two pressure zones. Pilot air is supplied jointly via the left end plate.

Potential benefit:

- Two different supply pressures
- The valves do not affect each other via the exhaust ducts

[2] Pressure zone separation in ducts 3 and 5. The pressure for both pressure zones is supplied jointly via the end plates. Each of the two pressure zones is exhausted separately via the respective end plate. Pilot air is supplied jointly via the left end plate.

Potential benefit:

- The valves do not affect each other via the exhaust ducts

[3] Pressure zone separation in duct 1. Pressure supply via the respective end plate for each of the two pressure zones. Both pressure zones are exhausted jointly via the end plates. Pilot air supplied jointly via the left end plate.

Potential benefit:

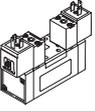
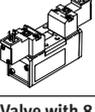
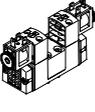
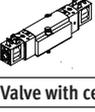
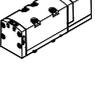
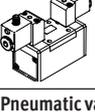
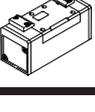
- Two different supply pressures

Key features

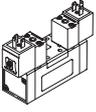
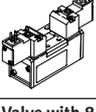
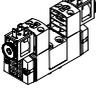
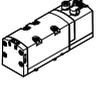
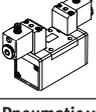
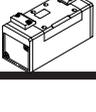
Using 2x 3/2-way valve as 5/4-way valve

| Code | Symbol | Table of values | Equivalent circuit symbol | Function | | | | | | | | | | | | | | | |
|------|--------|---|---------------------------|----------|---|---|---|--|---|---|--|---|---|--|---|---|--|--|--|
| K | | <table border="1"> <thead> <tr> <th>Y1</th> <th>Y2</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>0</td> <td>1</td> <td></td> </tr> <tr> <td>1</td> <td>0</td> <td></td> </tr> <tr> <td>1</td> <td>1</td> <td></td> </tr> </tbody> </table> | Y1 | Y2 | A | 0 | 0 | | 0 | 1 | | 1 | 0 | | 1 | 1 | | | <ul style="list-style-type: none"> • Normally exhausted • The double-acting drive connected to ducts 2 and 4 is unpressurised when the valve is in the normal position and can be moved by an external force • If there is a signal at Y1(14) and Y2(12), there is pressure at ducts 2 and 4 |
| Y1 | Y2 | A | | | | | | | | | | | | | | | | | |
| 0 | 0 | | | | | | | | | | | | | | | | | | |
| 0 | 1 | | | | | | | | | | | | | | | | | | |
| 1 | 0 | | | | | | | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>Y1</th> <th>Y2</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>0</td> <td>1</td> <td></td> </tr> <tr> <td>1</td> <td>0</td> <td></td> </tr> <tr> <td>1</td> <td>1</td> <td></td> </tr> </tbody> </table> | Y1 | Y2 | A | 0 | 0 | | 0 | 1 | | 1 | 0 | | 1 | 1 | | | <ul style="list-style-type: none"> • Normally closed (by combining valve code K and two check valves) • The check valves connected to ducts 2 and 4 are unpressurised when the valve is in the normal position and the pressures in the drive close the check valves leak-tight • The drive remains stationary when the forces are in equilibrium • Leakages can only occur via the drive seals • If there is a signal at Y1(14) and Y2(12), the pressure at ducts 2 and 4 is the same |
| Y1 | Y2 | A | | | | | | | | | | | | | | | | | |
| 0 | 0 | | | | | | | | | | | | | | | | | | |
| 0 | 1 | | | | | | | | | | | | | | | | | | |
| 1 | 0 | | | | | | | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | | | | | | | |
| N | | <table border="1"> <thead> <tr> <th>Y1</th> <th>Y2</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>0</td> <td>1</td> <td></td> </tr> <tr> <td>1</td> <td>0</td> <td></td> </tr> <tr> <td>1</td> <td>1</td> <td></td> </tr> </tbody> </table> | Y1 | Y2 | A | 0 | 0 | | 0 | 1 | | 1 | 0 | | 1 | 1 | | | <ul style="list-style-type: none"> • Normally open • The double-acting drive connected to ducts 2 and 4 is supplied with the same pressure at both ends when the valve is in the normal position and remains stationary when the forces are balanced • If there is a signal at Y1(10) and Y2(10), ducts 2 and 4 are exhausted, the drive is unpressurised and can be moved by an external force |
| Y1 | Y2 | A | | | | | | | | | | | | | | | | | |
| 0 | 0 | | | | | | | | | | | | | | | | | | |
| 0 | 1 | | | | | | | | | | | | | | | | | | |
| 1 | 0 | | | | | | | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | | | | | | | |
| H | | <table border="1"> <thead> <tr> <th>Y1</th> <th>Y2</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>0</td> <td>1</td> <td></td> </tr> <tr> <td>1</td> <td>0</td> <td></td> </tr> <tr> <td>1</td> <td>1</td> <td></td> </tr> </tbody> </table> | Y1 | Y2 | A | 0 | 0 | | 0 | 1 | | 1 | 0 | | 1 | 1 | | | <ul style="list-style-type: none"> • Normally open to duct 2 • The double-acting drive connected to ducts 2 and 4 is supplied with pressure via duct 2 when the valve is in the normal position. Duct 4 is exhausted. When the system is in its initial position, the drive is thus in a clearly defined position, as would also be the case with a 5/2-way single solenoid valve • If there is a signal at Y1(14) and Y2(10), duct 2 is exhausted and there is pressure at duct 4. The drive leaves the initial position • A closed circuit can also be created with this 2x 3/2-way valve by combining it with check valves. However, this is then selected by an active signal at Y2(10). |
| Y1 | Y2 | A | | | | | | | | | | | | | | | | | |
| 0 | 0 | | | | | | | | | | | | | | | | | | |
| 0 | 1 | | | | | | | | | | | | | | | | | | |
| 1 | 0 | | | | | | | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | | | | | | | |

Product range overview

| Function | Type | Valve function | Flow rate Valve [l/min] | Operating voltage | → Page/Internet | |
|---|---|---|--|-------------------|---|----|
| Width 42 mm Working port G1/4 | Valve with armature tube for solenoid coil MSN | | | | | |
| |  | MN1H-5/2 | 5/2-way valve, single solenoid | 1200 | 12 V DC, 24 V DC, 24 V AC, 110 V AC, 230 V AC | 29 |
| | | JMN1 | 5/2-way valve, double solenoid | 1200 | | |
| | | MN1H-5/3 | 5/3-way solenoid valve, mid-position valve | 1200 | | |
| | Valve with armature tube for solenoid coil MSF | | | | | |
| |  | MFH-5/2 | 5/2-way valve, single solenoid | 1200 | 12 V DC, 24 V DC, 42 V DC, 24 V AC, 42 V AC, 48 V AC, 110 V AC, 120 V AC, 230 V AC, 240 V AC | 39 |
| | | JMF | 5/2-way valve, double solenoid | 1200 | | |
| | | MFH-5/3 | 5/3-way solenoid valve, mid-position valve | 1200 | | |
| | Valve with 8 mm armature tube | | | | | |
| |  | VSVA-B-T32 | 2x 3/2-way single solenoid valve | 1400 | 24 V DC | 54 |
| | | VSVA-B-M52 | 5/2-way valve, single solenoid | 1800 | | |
| | | VSVA-B-B52 | 5/2-way valve, double solenoid | 1800 | | |
| | | VSVA-B-D52 | 5/2-way valve, double solenoid, with dominant signal | 1800 | | |
| | | VSVA-B-P53 | 5/3-way solenoid valve, mid-position valve | 1800 | | |
| | Valve with square plug type B to industry standard | | | | | |
| |  | VSVA-B-M52...A1 | 5/2-way valve, single solenoid | 1342 | 24 V DC | 74 |
| | | VSVA-B-B52...A1 | 5/2-way valve, double-solenoid | 1341 | | |
| | | VSVA-B-P53...A1 | 5/3-way valve, mid-position valve | 1289 | | |
| | Valve with central plug M12, 3-pin | | | | | |
| |  | VSVA-B-T22 | 2x 2/2-way single solenoid valve | 1300 | 24 V DC | 78 |
| | | VSVA-B-T32 | 2x 3/2-way single solenoid valve | 1100 | | |
| | | VSVA-B-M52 | 5/2-way valve, single solenoid | 1300 | | |
| | | VSVA-B-B52 | 5/2-way valve, double solenoid | 1300 | | |
| | | VSVA-B-D52 | 5/2-way valve, double solenoid | 1300 | | |
| | | VSVA-B-P53 | 5/3-way solenoid valve, mid-position valve | 1300 | | |
| | Valve with individual plug M12 | | | | | |
| |  | MDH-5/2 | 5/2-way valve, single solenoid | 1200 | 24 V DC, 42 V AC, 110 V AC, 230 V AC | 93 |
| JMD | | 5/2-way valve, double solenoid | 1200 | | | |
| MDH-5/3 | | 5/3-way solenoid valve, mid-position valve | 1200 | | | |
| Pneumatic valve | | | | | | |
|  | VL-5/2 | 5/2-way pneumatic valve, monostable | 1200 | – | 117 | |
| | J | 5/2-way pneumatic valve, bistable | 1200 | | | |
| | VL-5/3 | 5/3-way pneumatic valve, mid-position valve | 1200 | | | |

Product range overview

| Function | Type | Valve function | Flow rate Valve [l/min] | Operating voltage | → Page/Internet | |
|----------------------------------|---|---|--|-------------------|---|-----|
| Width 52 mm Working port G3/8 | Valve with armature tube for solenoid coil MSN | | | | | |
| |  | MN1H-5/2 | 5/2-way valve, single solenoid | 2300 | 12 V DC, 24 V DC, 24 V AC, 110 V AC, 230 V AC | 34 |
| | | JMN1 | 5/2-way valve, double solenoid | 2300 | | |
| | | MN1H-5/3 | 5/3-way solenoid valve, mid-position valve | 2300 | | |
| | Valve with armature tube for solenoid coil MSF | | | | | |
| |  | MFH-5/2 | 5/2-way valve, single solenoid | 2300 | 12 V DC, 24 V DC, 42 V DC, 24 V AC, 42 V AC, 48 V AC, 110 V AC, 120 V AC, 230 V AC, 240 V AC | 44 |
| | | JMF | 5/2-way valve, double solenoid | 2300 | | |
| | | MFH-5/3 | 5/3-way solenoid valve, mid-position valve | 2300 | | |
| | Valve with 8 mm armature tube | | | | | |
| |  | VSVA-B-T32 | 2x 3/2-way single solenoid valve | 2100 | 24 V DC | 64 |
| | | VSVA-B-M52 | 5/2-way valve, single solenoid | 4100 | | |
| | | VSVA-B-B52 | 5/2-way valve, double solenoid | 4000 | | |
| | | VSVA-B-D52 | 5/2-way valve, double solenoid, with dominant signal | 4000 | | |
| | | VSVA-B-P53 | 5/3-way solenoid valve, mid-position valve | 3700 | | |
| | Valve with central plug M12, 3-pin | | | | | |
| |  | VSVA-B-T22 | 2x 2/2-way single solenoid valve | 2800 | 24 V DC | 83 |
| | | VSVA-B-T32 | 2x 3/2-way single solenoid valve | 2200 | | |
| | | VSVA-B-M52 | 5/2-way valve, single solenoid | 2800 | | |
| | | VSVA-B-B52 | 5/2-way valve, double solenoid | 2800 | | |
| | | VSVA-B-D52 | 5/2-way valve, double solenoid | 2800 | | |
| | | VSVA-B-P53 | 5/3-way solenoid valve, mid-position valve | 2700 | | |
| | Valve with individual plug M12 | | | | | |
| |  | MDH-5/2 | 5/2-way valve, single solenoid | 2300 | 24 V DC, 42 V AC, 110 V AC, 230 V AC | 98 |
| | | JMD | 5/2-way valve, double solenoid | 2300 | | |
| | | MDH-5/3 | 5/3-way solenoid valve, mid-position valve | 2300 | | |
| | Pneumatic valve | | | | | |
| |  | VL-5/2 | 5/2-way pneumatic valve, monostable | 2300 | – | 123 |
| J | | 5/2-way pneumatic valve, bistable | 2300 | | | |
| VL-5/3 | | 5/3-way pneumatic valve, mid-position valve | 2300 | | | |

Product range overview

| Function | Type | Valve function | Flow rate Valve [l/min] | Operating voltage | → Page/Internet | |
|--------------------------------------|---|---|--|-------------------|---|-----|
| Width 65 mm Working port G1/2 | Valve with armature tube for solenoid coil MSF | | | | | |
| |  | MFH-5/2 | 5/2-way valve, single solenoid | 4500 | 12 V DC, 24 V DC, 42 V DC, 24 V AC, 42 V AC, 48 V AC, 110 V AC, 120 V AC, 230 V AC, 240 V AC | 49 |
| | | JMF | 5/2-way valve, double solenoid | 4500 | | |
| | | MFH-5/3 | 5/3-way solenoid valve, mid-position valve | 4000 | | |
| | Valve with central plug M12, 4-pin | | | | | |
| |  | MEBH-5/2 | 5/2-way valve, single solenoid | 4500 | 24 V DC | 88 |
| | | JMEB | 5/2-way valve, double solenoid | 4500 | | |
| | | MEBH-5/3 | 5/3-way solenoid valve, mid-position valve | 4000 | | |
| | Valve with individual plug M12 | | | | | |
| |  | MDH-5/2 | 5/2-way valve, single solenoid | 4500 | 24 V DC, 42 V AC, 110 V AC, 230 V AC | 103 |
| | | JMD | 5/2-way valve, double solenoid | 4500 | | |
| | | MDH-5/3 | 5/3-way solenoid valve, mid-position valve | 4000 | | |
| | Pneumatic valve | | | | | |
| |  | VL-5/2 | 5/2-way pneumatic valve, monostable | 4500 | – | 129 |
| | | J | 5/2-way pneumatic valve, bistable | 4500 | | |
| VL-5/3 | | 5/3-way pneumatic valve, mid-position valve | 4100 | | | |
| Width 76 mm Working port G3/4 | Valve with individual plug M12 | | | | | |
| |  | MDH-5/2 | 5/2-way valve, single solenoid | 6000 | 24 V DC, 42 V AC, 110 V AC, 230 V AC | 108 |
| | | JMD | 5/2-way valve, double solenoid | 6000 | | |
| | | MDH-5/3 | 5/3-way solenoid valve, mid-position valve | 4800 | | |
| | Pneumatic valve | | | | | |
| |  | VL-5/2 | 5/2-way pneumatic valve, monostable | 6000 | – | 133 |
| | | J | 5/2-way pneumatic valve, bistable | 6000 | | |
| VL-5/3 | | 5/3-way pneumatic valve, mid-position valve | 4800 | | | |

Type code for valves with round plug

| | | |
|-------------|---|--|
| 001 | Series | |
| VSVA | Standards-based valve to ISO 5599-1 | |
| 002 | Directional control valve type | |
| B | Sub-base valve | |
| 003 | Valve function | |
| T22C | 2x2/2-way valve, normally closed | |
| T32U | 2x3/2-way valve, normally open | |
| T32F | 2x3/2-way valve, normally open, reversible | |
| T32C | 2x3/2-way valve, normally closed | |
| T32N | 2x3/2-way valve, normally closed, reversible | |
| T32H | 2x3/2-way valve, 1x normally closed, 1x normally open | |
| T32W | 2x3/2-way valve, 1x normally closed, 1x normally open, reversible | |
| M52 | 5/2-way valve, single solenoid/monostable | |
| B52 | 5/2-way valve, double solenoid/bistable | |
| D52 | 5/2-way valve, double solenoid/bistable, dominant signal | |
| P53U | 5/3-way valve, mid-position pressurised | |
| P53E | 5/3-way valve, mid-position exhausted | |
| P53C | 5/3-way valve, mid-position closed | |
| 004 | Reset method for monostable/single solenoid valves | |
| | None | |
| A | Pneumatic spring | |
| M | Mechanical spring | |

| | | |
|------------|----------------------------------|--|
| 005 | Pilot air | |
| | Internal | |
| Z | External | |
| 006 | Manual override | |
| H | Non-detenting | |
| D | Non-detenting, detenting | |
| 007 | Pneumatic connection | |
| A2 | 18 mm (02) ISO 15407-1/-2 | |
| A1 | 26 mm (01) ISO 15407-1/-2 | |
| D1 | 42 mm (1) ISO 5599-1/-2 | |
| D2 | 52 mm (2) ISO 5599-1/-2 | |
| 008 | Nominal operating voltage | |
| 1 | 24 V DC | |
| 009 | Electrical connection | |
| R2 | Central connector M8 | |
| R5 | Central plug M12 | |
| 010 | Display | |
| L | LED | |

Type codes for valves with square plug type B to industry standard

| | | | | | |
|-------------|---|--|------------|---|--|
| 001 | Series | | 007 | Manual override | |
| VSVA | Standards-based valve VSVA | | | None | |
| 002 | Directional control valve type | | D | Non-detenting, detenting | |
| B | Sub-base valve | | H | Non-detenting | |
| 003 | Design principle | | 008 | Pneumatic connection | |
| | Piston spool | | A2 | 18 mm (02) ISO 15407-1/-2 | |
| K | Piston spool with sealing ring | | A1 | 26 mm (01) ISO 15407-1/-2 | |
| | | | D1 | 42 mm (1) ISO 5599-1/-2 | |
| 004 | Valve function | | 009 | Nominal operating voltage | |
| T22C | 2x2/2-way valve, normally closed | | | None | |
| T32U | 2x3/2-way valve, normally open | | 1 | 24 V DC | |
| T32F | 2x3/2-way valve, normally open, reversible | | 1A | 24 V AC/50-60 Hz | |
| T32C | 2x3/2-way valve, normally closed | | 2A | 110 V AC/50-60 Hz | |
| T32N | 2x3/2-way valve, normally closed, reversible | | 3A | 230 V AC/50-60 Hz | |
| T32H | 2x3/2-way valve, 1x normally closed, 1x normally open | | 5 | 12 V DC | |
| T32W | 2x3/2-way valve, 1x normally closed, 1x normally open, reversible | | 010 | Electrical connection | |
| B52 | 5/2-way valve, double solenoid/bistable | | B2 | Connection pattern type B, industry standard | |
| M52 | 5/2-way valve, single solenoid/monostable | | C1 | Plug pattern type C, to EN 175301-803 | |
| D52 | 5/2-way valve, double solenoid/bistable, dominant signal | | P1 | Interface for pilot valve size 15 mm to ISO 15218 (CNOMO) | |
| P53U | 5/3-way valve, mid-position pressurised | | R3 | Individual plug M12, to EN 61076-2-101 | |
| P53E | 5/3-way valve, mid-position exhausted | | 011 | Position sensing | |
| P53C | 5/3-way valve, mid-position closed | | | None | |
| 005 | Reset method for monostable/single solenoid valves | | APC | Proximity sensor, PNP with open cable ends | |
| | None | | APP | Proximity sensor, PNP with M8 plug | |
| A | Pneumatic spring | | APX | Proximity sensor, PNP with cable and plug M12 | |
| M | Mechanical spring | | ANC | Proximity sensor, NPN with open cable end | |
| 006 | Pilot air | | ANP | Proximity sensor, NPN with plug M8 | |
| | Internal | | | | |
| Z | External | | | | |

Type code for valves with armature tube 8 m

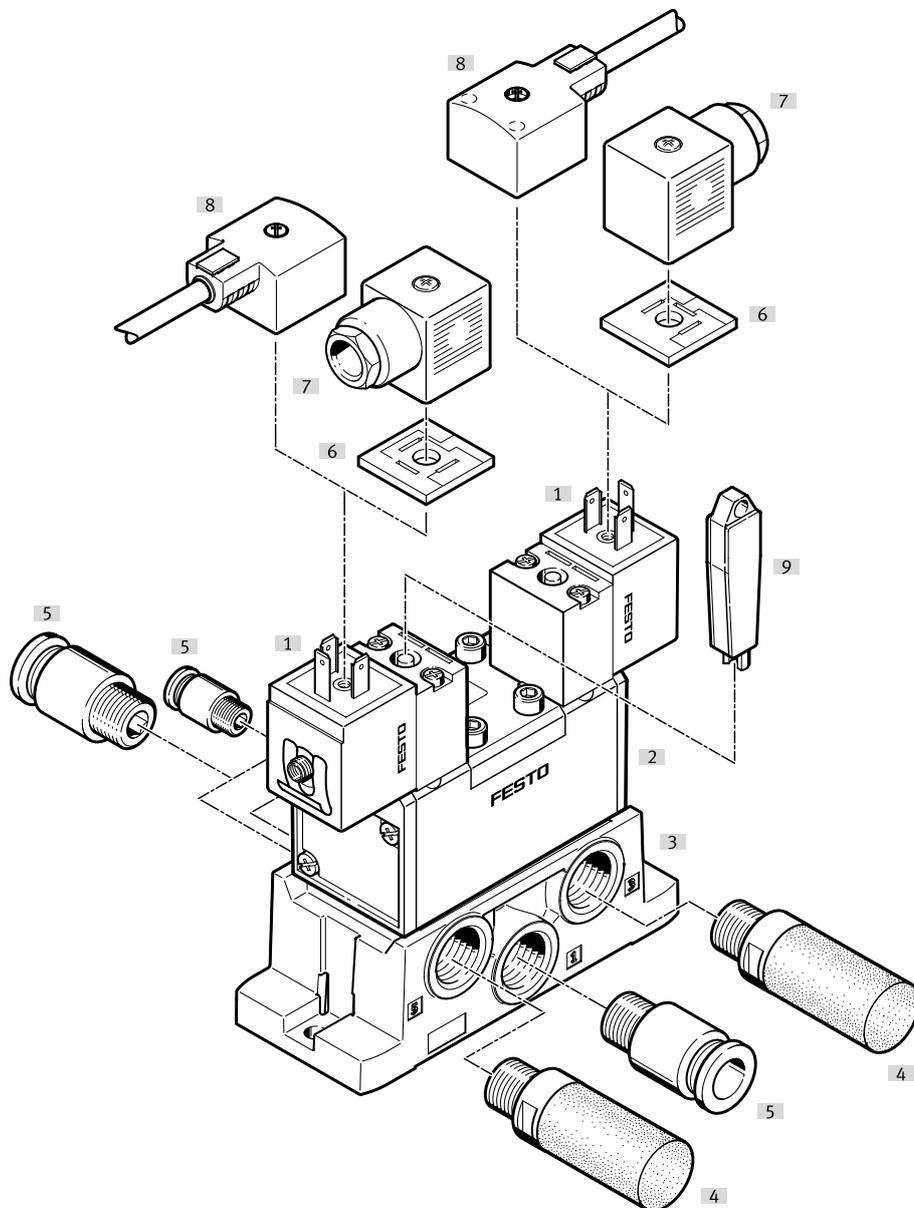
| | | |
|-------------|---|--|
| 001 | Series | |
| VSVA | Standards-based valve VSVA | |
| 002 | Directional control valve type | |
| B | Sub-base valve | |
| 003 | Sealing principle | |
| | Soft seal | |
| 004 | Valve function | |
| B52 | 5/2-way valve, double solenoid/bistable | |
| D52 | 5/2-way valve, double solenoid/bistable, dominant signal | |
| M52 | 5/2-way valve, single solenoid/monostable | |
| P53C | 5/3-way valve, mid-position closed | |
| P53E | 5/3-way valve, mid-position exhausted | |
| P53F | 5/3-way valve, mid-position port 2 pressurised, port 4 closed | |
| P53U | 5/3-way valve, mid-position pressurised | |
| T22C | 2x2/2-way valve, normally closed | |
| T32C | 2x3/2-way valve, normally closed | |
| T32H | 2x3/2-way valve, 1x normally closed, 1x normally open | |
| T32U | 2x3/2-way valve, normally open | |
| 005 | Additional characteristics | |
| | None | |
| D | Switching position 14 detenting, 12 mechanical spring | |
| P | Switching position 12 detenting, 14 mechanical spring | |
| V | 1x vacuum operation | |
| 006 | Reset method for monostable/single solenoid valves | |
| | None | |
| A | Pneumatic spring | |
| M | Mechanical spring | |
| 007 | Pilot air | |
| | Internal | |
| Z | External | |

| | | |
|------------|--|--|
| 008 | Manual override | |
| | None | |
| D | Non-detenting, detenting | |
| H | Non-detenting | |
| T | Non-detenting, detenting with accessories | |
| 009 | Pneumatic connection | |
| D1 | 42 mm (1) ISO 5599-1/-2 | |
| D2 | 52 mm (2) ISO 5599-1/-2 | |
| 010 | Valve pilot control interface | |
| F8 | With armature tube 8 mm, long | |
| 011 | Nominal operating voltage | |
| | None | |
| 1 | 24 V DC | |
| 1A | 24 V AC/50-60 Hz | |
| 3W | 230 V AC/240 V AC/50-60 Hz | |
| 5 | 12 V DC | |
| 7 | 48 V DC | |
| 7A | 48 V AC/50-60 Hz | |
| 16B | 120 V AC/60 Hz and 110V AC/50-60 Hz | |
| 012 | Electrical connection | |
| | None | |
| A1 | Plug pattern type A, to EN 175301-803 | |
| B2 | Connection pattern type B, industry standard | |
| C1 | Plug pattern type C, to EN 175301-803 | |
| 013 | EU certification | |
| | None | |
| EX2 | II 3GD | |

Peripherals overview

Valve on individual sub-base

Solenoid valve with solenoid coil MSN1

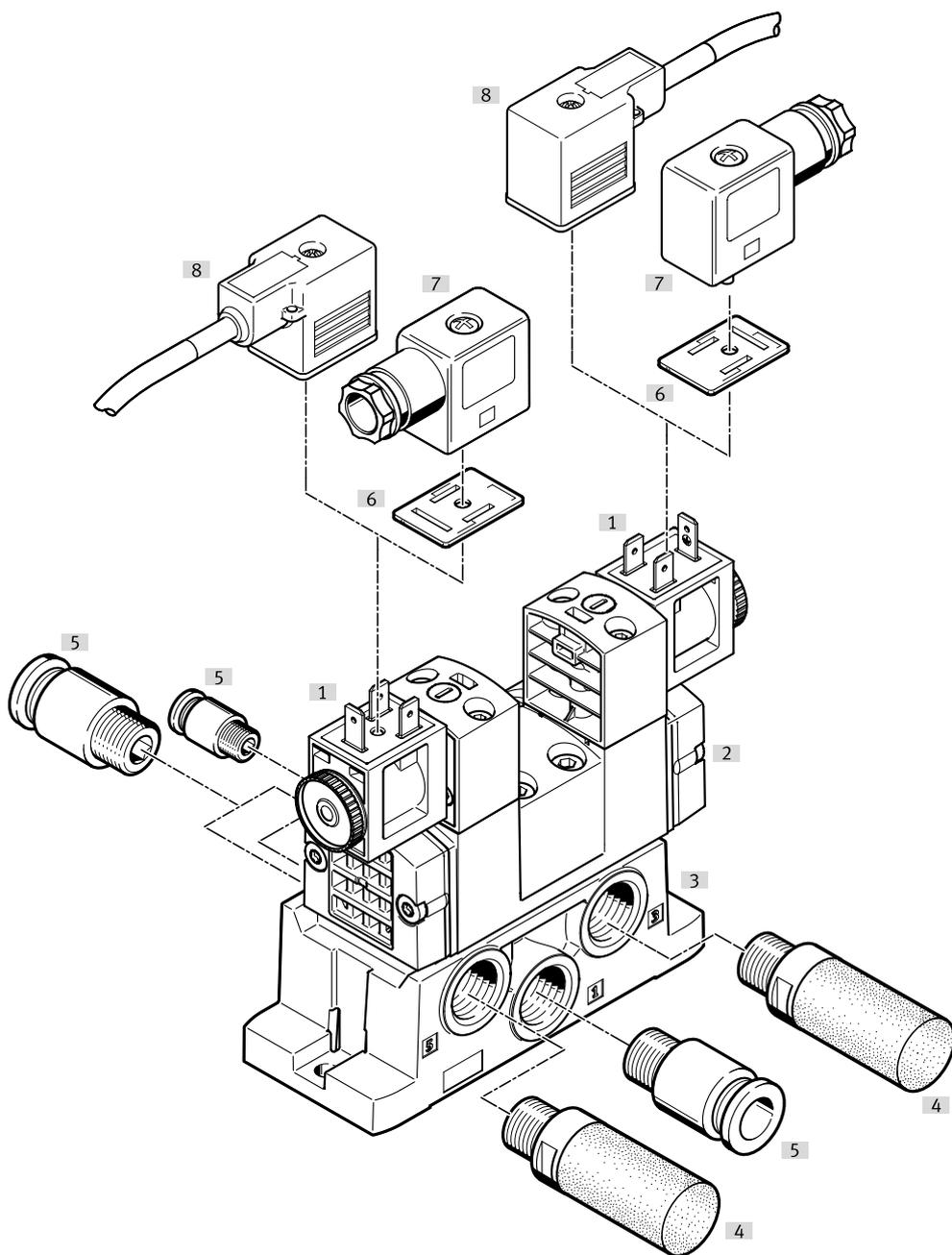


| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|---------------------|-------------------|--|-----------------|
| [1] | Sub-base | VABS-S1-... | Pneumatic ports on the side | 136 |
| | Individual sub-base | NAS-... | Pneumatic ports on the side | 136 |
| | | NAU-... | Pneumatic ports underneath | 139 |
| [2] | Solenoid valve | MN1H-... | Solenoid valve with solenoid coil, hole pattern to ISO 5599-1, corresponding solenoid coils → page 139 | 29 |
| [3] | Solenoid coil | MSN1... | Solenoid coil | 170 |
| [4] | Push-in fitting | QS-... | For connecting tubing with standard O.D. | qs |
| [5] | Push-in fitting | QS-... | For connecting tubing with standard O.D. | qs |
| [6] | Illuminating seal | M...LD | For displaying the signal status | 19 |
| [7] | Connecting cable | KMC-..., NEBV-... | With LED or without LED | 19 |
| [8] | Plug socket | MSSD-... | For self-assembly | 19 |
| [9] | Manual override | AHB-... | Tool for detenting manual override | 173 |
| [10] | Silencer | U-... | For fitting in exhaust ports | silencer |
| [11] | Push-in fitting | QS-... | For connecting tubing with standard O.D. | qs |

Peripherals overview

Valve on individual sub-base

Solenoid valve with 8 mm armature tube

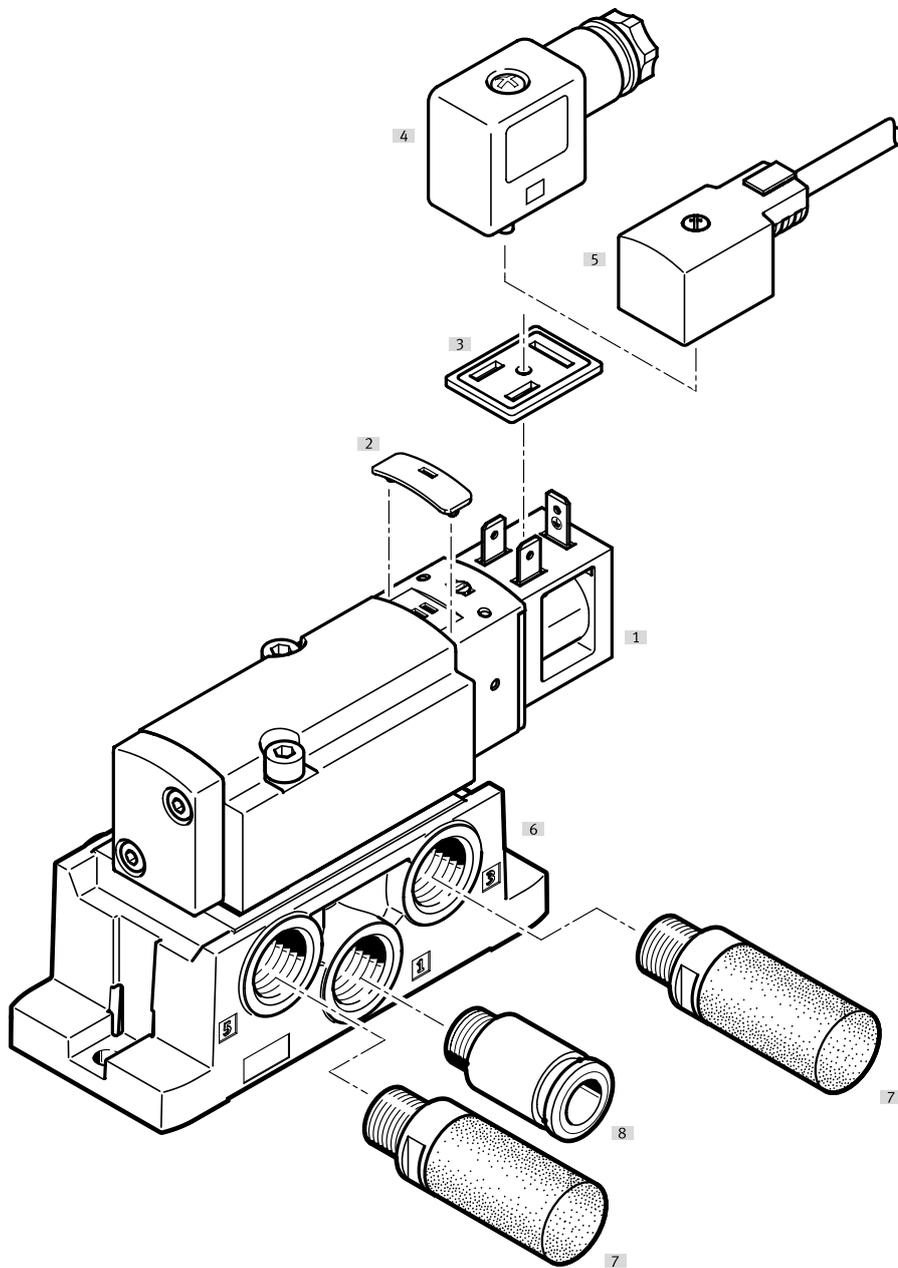


| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|---------------------|---------------|--|-----------------|
| [1] | Solenoid coil | VACF | Electrical connection type A, B or C or M12 | 170 |
| [2] | Solenoid valve | VSVA-...F8... | Solenoid valve with 8 mm armature tube, hole pattern to ISO 5599-1 | 54 |
| [3] | Sub-base | VABS-S1-... | Pneumatic ports on the side | 136 |
| | Individual sub-base | NAS-... | Pneumatic ports on the side | 136 |
| | | NAU-... | Pneumatic ports underneath | 139 |
| [4] | Silencer | U-... | For fitting in exhaust ports | silencer |
| [5] | Push-in fitting | QS-... | For connecting tubing with standard O.D. | qs |
| [6] | Illuminating seal | M... | For displaying the signal status | 172 |
| [7] | Plug socket | MSSD... | For self-assembly | 172 |
| [8] | Connecting cable | NEBV-... | - | 172 |

Peripherals overview

Valve on individual sub-base

Solenoid valve with square plug type B to industry standard

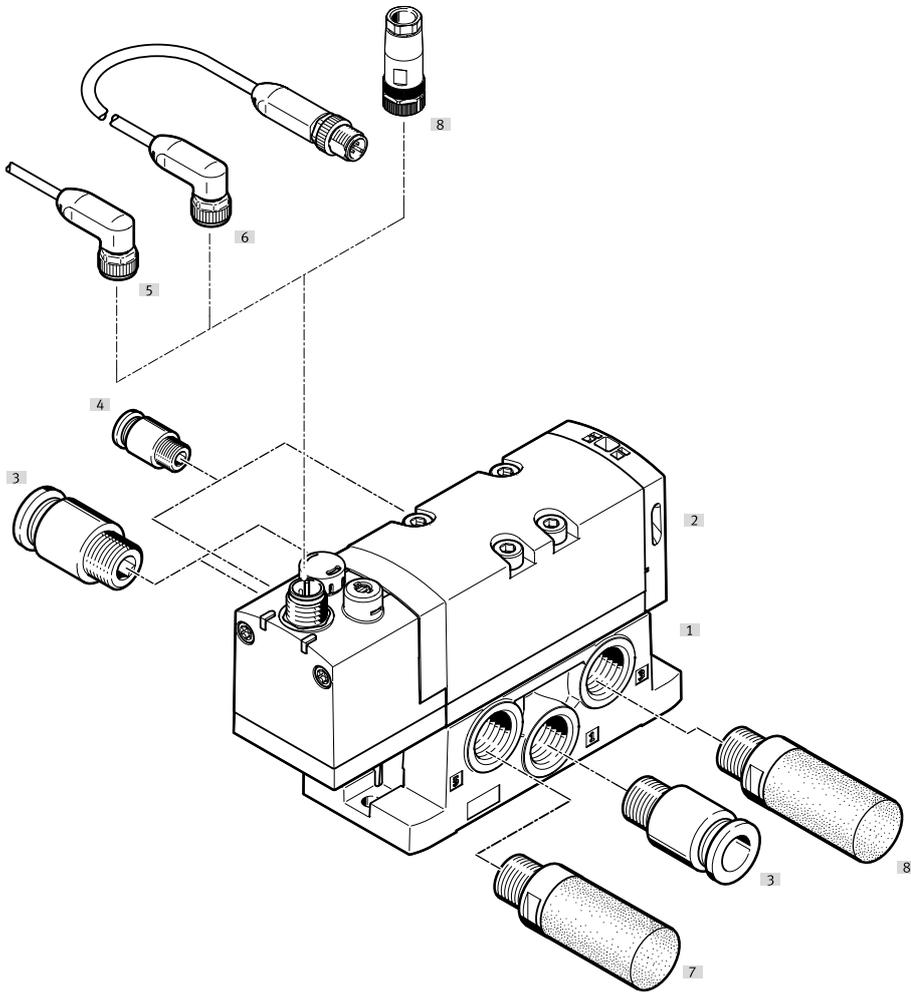


| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|---------------------|------------|---|-----------------|
| [1] | Solenoid valve | VSVA-BK... | Solenoid valve with square plug type B to industry standard, hole pattern to ISO 5599-1 | 74 |
| [2] | Cover cap | VAMC... | For manual override, non-detenting or covered | 173 |
| [3] | Illuminating seal | MF-LD | For displaying the signal status | 19 |
| [4] | Plug socket | MSSD-F... | For self-assembly | 19 |
| [5] | Connecting cable | KMF... | – | 19 |
| [6] | Sub-base | VABS-S1... | Pneumatic ports on the side | 136 |
| | Individual sub-base | NAS... | Pneumatic ports on the side | 136 |
| | | NAU... | Pneumatic ports underneath | 139 |
| [7] | Silencer | U... | For fitting in exhaust ports | silencer |
| [8] | Push-in fitting | QS... | For connecting tubing with standard O.D. | qs |

Peripherals overview

Valve on individual sub-base

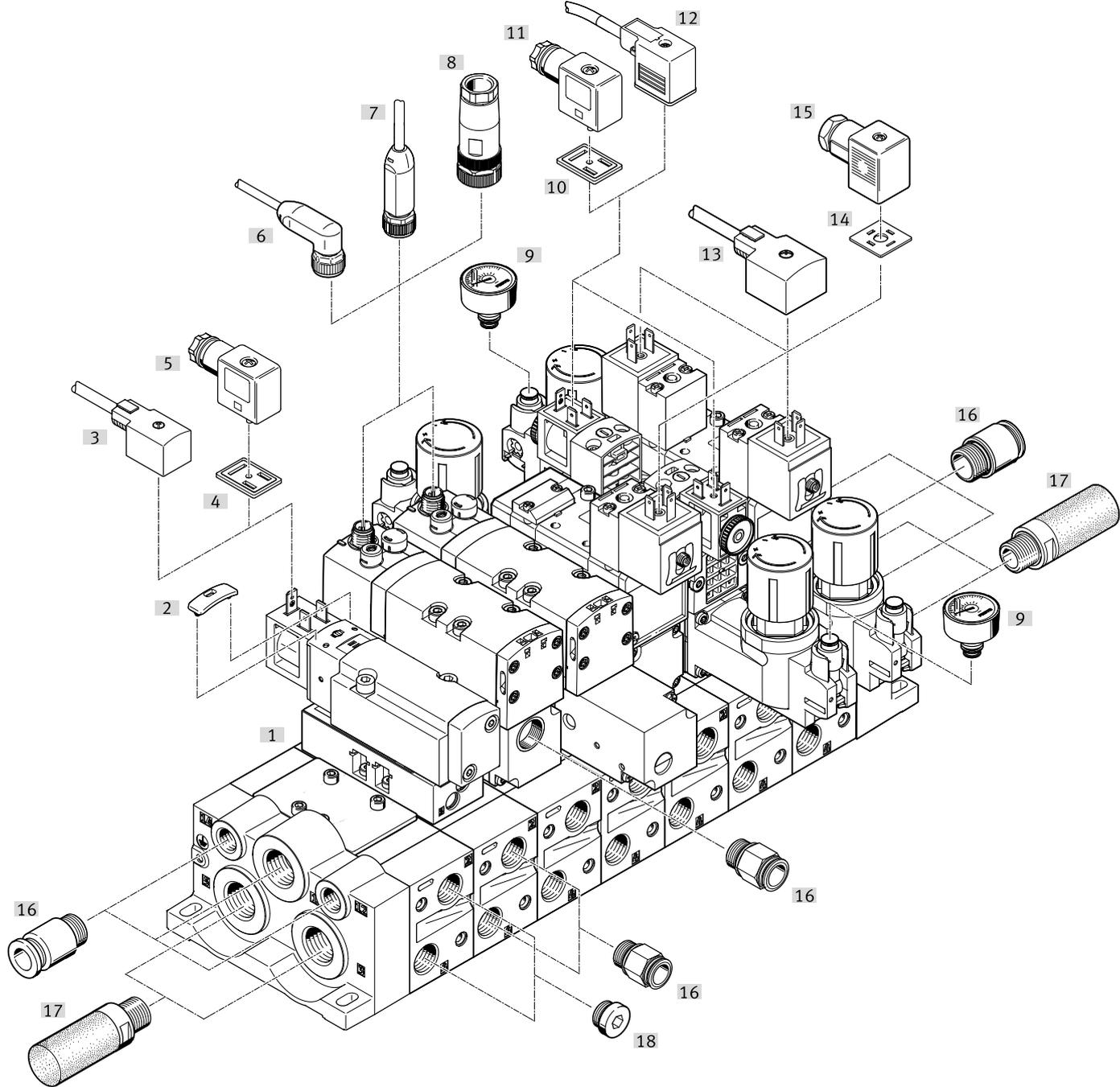
Solenoid valve with central plug M12, 3-pin



| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|---------------------|-------------|---|-----------------|
| [1] | Sub-base | VABS-S1-... | Pneumatic ports on the side | 136 |
| | Individual sub-base | NAS-... | Pneumatic ports on the side | 136 |
| | | NAU-... | Pneumatic ports underneath | 139 |
| [2] | Solenoid valve | VSVA-B... | Solenoid valve with central plug M12, 3-pin, hole pattern to ISO 5599-1 | 78 |
| [3] | Push-in fitting | QS-... | For connecting tubing with standard O.D. | qs |
| [4] | | | | |
| [5] | Connecting cable | NEBA-... | – | 173 |
| [6] | | | | |
| [7] | Silencer | U-... | For fitting in exhaust ports | silencer |
| [8] | Plug socket | NECB-... | For self-assembly | 173 |

Peripherals overview

Accessories

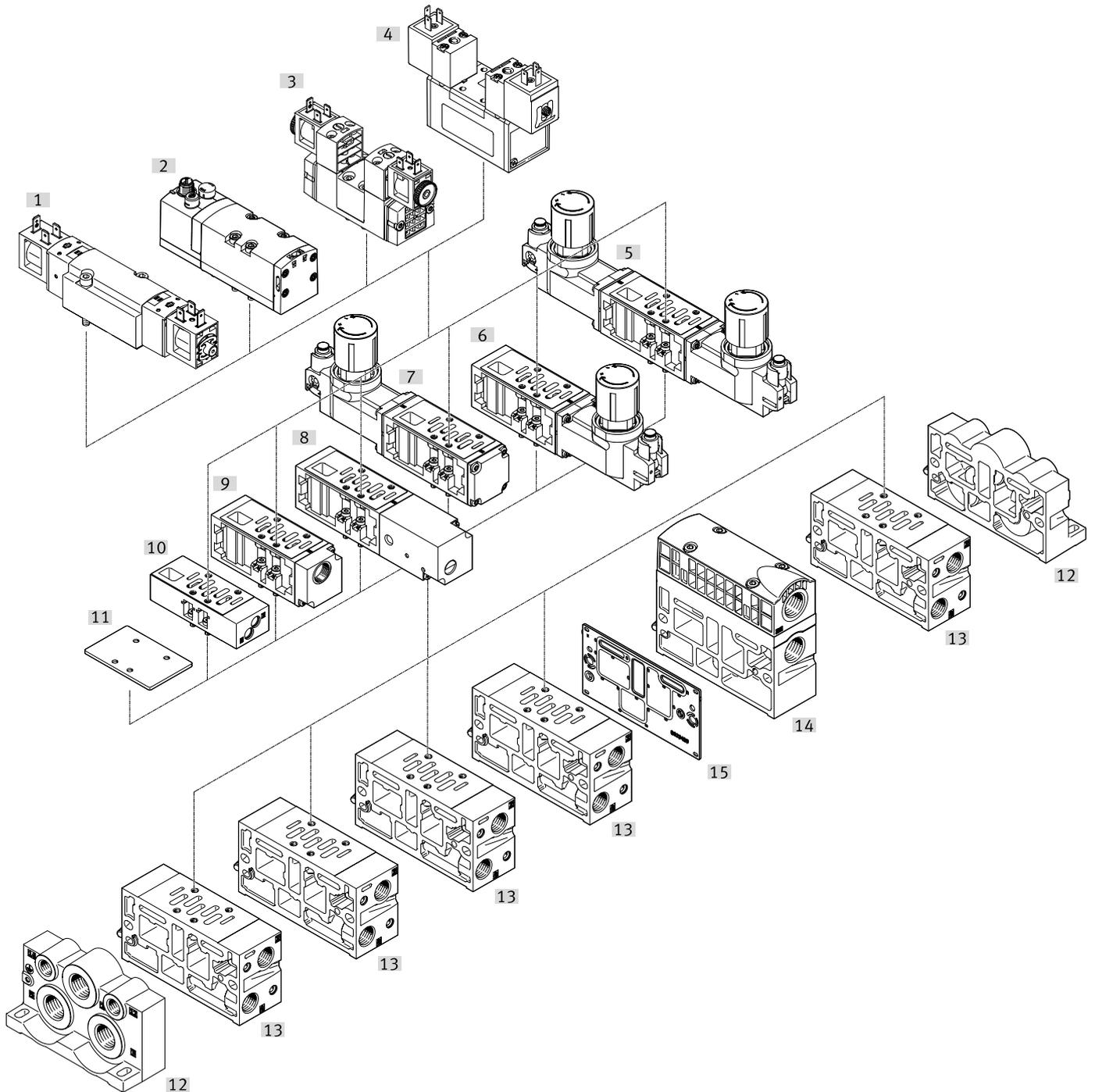


Peripherals overview

| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|-------------------|---|--|-----------------|
| [1] | Solenoid valve | MN1H-... | Solenoid valve with solenoid coil, hole pattern to ISO 5599-1, corresponding solenoid coils → page 139 | 29 |
| | | VSVA-B... | Solenoid valve with 8 mm armature tube | 54 |
| | | VSVA-BK... | Solenoid valve with square plug type B to industry standard, hole pattern to ISO 5599-1 | 74 |
| | | VSVA-B... | Solenoid valve with central plug M12, 3-pin, hole pattern to ISO 5599-1 | 78 |
| [2] | Cover cap | VAMC-... | For manual override, non-detenting or covered | 173 |
| [3] | Connecting cable | KMF-1... | With LED | 171 |
| [4] | Illuminating seal | MF-LD | For displaying the signal status | 171 |
| [5] | Socket | MSSD-F | Plug pattern type B, industry standard | 171 |
| [6] | Connecting cable | NEBA-... | Angled socket, M12x1, 5-pin | 173 |
| [7] | Connecting cable | NEBA-... | Straight socket, M12x1, 5-pin | 173 |
| [8] | Socket | NECB-... | For self-assembly | 173 |
| [9] | Pressure gauge | PAGN-... | With push-in connector | 173 |
| [10] | Illuminating seal | MC-LD | For electrical connection type A according to EN 175301-803 | 172 |
| | | MF-LD | For electrical connection type B | 172 |
| [11] | Socket | MSSD-C | For electrical connection type A according to EN 175301-803 | 172 |
| | | MSSD-F | For electrical connection type B | 172 |
| | | MSSD-EB | For electrical connection type C according to EN 175301-803 | 172 |
| [12] | Connecting cable | KMC-1... | For electrical connection type A according to EN 175301-803 | 172 |
| | | NEBV-A1W3 | | |
| | | KMF-1 | For electrical connection type B | 172 |
| | | NEBV-B2W3 | | |
| | NEBV-C1SW | For electrical connection type C according to EN 175301-803 | 172 | |
| [13] | Connecting cable | KMF-1 | For solenoid coil MSF | 171 |
| | | NEBV-B2W3 | | |
| | | KMC-1... | For solenoid coil MSN1 and MD | 171 |
| | | NEBV-A1W3 | | |
| [14] | Illuminating seal | MC-LD | For electrical connection type A according to EN 175301-803 | 171 |
| | | MF-LD | For electrical connection type B | |
| [15] | Socket | MSSD-C | For electrical connection type A according to EN 175301-803 | 171 |
| | | MSSD-F | For electrical connection type B | |
| | | MSSD-EB | For electrical connection type C according to EN 175301-803 | |
| [16] | Push-in fitting | QS-... | For connecting tubing with standard O.D. | qs |
| [17] | Silencer | U-... | For fitting in exhaust ports | silencer |
| [18] | Blanking plug | B-... | For sealing ports that are not required | b |

System overview

Manifold assembly

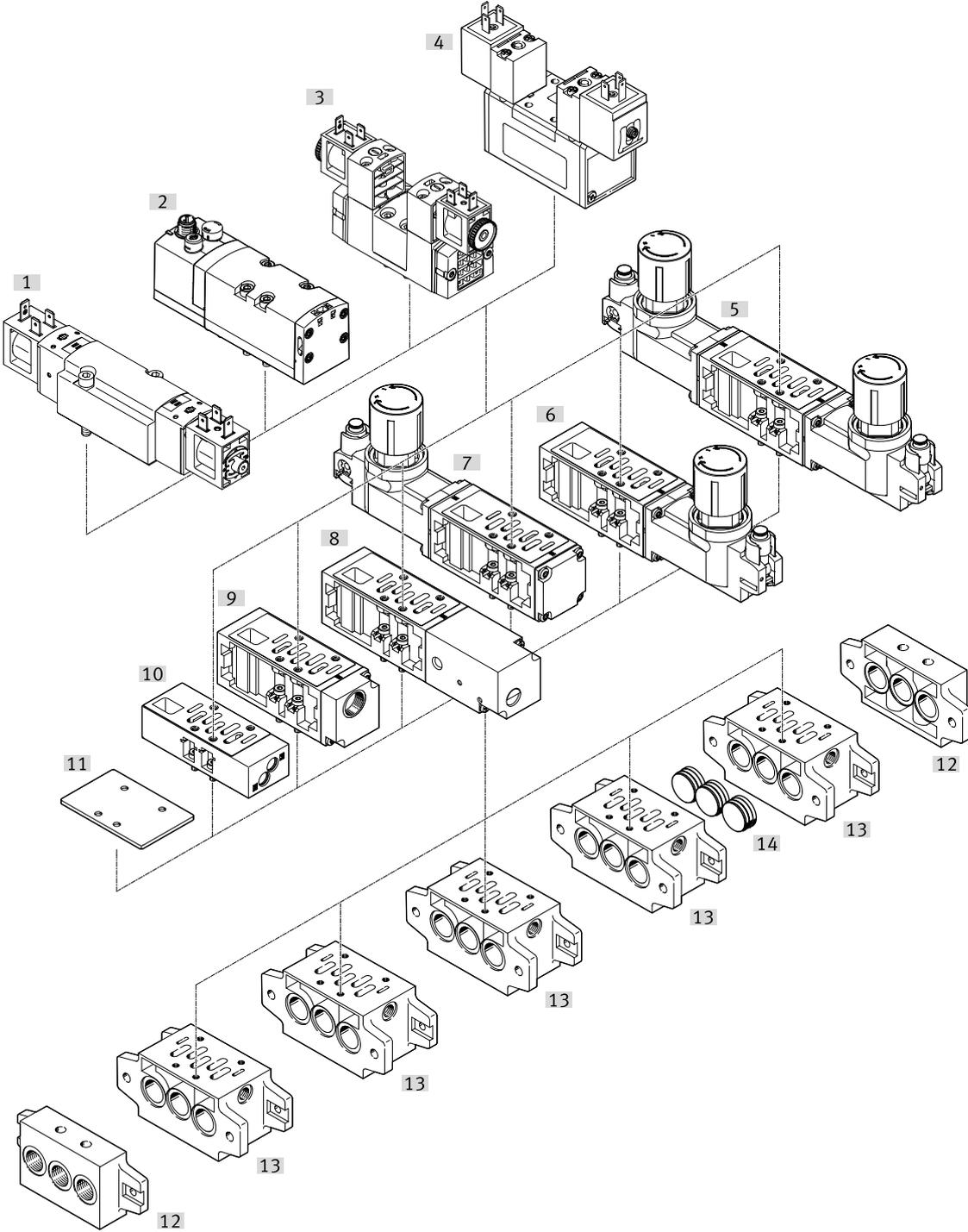


System overview

| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|----------------------------------|----------------------|---|-----------------|
| [1] | Solenoid valve | VSVA-BK... | Solenoid valve with square plug type B to industry standard | 74 |
| [2] | Solenoid valve | VSVA-... | ..With central plug M12, 3-pin | 78 |
| | | MEBH-... | ..With central plug M12, 4-pin | 88 |
| | | JMEBH-... | ..With central plug M12, 4-pin | 88 |
| | | JMEBDH-... | ..With central plug M12, 4-pin | 88 |
| [3] | Solenoid valve | VSVA-...F8... | Solenoid valve with 8 mm armature tube | 54 |
| [4] | Solenoid valve | MN1H-... | With armature tube for solenoid coil MSN1 | 29 |
| | | JMN1H-... | With armature tube for solenoid coil MSN1 | 29 |
| | | JMN1DH-... | With armature tube for solenoid coil MSN1 | 29 |
| | | MFH-... | With armature tube for solenoid coil MSF | 39 |
| | | JMFH-... | With armature tube for solenoid coil MSF | 39 |
| | | JMFDH-... | With armature tube for solenoid coil MSF | 39 |
| | | MDH-... | With solenoid coil MD with round plug M12x1 | 93 |
| | | JMDH-... | With solenoid coil MD with round plug M12x1 | 93 |
| | | JMDDH-... | With solenoid coil MD with round plug M12x1 | 93 |
| [5] | Regulator plate | LR-ZP-... | Pressure regulator for manually setting a particular pressure in the regulated port upstream or downstream of the valve | 164 |
| [6] | | VABF-S1-...-R... | Pressure regulator for manually setting a particular pressure in the regulated port upstream or downstream of the valve | 164 |
| [7] | | | | |
| [8] | Vertical pressure shut-off plate | VABF-S1-...-L1D1-C | For blocking duct 1 and duct 14 upstream of a valve | 162 |
| [9] | Vertical supply plate | VABF-S1-...-P1A3-G38 | Alternative compressed air supply for port 1 of the mounted valve | 160 |
| [10] | Throttle plate | VABF-S1-...-F1B1-C | Restricts the flow of exhaust air in ducts 3 and 5 | 157 |
| | | GRO-ZP-... | Restricts the flow of exhaust air in ducts 3 and 5 | 157 |
| [11] | Cover plate | NDV-... | For sealing unused manifold sub-bases | 151 |
| [12] | End plate | VABE-S1-... | With ports for air supply 1 and exhausts 3 and 5 and pilot air supply 12 and 14 | 148 |
| [13] | Manifold sub-base | VABV-S1-... | With ports 2 and 4 underneath | 141 |
| [14] | Supply plate | VABF-S1-1-... | With ports for air supply 1 and exhausts 3 and 5 | 143 |
| [15] | Duct separation | VABD-S1-1-... | For sealing ducts 1, 3, 5, 12 and 14 between end plate and manifold sub-base, e.g. to create pressure zones | 152 |

System overview

Manifold assembly

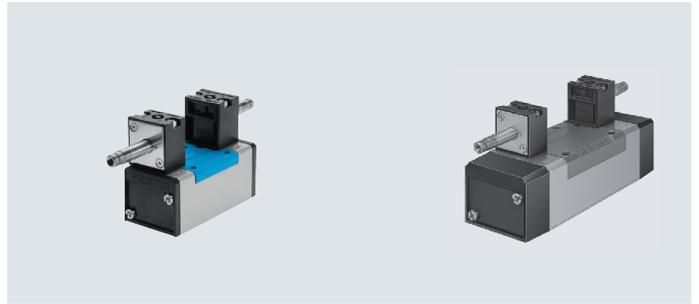


System overview

| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|----------------------------------|----------------------|---|-----------------|
| [1] | Solenoid valve | VSVA-BK... | Solenoid valve with square plug type B to industry standard | 74 |
| [2] | Solenoid valve | VSVA-... | ..With central plug M12, 3-pin | 78 |
| | | MEBH-... | ..With central plug M12, 4-pin | 88 |
| | | JMEBH-... | ..With central plug M12, 4-pin | 88 |
| | | JMEBDH-... | ..With central plug M12, 4-pin | 88 |
| [3] | Solenoid valve | VSVA-...F8... | With 8 mm armature tube | 54 |
| [4] | Solenoid valve | MN1H-... | With armature tube for solenoid coil MSN1 | 29 |
| | | JMN1H-... | With armature tube for solenoid coil MSN1 | 29 |
| | | JMN1DH-... | With armature tube for solenoid coil MSN1 | 29 |
| | | MFH-... | With armature tube for solenoid coil MSF | 39 |
| | | JMFH-... | With armature tube for solenoid coil MSF | 39 |
| | | JMFDH-... | With armature tube for solenoid coil MSF | 39 |
| | | MDH-... | With solenoid coil MD with round plug M12x1 | 93 |
| | | JMDH-... | With solenoid coil MD with round plug M12x1 | 93 |
| | | JMDDH-... | With solenoid coil MD with round plug M12x1 | 93 |
| [5] | Regulator plate | LR-ZP-... | Pressure regulator for manually setting a particular pressure in the regulated port upstream or downstream of the valve | 164 |
| [6] | | VABF-S1-...-R... | Pressure regulator for manually setting a particular pressure in the regulated port upstream or downstream of the valve | 164 |
| [7] | | | | |
| [8] | Vertical pressure shut-off plate | VABF-S1-...-L1D1-C | For blocking duct 1 and duct 14 upstream of a valve | 162 |
| [9] | Vertical supply plate | VABF-S1-...-P1A3-G38 | Alternative compressed air supply for port 1 of the mounted valve | 160 |
| [10] | Throttle plate | VABF-S1-...-F1B1-C | Restricts the flow of exhaust air in ducts 3 and 5 | 157 |
| | | GRO-ZP-... | Restricts the flow of exhaust air in ducts 3 and 5 | 157 |
| [11] | Cover plate | NDV-... | For sealing unused manifold sub-bases | 151 |
| [12] | End plate kit | NEV-... | With ports for air supply 1 and exhausts 3 and 5 | 147 |
| [13] | Manifold sub-base | NAV-... | With ports 2 and 4 underneath | 141 |
| [14] | Isolating disc | NSC-... | For sealing ducts 1, 3, 5 between end plate and manifold sub-base, e.g. to create pressure zones | 151 |

Datasheet – Width 42 mm

-  - Flow rate
1200 l/min

**General technical data**

| | | |
|---------------------------------------|--|-------------------------------|
| Design | Piston spool | |
| Sealing principle | Soft | |
| Actuation type | Electrical | |
| Type of control | Piloted | |
| Flow direction | With external pilot air supply | Reversible |
| | With internal pilot air supply | Not reversible |
| Exhaust air function | Can be throttled | |
| Manual override | Non-detenting, detenting via accessory | |
| Type of mounting | On sub-base, with through-hole | |
| Mounting position | Any | |
| Nominal width | [mm] | 8 |
| Overlap | Positive overlap | |
| Width | [mm] | 42 |
| Grid dimension | [mm] | 43 |
| Pneumatic port | 1, 2, 3, 4, 5, 12, 14 | Sub-base size 1 to ISO 5599-1 |
| Pilot exhaust air port 82 | - | |
| Pilot exhaust air port 84 | - | |
| Noise level | [dB (A)] | 85 |
| Conforms to standard | ISO 5599-1 | |
| Certification | With internal pilot air supply | c UL us - Recognized (OL) |
| Maritime classification ¹⁾ | See certificate | |
| Certificate-issuing authority | DNV-TAA000032X | |

1) More information www.festo.com/catalogue/... → Support/Downloads.

Flow rates

| | | | |
|----------------------------|--------------------------------|--------------------------------|---------------------------|
| Valve function | 5/2-way valve, single solenoid | 5/2-way valve, double solenoid | 5/3-way valve, monostable |
| Standard nominal flow rate | [l/min] | 1200 | |

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|---------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | MN1H-5/2-D-1-C | 23 | 32 | - | - |
| | MN1H-5/2-D-1-S-C | 23 | 32 | - | - |
| | MN1H-5/2-D-1-FR-C | 17 | 39 | - | - |
| | MN1H-5/2-D-1-FR-S-C | 17 | 39 | - | - |
| 5/2-way valve, double solenoid | JMN1H-5/2-D-1-C | - | - | 18 | - |
| | JMN1H-5/2-D-1-S-C | - | - | 18 | - |
| | JMN1DH-5/2-D-1-C | - | - | 18 | 15 |
| | JMN1DH-5/2-D-1-S-C | - | - | 18 | 15 |
| 5/3-way valve | MN1H-5/3G-D-1-C | 20 | 44 | - | - |
| | MN1H-5/3G-D-1-S-C | 20 | 44 | - | - |
| | MN1H-5/3E-D-1-C | 20 | 46 | - | - |
| | MN1H-5/3E-D-1-S-C | 20 | 46 | - | - |
| | MN1H-5/3B-D-1-C | 20 | 46 | - | - |
| | MN1H-5/3B-D-1-S-C | 20 | 46 | - | - |

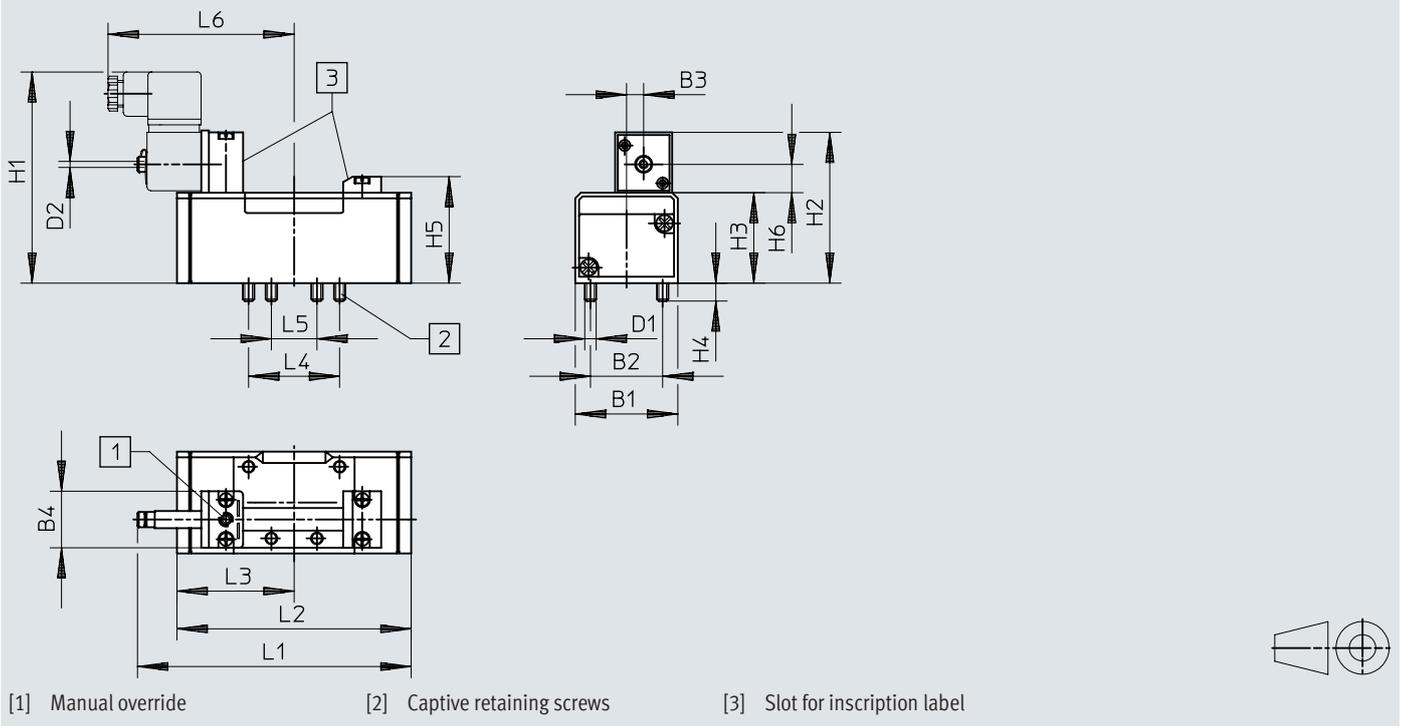
Datasheet – Width 42 mm

| Operating and environmental conditions | | | |
|---|---------------------------|--|-------------------|
| Reset method | | Pneumatic spring | Mechanical spring |
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Pilot medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Note on the operating/pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) | |
| Operating pressure | Internal pilot air supply | [bar] | 2 ... 10 |
| | External pilot air supply | [bar] | -0.9 ... +16 |
| Pilot pressure | | [bar] | 2 ... 10 |
| Ambient temperature | | [°C] | -5 ... +50 |
| Temperature of medium | | [°C] | -5 ... +50 |
| Safety characteristics | | | |
| Max. positive test pulse with 0 signal | | [µs] | 3700 |
| Max. negative test pulse with 1 signal | | [µs] | 4600 |
| Shock resistance | | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | |
| Vibration resistant | | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | |
| Electrical data | | | |
| Electrical connection | | Via N1 coil, to be ordered separately | |
| Coil characteristics | | See solenoid coil, to be ordered separately | |
| Degree of protection to EN 60529 | | IP65 | |
| Materials | | | |
| Housing | | Die-cast aluminium | |
| Seals | | HNBR, NBR | |
| Note on materials | | RoHS-compliant | |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L | |

Datasheet – Width 42 mm

Dimensions – 5/2-way valves, single solenoid

Download CAD data → www.festo.com

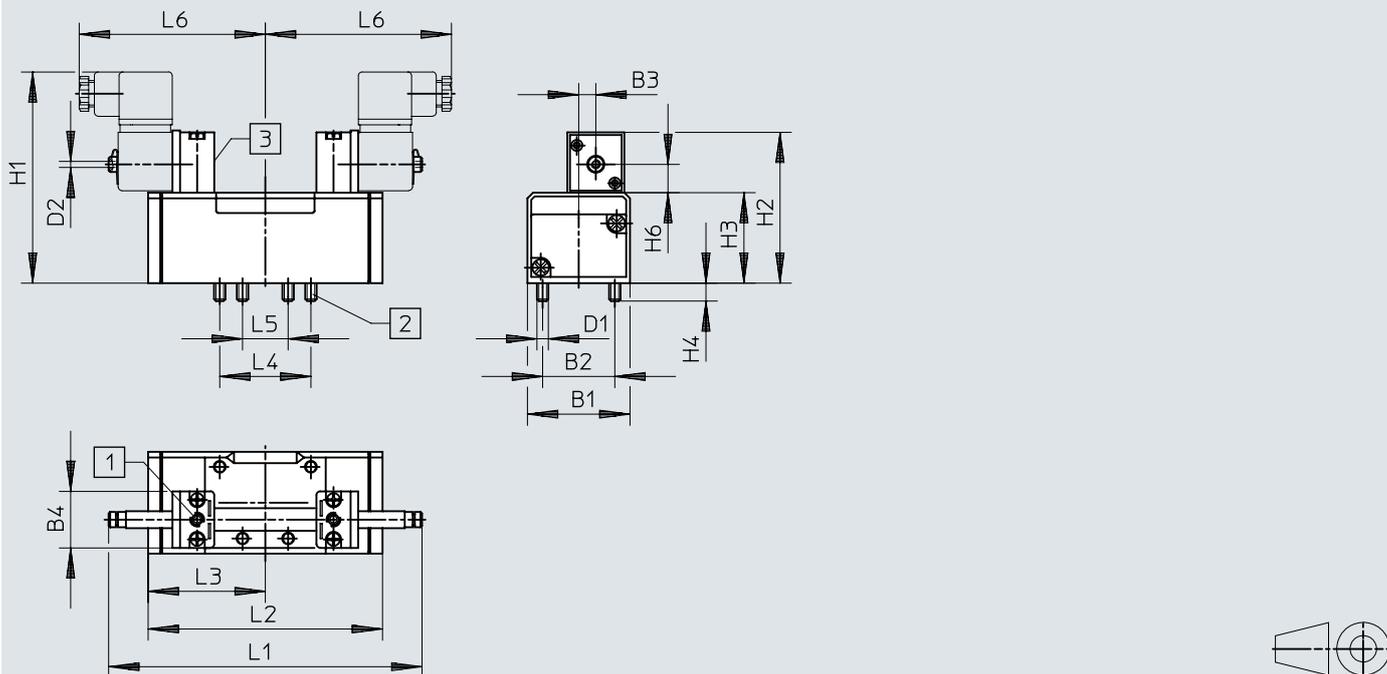


| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|------------------------|----|----|----|----|----|----|-----|----|----|----|------|------|-------|------|------|----|----|----|
| MN1H-5/2- ... | 42 | 28 | 6 | 30 | M5 | M5 | 106 | 74 | 38 | 9 | 46.5 | 15.3 | 117.5 | 87.6 | 43.8 | 36 | 18 | 89 |
| MN1H-5/2- ... -FR- ... | | | | | | | | | | | | | 128 | 98 | | | | |

Datasheet – Width 42 mm

Dimensions – 5/2-way valves, double solenoid, 5/3-way valves

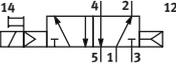
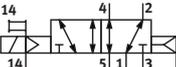
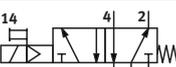
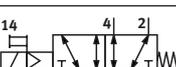
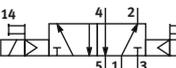
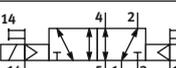
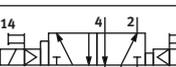
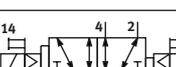
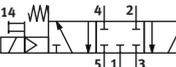
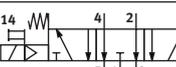
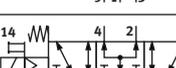
Download CAD data → www.festo.com



[1] Manual override [2] Captive retaining screws [3] Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|-----------------|----|----|----|----|----|----|-----|----|----|----|------|------|-------|-------|------|----|----|----|
| JMN1H-5/2- ... | 42 | 28 | 6 | 30 | M5 | M5 | 106 | 74 | 38 | 9 | 46.5 | 15.3 | 147.3 | 87.6 | 43.8 | 36 | 18 | 89 |
| JMN1DH-5/2- ... | | | | | | | | | | | | | | 87.6 | | | | |
| MN1H-5/3... | | | | | | | | | | | | | | 108.4 | | | | |

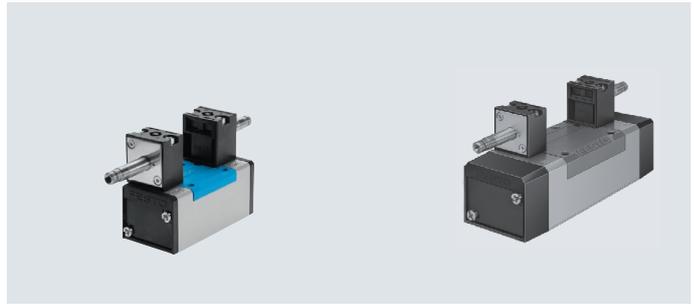
Ordering data – Width 42 mm

| Ordering data – Valves with armature tube for solenoid coil MSN1) | | | | | | |
|---|--|------------------|------------|----------|---------------|----------------------------|
| Circuit symbol | Description | Pilot air supply | Weight [g] | ISO code | Part no. | Type |
| 5/2-way valve, single solenoid | | | | | | |
|  | Pneumatic spring return | Internal | 450 | 151 | 159688 | MN1H-5/2-D-1-C |
|  | Pneumatic spring return | External | 450 | 164 | 159686 | MN1H-5/2-D-1-S-C |
|  | Mechanical spring return | Internal | 450 | 152 | 159687 | MN1H-5/2-D-1-FR-C |
|  | Mechanical spring return | External | 450 | 169 | 159716 | MN1H-5/2-D-1-FR-S-C |
| 5/2-way valve, double solenoid | | | | | | |
|  | – | Internal | 610 | 155 | 159690 | JMN1H-5/2-D-1-C |
|  | – | External | 610 | 169 | 159689 | JMN1H-5/2-D-1-S-C |
|  | With dominant signal at 14 | Internal | 610 | 169 | 159691 | JMN1DH-5/2-D-1-C |
|  | With dominant signal at 14 | External | 610 | 169 | 159717 | JMN1DH-5/2-D-1-S-C |
| 5/3-way valve | | | | | | |
|  | Normally closed, mechanical spring return | Internal | 650 | 156 | 159681 | MN1H-5/3G-D-1-C |
|  | Normally closed, mechanical spring return | External | 650 | 169 | 159680 | MN1H-5/3G-D-1-S-C |
|  | Normally exhausted, mechanical spring return | Internal | 650 | 157 | 159683 | MN1H-5/3E-D-1-C |
|  | Normally exhausted, mechanical spring return | External | 650 | 169 | 159682 | MN1H-5/3E-D-1-S-C |
|  | Normally open, mechanical spring return | Internal | 650 | 158 | 159685 | MN1H-5/3B-D-1-C |
|  | Normally open, mechanical spring return | External | 650 | 169 | 159684 | MN1H-5/3B-D-1-S-C |

1) Solenoid coils → Page 170

Datasheet – Width 52 mm

-  - Flow rate
2300 l/min



General technical data

| | | |
|---------------------------------------|--|-------------------------------|
| Design | Piston spool | |
| Sealing principle | Soft | |
| Actuation type | Electrical | |
| Type of control | Piloted | |
| Flow direction | With external pilot air supply | Reversible |
| | With internal pilot air supply | Not reversible |
| Exhaust air function | Can be throttled | |
| Manual override | Non-detenting, detenting via accessory | |
| Type of mounting | On sub-base, with through-hole and screw | |
| Mounting position | Any | |
| Nominal width | [mm] | 11.5 |
| Overlap | Positive overlap | |
| Width | [mm] | 52 |
| Grid dimension | [mm] | 56 |
| Pneumatic port | 1, 2, 3, 4, 5, 14 | Sub-base size 2 to ISO 5599-1 |
| Pneumatic port 12 | | Sub-base size 2 to ISO 5599-1 |
| | 5/2-way valve, single solenoid | - |
| Pilot exhaust air port 82 | | M5 |
| | 5/2-way valve, single solenoid | - |
| Pilot exhaust air port 84 | | M5 |
| Noise level | [dB (A)] | 85 |
| Conforms to standard | ISO 5599-1 | |
| Certification | With internal pilot air supply | c UL us - Recognized (OL) |
| Maritime classification ¹⁾ | See certificate | |
| Certificate-issuing authority | DNV-TAA000032X | |

1) More information www.festo.com/catalogue/... → Support/Downloads.

Flow rates

| | | | |
|----------------------------|---------------|--------------------------------|---------------|
| Valve function | 5/2-way valve | 5/2-way valve, double solenoid | 5/3-way valve |
| Standard nominal flow rate | [l/min] | 2300 | |

Datasheet – Width 52 mm

| Switching times [ms] | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|---------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | MN1H-5/2-D-2-C | 46 | 69 | – | – |
| | MN1H-5/2-D-2-S-C | 43 | 62 | – | – |
| | MN1H-5/2-D-2-FR-C | 24 | 62 | – | – |
| | MN1H-5/2-D-2-FR-S-C | 24 | 62 | – | – |
| 5/2-way valve, double solenoid | JMN1H-5/2-D-2-C | – | – | 21 | – |
| | JMN1H-5/2-D-2-S-C | – | – | 21 | – |
| | JMN1DH-5/2-D-2-C | – | – | 24 | 21 |
| | JMN1DH-5/2-D-2-S-C | – | – | 24 | 21 |
| 5/3-way valve | MN1H-5/3G-D-2-C | 33 | 82 | – | – |
| | MN1H-5/3G-D-2-S-C | 33 | 82 | – | – |
| | MN1H-5/3E-D-2-C | 36 | 84 | – | – |
| | MN1H-5/3E-D-2-S-C | 36 | 84 | – | – |
| | MN1H-5/3B-D-2-C | 35 | 78 | – | – |
| | MN1H-5/3B-D-2-S-C | 35 | 78 | – | – |

| Operating and environmental conditions | | | Pneumatic spring | Mechanical spring |
|--|---------------------------|-------|--|-------------------|
| Reset method | | | | |
| Operating medium | | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Pilot medium | | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Note on the operating/pilot medium | | | Lubricated operation possible (in which case lubricated operation will always be required) | |
| Operating pressure | Internal pilot air supply | [MPa] | 0.2 ... 1 | 0.3 ... 1 |
| | | [bar] | 2 ... 10 | 3 ... 10 |
| | External pilot air supply | [MPa] | –0.09 ... +1.6 | –0.09 ... +1.6 |
| | | [bar] | –0.9 ... +16 | –0.9 ... +16 |
| Pilot pressure | | [bar] | 2 ... 10 | 3 ... 10 |
| Ambient temperature | | [°C] | –5 ... +50 | |
| Temperature of medium | | [°C] | –5 ... +50 | |

| Safety characteristics | | |
|--|--|------|
| Max. positive test pulse with 0 signal | [µs] | 3700 |
| Max. negative test pulse with 1 signal | [µs] | 4600 |
| Shock resistance | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | |
| Vibration resistant | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | |

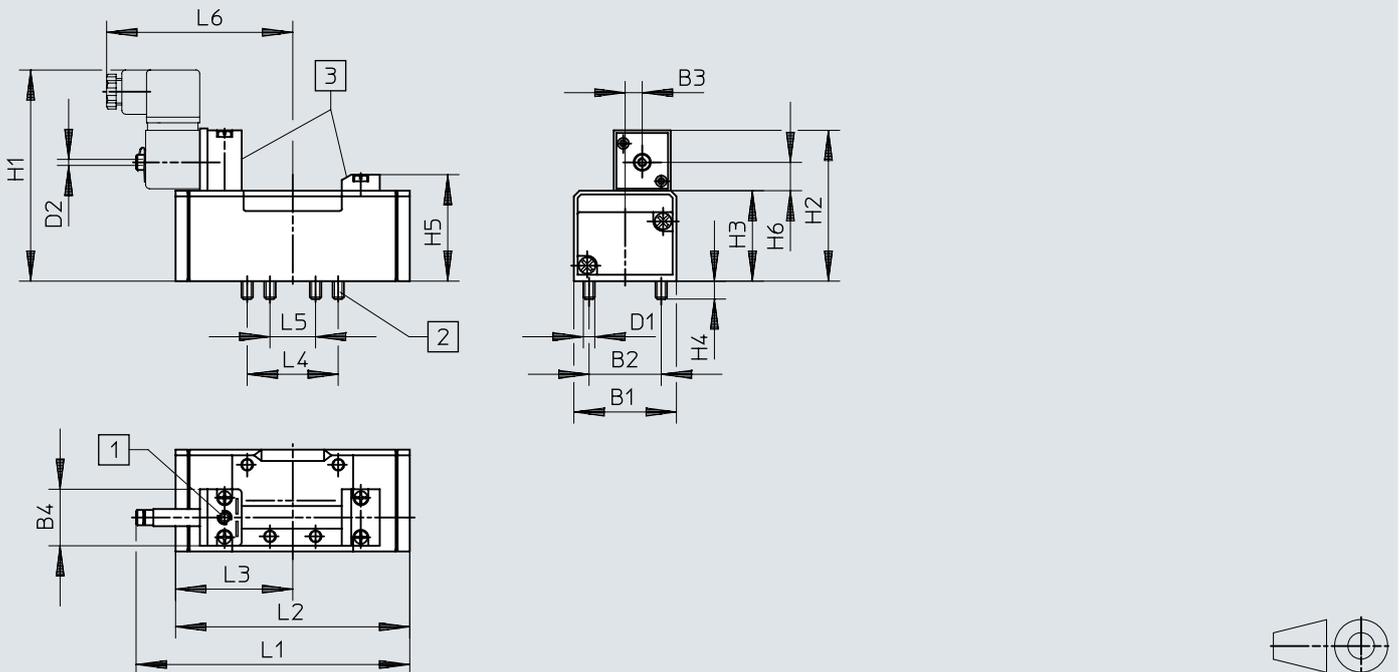
| Electrical data | |
|----------------------------------|---------------------------------------|
| Electrical connection | Via N1 coil, to be ordered separately |
| Degree of protection to EN 60529 | IP65 |

| Materials | |
|------------------------|--------------------|
| Housing | Die-cast aluminium |
| Seals | HNBR, NBR |
| Note on materials | RoHs-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Datasheet – Width 52 mm

Dimensions – 5/2-way valves, single solenoid

Download CAD data → www.festo.com



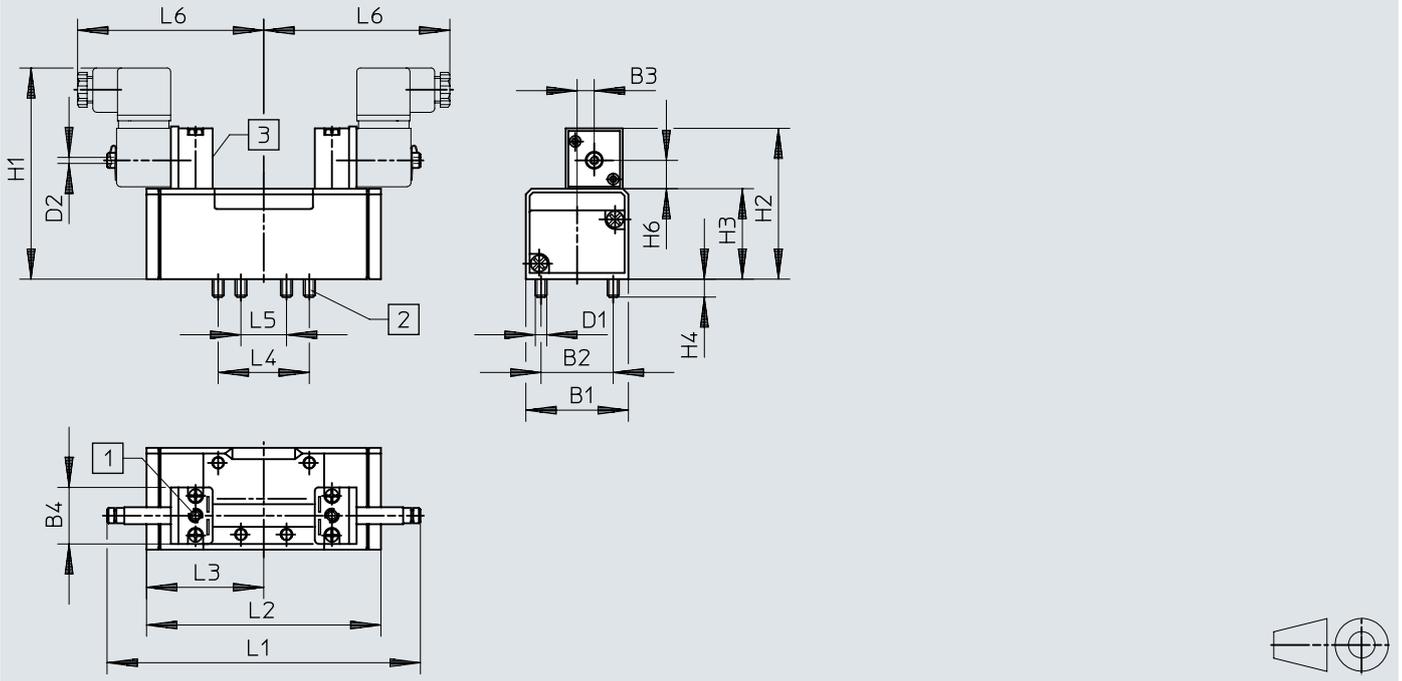
[1] Manual override [2] Captive retaining screws [3] Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|------------------------|----|----|----|----|----|----|-----|----|----|-----|------|------|-------|-------|------|----|----|----|
| MN1H-5/2- ... | 54 | 38 | 9 | 30 | M6 | M5 | 116 | 84 | 48 | 9.5 | 56.5 | 15.3 | 147.6 | 123.4 | 61.7 | 48 | 24 | 98 |
| MN1H-5/2- ... -FR- ... | | | | | | | | | | | | | 161.5 | 140.7 | | | | |

Datasheet – Width 52 mm

Dimensions – 5/2-way valves, double solenoid, 5/3-way valves

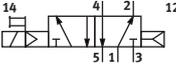
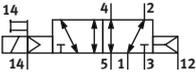
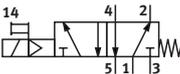
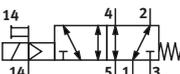
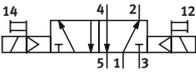
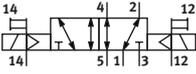
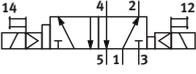
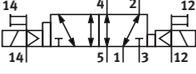
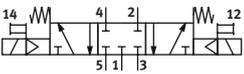
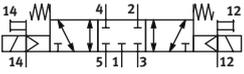
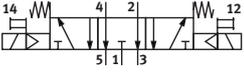
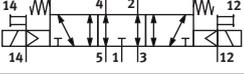
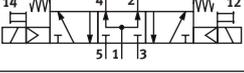
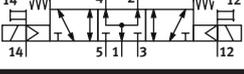
Download CAD data → www.festo.com



[1] Manual override [2] Captive retaining screws [3] Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|-----------------|----|----|----|----|----|----|-----|----|----|-----|------|------|-----|-------|------|----|----|----|
| JMN1H-5/2- ... | 54 | 38 | 9 | 30 | M6 | M5 | 116 | 84 | 48 | 9.5 | 56.5 | 15.3 | 165 | 123.4 | 61.7 | 48 | 24 | 98 |
| JMN1DH-5/2- ... | | | | | | | | | | | | | | 123.4 | 61.7 | | | |
| MN1H-5/3... | | | | | | | | | | | | | | 158 | 79 | | | |

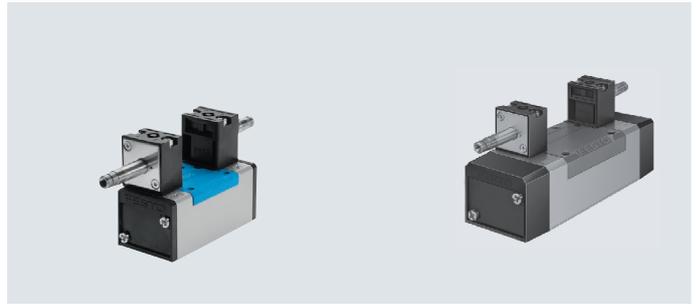
Ordering data – Width 52 mm

| Ordering data – Valves with armature tube for solenoid coil MSN1) | | | | | | |
|--|--|------------------|------------|----------|---------------|----------------------------|
| Circuit symbol | Description | Pilot air supply | Weight [g] | ISO code | Part no. | Type |
| 5/2-way valve, single solenoid | | | | | | |
|  | Pneumatic spring return | Internal | 710 | 251 | 159700 | MN1H-5/2-D-2-C |
|  | Pneumatic spring return | External | 710 | 264 | 159698 | MN1H-5/2-D-2-S-C |
|  | Mechanical spring return | Internal | 710 | 252 | 159699 | MN1H-5/2-D-2-FR-C |
|  | Mechanical spring return | External | 710 | 269 | 159718 | MN1H-5/2-D-2-FR-S-C |
| 5/2-way valve, double solenoid | | | | | | |
|  | – | Internal | 940 | 255 | 159702 | JMN1H-5/2-D-2-C |
|  | – | External | 940 | 269 | 159701 | JMN1H-5/2-D-2-S-C |
|  | With dominant signal at 14 | Internal | 940 | 269 | 159703 | JMN1DH-5/2-D-2-C |
|  | With dominant signal at 14 | External | 940 | 269 | 159719 | JMN1DH-5/2-D-2-S-C |
| 5/3-way valve | | | | | | |
|  | Normally closed, mechanical spring return | Internal | 940 | 256 | 159693 | MN1H-5/3G-D-2-C |
|  | Normally closed, mechanical spring return | External | 940 | 269 | 159692 | MN1H-5/3G-D-2-S-C |
|  | Normally exhausted, mechanical spring return | Internal | 940 | 257 | 159695 | MN1H-5/3E-D-2-C |
|  | Normally exhausted, mechanical spring return | External | 940 | 269 | 159694 | MN1H-5/3E-D-2-S-C |
|  | Normally open, mechanical spring return | Internal | 940 | 258 | 159697 | MN1H-5/3B-D-2-C |
|  | Normally open, mechanical spring return | External | 940 | 269 | 159696 | MN1H-5/3B-D-2-S-C |

1) Solenoid coils → Page 170

Datasheet – Width 42 mm

-  - Flow rate
1200 l/min



| General technical data | | MFH- ... -C, JMF- ... -C | MFH- ... -EX, JMF- ... -EX |
|---------------------------------------|--------------------------------|--|--|
| Type | | | |
| Design | | Piston spool | Piston spool |
| Sealing principle | | Soft | Soft |
| Actuation type | | Electrical | Electrical |
| Type of control | | Piloted | Piloted |
| Flow direction | With external pilot air supply | Reversible | Reversible |
| | With internal pilot air supply | Not reversible | Not reversible |
| Exhaust air function | | Can be throttled | Can be throttled |
| Manual override | | Non-detenting, detenting via accessory | Non-detenting, detenting via accessory |
| Type of mounting | | On sub-base, with through-hole | |
| Mounting position | | Any | Any |
| Nominal width | [mm] | 8 | 8 |
| Overlap | | Positive overlap | Positive overlap |
| Width | [mm] | 42 | 42 |
| Grid dimension | [mm] | 43 | 43 |
| Pneumatic port | 1, 2, 3, 4, 5, 12, 14 | Sub-base size 1 to ISO 5599-1 | Sub-base size 1 to ISO 5599-1 |
| Pilot exhaust air port 82 | | – | – |
| Pilot exhaust air port 84 | | – | – |
| Noise level | [dB (A)] | 85 | 85 |
| Conforms to standard | | ISO 5599-1 | ISO 5599-1 |
| Maritime classification ¹⁾ | | See certificate | – |
| Certificate-issuing authority | | DNV-TAA000032X | – |

1) More information www.festo.com/catalogue/... → Support/Downloads.

| Flow rates | | 5/2-way valve, single solenoid | 5/2-way valve, double solenoid | 5/3-way valve |
|----------------------------|---------|--------------------------------|--------------------------------|---------------|
| Valve function | | | | |
| Standard nominal flow rate | [l/min] | 1200 | | |

| Switching times [ms] | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|---------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | MFH-5/2-... | 23 | 35 | – | – |
| | MFH-5/2-D-1-FR-... | 16 | 45 | – | – |
| 5/2-way valve, double solenoid | JMFH-... | – | – | 16 | – |
| | JMFDH-... | – | – | 16 | 13 |
| 5/3-way valve | MFH-5/3G-D-1-C | 18 | 35 | – | – |
| | MFH-5/3G-D-1-C-EX | 18 | 35 | – | – |
| | MFH-5/3G-D-1-S-C | 18 | 36 | – | – |
| | MFH-5/3G-D-1-S-C-EX | 18 | 36 | – | – |
| | MFH-5/3E-D-1-C | 18 | 36 | – | – |
| | MFH-5/3E-D-1-C-EX | 18 | 36 | – | – |
| | MFH-5/3E-D-1-S-C | 18 | 36 | – | – |
| | MFH-5/3E-D-1-S-C-EX | 18 | 36 | – | – |
| | MFH-5/3B-D-1-C | 18 | 36 | – | – |
| | MFH-5/3B-D-1-C-EX | 18 | 36 | – | – |
| | MFH-5/3B-D-1-S-C | 18 | 36 | – | – |
| | MFH-5/3B-D-1-S-C-EX | 18 | 36 | – | – |

Datasheet – Width 42 mm

| | |
|--|---|
| ATEX | |
| Type | MFH- ... -EX, JMFH- ... -EX, JMFDH- ... -EX |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T4 Gb |
| ATEX category for dust | II 2D |
| Type of ignition protection for dust | Ex h IIIC T105°C Db |
| Explosion-proof ambient temperature | [°C] -5 ≤ Ta ≤ +40 |
| Explosion protection certification outside EU | EPL Db (GB) |
| | EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) ¹⁾ | To UK explosion regulations |

1) More information www.festo.com/catalogue/... → Support/Downloads.

| | | | |
|---|----------------------------|--|-------------------|
| Operating and environmental conditions | | | |
| Reset method | | Pneumatic spring | Mechanical spring |
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Pilot medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Note on the operating/pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) | |
| Operating pressure | Internal pilot air supply | [bar] | 2 ... 10 |
| | External pilot air supply | [bar] | -0.9 ... +16 |
| Pilot pressure | | [bar] | 2 ... 10 |
| Ambient temperature | | [°C] | -5 ... +40 |
| Temperature of medium | MFH- ... -C, JMF- ... -C | [°C] | -10 ... +60 |
| | MFH- ... -EX, JMF- ... -EX | [°C] | -5 ... +40 |

| | | |
|--|------|--|
| Safety characteristics | | |
| Max. positive test pulse with 0 signal | [µs] | 2200 |
| Max. negative test pulse with 1 signal | [µs] | 3700 |
| Shock resistance | | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 |
| Vibration resistant | | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 |

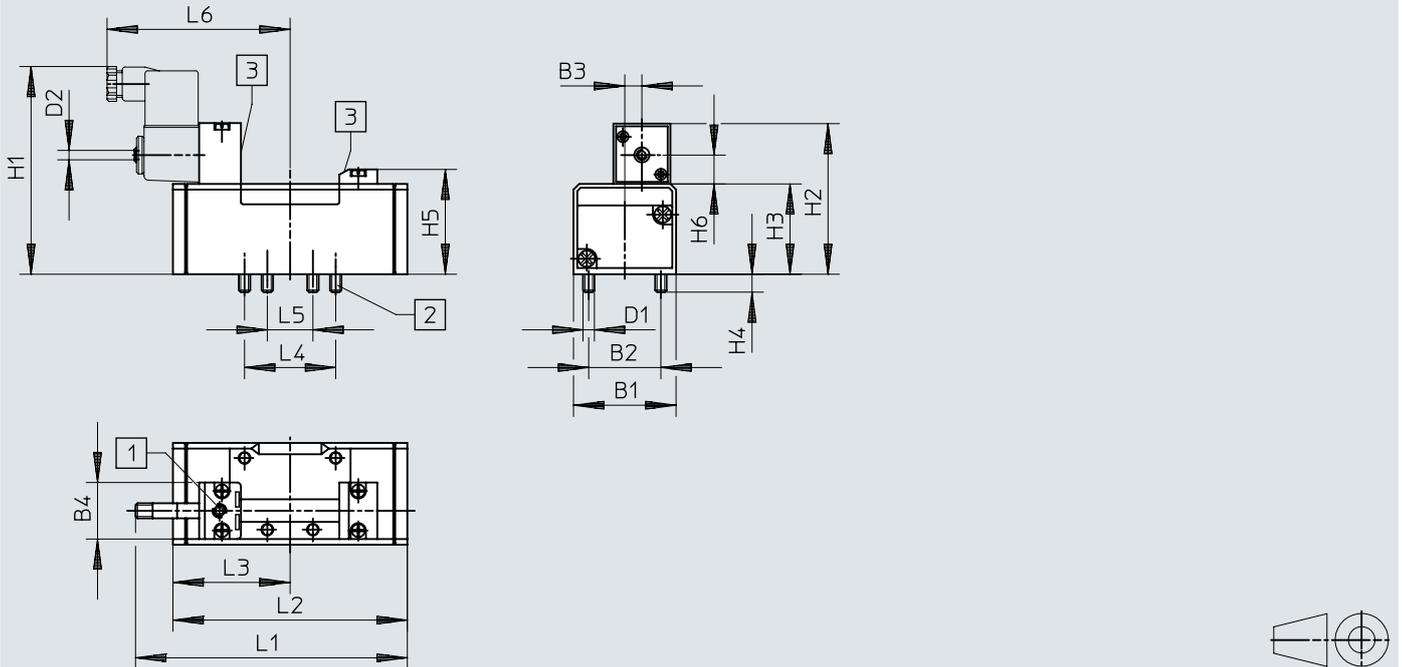
| | |
|----------------------------------|--------------------------------------|
| Electrical data | |
| Electrical connection | Via F coil, to be ordered separately |
| Degree of protection to EN 60529 | IP65 |

| | |
|------------------------|--------------------|
| Materials | |
| Housing | Die-cast aluminium |
| Seals | HNBR, NBR |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Datasheet – Width 42 mm

Dimensions – 5/2-way valves, single solenoid

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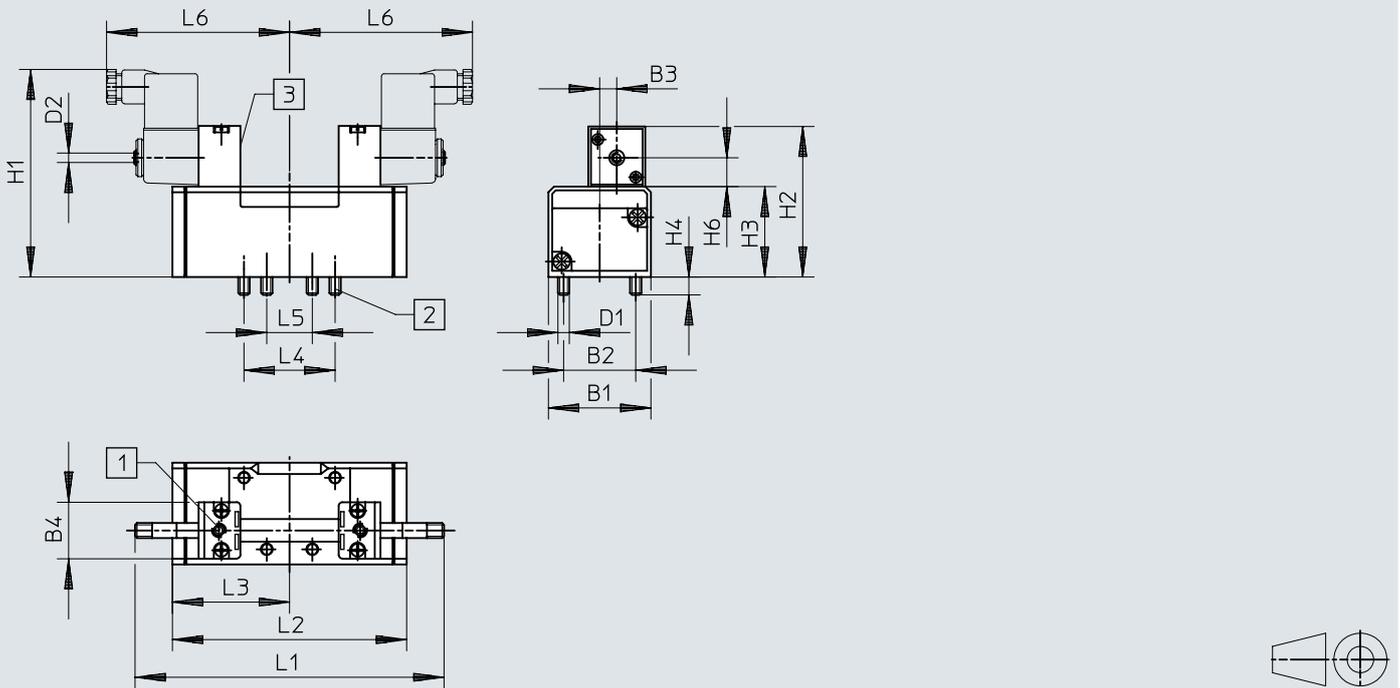
[1] Manual override [2] Captive retaining screws [3] Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|-----------------------|----|----|----|----|----|----|-----|------|----|----|------|------|-------|------|------|----|----|----|
| MFH-5/2- ... | 42 | 28 | 6 | 30 | M5 | M5 | 100 | 70.3 | 38 | 9 | 46.5 | 13.5 | 115 | 87.6 | 43.8 | 36 | 18 | 89 |
| MFH-5/2- ... -FR- ... | | | | | | | | | | | | | 125.6 | 98 | | | | |

Datasheet – Width 42 mm

Dimensions – 5/2-way valves, double solenoid, 5/3-way valves

Download CAD data → www.festo.com



[1] Manual override [2] Captive retaining screws [3] Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------------|----|----|----|----|----|----|-----|------|----|----|----|------|-------|-------|------|----|----|----|
| JMFH-5/2- ... | 42 | 28 | 6 | 30 | M5 | M5 | 100 | 70.3 | 38 | 9 | – | 13.5 | 142.6 | 87.6 | 43.8 | 36 | 18 | 89 |
| JMFDH-5/2- ... | | | | | | | | | | | | | | 87.6 | 43.8 | | | |
| MFH-5/3... | | | | | | | | | | | | | | 108.4 | 54.2 | | | |

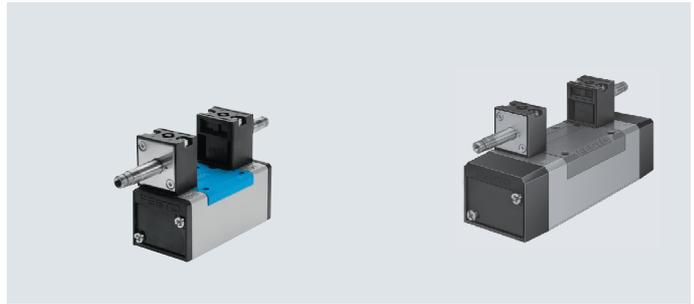
Ordering data – Width 42 mm

| Ordering data – Valves with armature tube for solenoid coil MSF1 | | | | | | | |
|--|--|------------------|------------|----------|-------------------------|----------|---------------------|
| Circuit symbol | Description | Pilot air supply | Weight [g] | ISO code | | Part no. | Type |
| 5/2-way valve, monostable | | | | | | | |
| | Pneumatic spring return | Internal | 390 | 151 | – | 150981 | MFH-5/2-D-1-C |
| | | | | | ATEX category → page 40 | 535954 | MFH-5/2-D-1-C-EX |
| | Pneumatic spring return | External | 390 | 164 | – | 152562 | MFH-5/2-D-1-S-C |
| | | | | | ATEX category → page 40 | 535957 | MFH-5/2-D-1-S-C-EX |
| | Mechanical spring return | Internal | 390 | 152 | – | 151016 | MFH-5/2-D-1-FR-C |
| | | | | | ATEX category → page 40 | 535960 | MFH-5/2-D-1-FR-C-EX |
| | Mechanical spring return | External | 390 | 169 | – | 188510 | MFH-5/2-D-1-FR-S-C |
| 5/2-way valve, double solenoid | | | | | | | |
| | – | Internal | 490 | 155 | – | 150980 | JMFH-5/2-D-1-C |
| | | | | | ATEX category → page 40 | 535963 | JMFH-5/2-D-1-C-EX |
| | – | External | 490 | 169 | – | 152563 | JMFH-5/2-D-1-S-C |
| | | | | | ATEX category → page 40 | 535966 | JMFH-5/2-D-1-S-C-EX |
| | With dominant signal at 14 | Internal | 490 | 169 | – | 151019 | JMFDH-5/2-D-1-C |
| | | | | | ATEX category → page 40 | 536071 | JMFDH-5/2-D-1-C-EX |
| 5/3-way valve | | | | | | | |
| | Normally closed, mechanical spring return | Internal | 520 | 156 | – | 150982 | MFH-5/3G-D-1-C |
| | | | | | ATEX category → page 40 | 535969 | MFH-5/3G-D-1-C-EX |
| | Normally closed, mechanical spring return | External | 520 | 169 | – | 152564 | MFH-5/3G-D-1-S-C |
| | | | | | ATEX category → page 40 | 535972 | MFH-5/3G-D-1-S-C-EX |
| | Normally exhausted, mechanical spring return | Internal | 520 | 157 | – | 150983 | MFH-5/3E-D-1-C |
| | | | | | ATEX category → page 40 | 535975 | MFH-5/3E-D-1-C-EX |
| | Normally exhausted, mechanical spring return | External | 520 | 169 | – | 152565 | MFH-5/3E-D-1-S-C |
| | | | | | ATEX category → page 40 | 535978 | MFH-5/3E-D-1-S-C-EX |
| | Normally open, mechanical spring return | Internal | 520 | 158 | – | 150984 | MFH-5/3B-D-1-C |
| | | | | | ATEX category → page 40 | 535981 | MFH-5/3B-D-1-C-EX |
| | Normally open, mechanical spring return | External | 520 | 169 | – | 152566 | MFH-5/3B-D-1-S-C |
| | | | | | ATEX category → page 40 | 535984 | MFH-5/3B-D-1-S-C-EX |

1) Solenoid coils → Page 170

Datasheet – Width 52 mm

-  - Flow rate
2300 l/min



| General technical data | | MFH- ... -C, JMF- ... -C | MFH- ... -EX, JMF- ... -EX |
|---------------------------------------|--------------------------------|--|--|
| Type | | | |
| Design | | Piston spool | Piston spool |
| Sealing principle | | Soft | Soft |
| Actuation type | | Electrical | Electrical |
| Type of control | | Piloted | Piloted |
| Flow direction | With external pilot air supply | Reversible | Reversible |
| | With internal pilot air supply | Not reversible | Not reversible |
| Exhaust air function | | Can be throttled | Can be throttled |
| Manual override | | Non-detenting, detenting via accessory | Non-detenting, detenting via accessory |
| Type of mounting | | On sub-base, with through-hole and screw | |
| Mounting position | | Any | Any |
| Nominal width | [mm] | 11.5 | 11.5 |
| Overlap | | Positive overlap | Positive overlap |
| Width | [mm] | 52 | 52 |
| Grid dimension | [mm] | 56 | 56 |
| Pneumatic ports | | Sub-base size 2 to ISO 5599-1 | Sub-base size 2 to ISO 5599-1 |
| Pneumatic port | 1, 2, 3, 4, 5, 14 | Sub-base size 2 to ISO 5599-1 | Sub-base size 2 to ISO 5599-1 |
| Pneumatic port 12 | | Sub-base size 2 to ISO 5599-1 | Sub-base size 2 to ISO 5599-1 |
| | 5/2-way valve, single solenoid | – | |
| Pilot exhaust air port 82 | | M5 | M5 |
| | 5/2-way valve, single solenoid | – | – |
| Pilot exhaust air port 84 | | M5 | M5 |
| Noise level | [dB (A)] | 85 | 85 |
| Conforms to standard | | ISO 5599-1 | ISO 5599-1 |
| Maritime classification ¹⁾ | | See certificate | – |
| Certificate-issuing authority | | DNV-TAA000032X | – |

1) More information www.festo.com/catalogue/... → Support/Downloads.

| Flow rates | | 5/2-way valve, single solenoid | 5/2-way valve, double solenoid | 5/3-way valve |
|----------------------------|---------|--------------------------------|--------------------------------|---------------|
| Valve function | | | | |
| Standard nominal flow rate | [l/min] | 2300 | | |

| Switching times [ms] | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|-------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | MFH-5/2-... | 48 | 71 | – | – |
| | MFH-5/2-D-2-FR... | 27 | 73 | – | – |
| 5/2-way valve, double solenoid | JMFH-... | – | – | 18 | – |
| | JMFDH-... | – | – | 18 | 18 |
| 5/3-way valve | MFH-5/3G-... | 33 | 63 | – | – |
| | MFH-5/3E-... | 35 | 67 | – | – |
| | MFH-5/3B-... | 35 | 69 | – | – |

Datasheet – Width 52 mm

| | |
|--|---|
| ATEX | |
| Type | MFH- ... -EX, JMFH- ... -EX, JMFDH- ... -EX |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T4 Gb |
| ATEX category for dust | II 2D |
| Type of ignition protection for dust | Ex h IIIC T105°C Db |
| Explosion-proof ambient temperature | [°C] -5 ≤ Ta ≤ +40 |
| Explosion protection certification outside EU | EPL Db (GB) |
| | EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) 1) | To UK explosion regulations |

1) More information www.festo.com/catalogue/... → Support/Downloads.

| | | | | |
|---|---------------------------|--|----------------|-------------------|
| Operating and environmental conditions | | | | |
| Reset method | | Pneumatic spring | | Mechanical spring |
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | | |
| Pilot medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | | |
| Note on the operating/pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) | | |
| Operating pressure | Internal pilot air supply | [MPa] | 0.2 ... 1 | 0.3 ... 1 |
| | | [bar] | 2 ... 10 | 3 ... 10 |
| | External pilot air supply | [MPa] | -0.09 ... +1.6 | -0.09 ... +1.6 |
| | | [bar] | -0.9 ... +16 | -0.9 ... +16 |
| Pilot pressure | [bar] | 2 ... 10 | 3 ... 10 | |
| Ambient temperature | [°C] | -5 ... +40 | | |
| Temperature of medium | [°C] | -10 ... +60 | | |

| | | |
|--|--|------|
| Safety characteristics | | |
| Max. positive test pulse with 0 signal | [µs] | 2200 |
| Max. negative test pulse with 1 signal | [µs] | 3700 |
| Shock resistance | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | |
| Vibration resistant | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | |

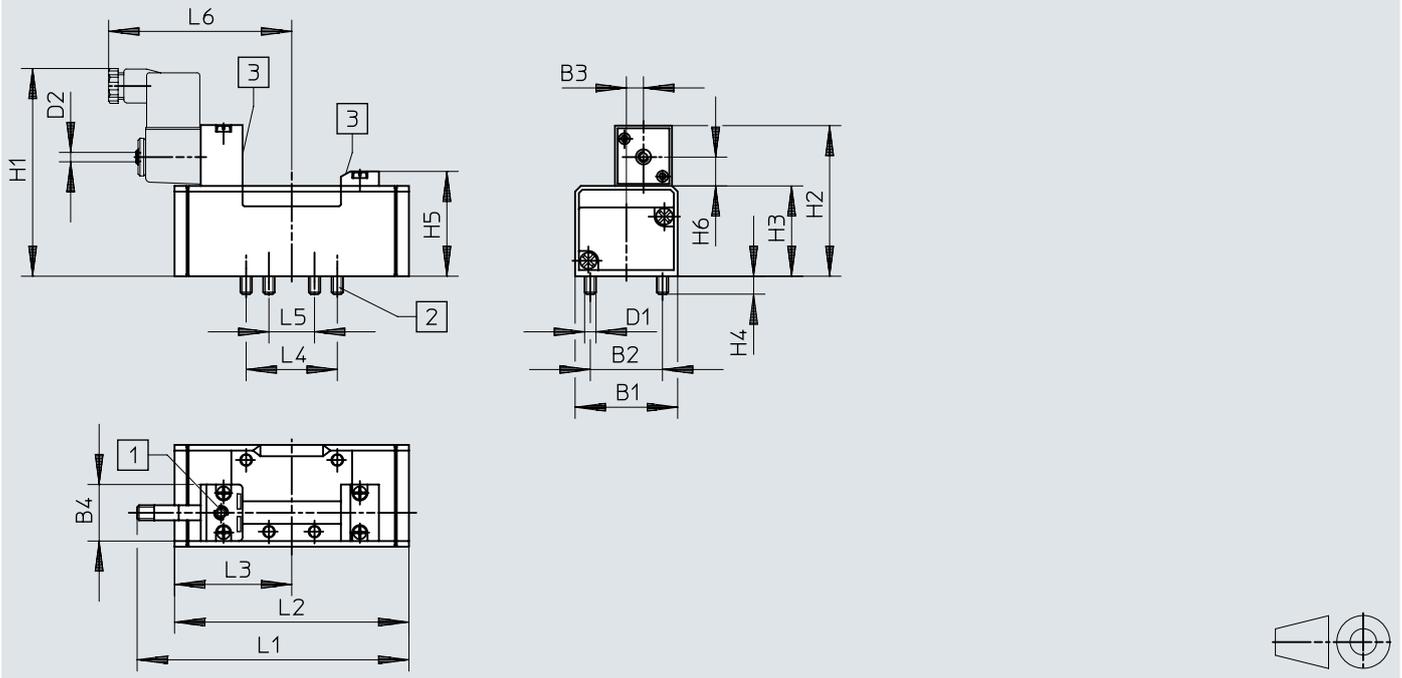
| | |
|----------------------------------|--------------------------------------|
| Electrical data | |
| Electrical connection | Via F coil, to be ordered separately |
| Degree of protection to EN 60529 | IP65 |

| | |
|------------------------|--------------------|
| Materials | |
| Housing | Die-cast aluminium |
| Seals | HNBR, NBR |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Datasheet – Width 52 mm

Dimensions – 5/2-way valves, single solenoid

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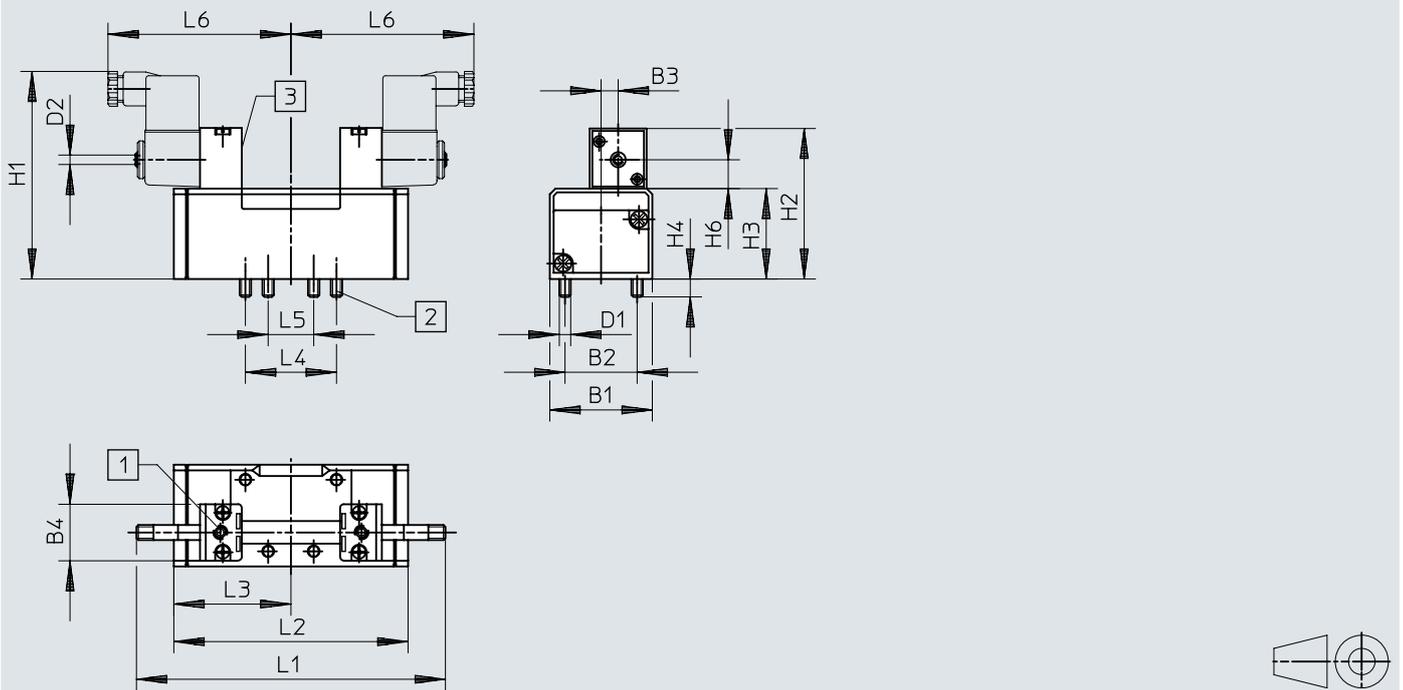
[1] Manual override [2] Captive retaining screws [3] Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|-----------------------|----|----|----|----|----|----|-----|------|----|-----|------|------|-------|-------|------|----|----|----|
| MFH-5/2- ... | 54 | 38 | 9 | 30 | M6 | M5 | 110 | 80.3 | 48 | 9.5 | 56.5 | 13.5 | 142 | 123.4 | 61.7 | 48 | 24 | 98 |
| MFH-5/2- ... -FR- ... | | | | | | | | | | | | | 159.4 | 140.7 | | | | |

Datasheet – Width 52 mm

Dimensions – 5/2-way valves, double solenoid, 5/3-way valves

Download CAD data → www.festo.com



[1] Manual override [2] Captive retaining screws [3] Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------------|----|----|----|----|----|----|-----|------|----|-----|----|------|-------|-------|------|----|----|----|
| JMFH-5/2- ... | 54 | 38 | 9 | 30 | M6 | M5 | 110 | 80.3 | 48 | 9.5 | - | 13.5 | 160.4 | 123.4 | 61.7 | 48 | 24 | 97 |
| JMFDH-5/2- ... | | | | | | | | | | | | | 160.4 | 123.4 | 61.7 | | | 97 |
| MFH-5/3... | | | | | | | | | | | | | 160 | 158 | 79 | | | 98 |

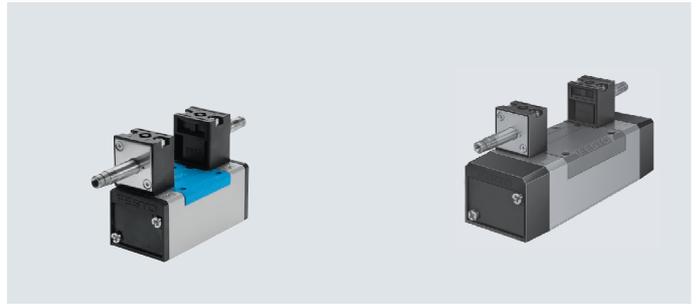
Ordering data – Width 52 mm

| Ordering data – Valves with armature tube for solenoid coil MSF1) | | | | | | | |
|---|--|------------------|------------|----------|-------------------------|----------|---------------------|
| Circuit symbol | Description | Pilot air supply | Weight [g] | ISO code | | Part no. | Type |
| 5/2-way valve, single solenoid | | | | | | | |
| | Pneumatic spring return | Internal | 650 | 251 | – | 151851 | MFH-5/2-D-2-C |
| | | | | | ATEX category → page 45 | 535955 | MFH-5/2-D-2-C-EX |
| | Pneumatic spring return | External | 650 | 264 | – | 151022 | MFH-5/2-D-2-S-C |
| | | | | | ATEX category → page 45 | 535958 | MFH-5/2-D-2-S-C-EX |
| | Mechanical spring return | Internal | 650 | 252 | – | 151709 | MFH-5/2-D-2-FR-C |
| | | | | | ATEX category → page 45 | 535961 | MFH-5/2-D-2-FR-C-EX |
| 5/2-way valve, double solenoid | | | | | | | |
| | – | Internal | 820 | 255 | – | 151852 | JMFH-5/2-D-2-C |
| | | | | | ATEX category → page 45 | 535964 | JMFH-5/2-D-2-C-EX |
| | – | External | 820 | 269 | – | 151023 | JMFH-5/2-D-2-S-C |
| | | | | | ATEX category → page 45 | 535967 | JMFH-5/2-D-2-S-C-EX |
| | With dominant signal at 14 | Internal | 820 | 269 | – | 151853 | JMFDH-5/2-D-2-C |
| | | | | | ATEX category → page 45 | 536072 | JMFDH-5/2-D-2-C-EX |
| 5/3-way valve | | | | | | | |
| | Normally closed, mechanical spring return | Internal | 820 | 256 | – | 151854 | MFH-5/3G-D-2-C |
| | | | | | ATEX category → page 45 | 535970 | MFH-5/3G-D-2-C-EX |
| | Normally closed, mechanical spring return | External | 820 | 269 | – | 151024 | MFH-5/3G-D-2-S-C |
| | | | | | ATEX category → page 45 | 535973 | MFH-5/3G-D-2-S-C-EX |
| | Normally exhausted, mechanical spring return | Internal | 820 | 257 | – | 151855 | MFH-5/3E-D-2-C |
| | | | | | ATEX category → page 45 | 535976 | MFH-5/3E-D-2-C-EX |
| | Normally exhausted, mechanical spring return | External | 820 | 269 | – | 151025 | MFH-5/3E-D-2-S-C |
| | | | | | ATEX category → page 45 | 535979 | MFH-5/3E-D-2-S-C-EX |
| | Normally open, mechanical spring return | Internal | 820 | 258 | – | 151856 | MFH-5/3B-D-2-C |
| | | | | | ATEX category → page 45 | 535982 | MFH-5/3B-D-2-C-EX |
| | Normally open, mechanical spring return | External | 820 | 269 | – | 151026 | MFH-5/3B-D-2-S-C |
| | | | | | ATEX category → page 45 | 535985 | MFH-5/3B-D-2-S-C-EX |

1) Solenoid coils → Page 170

Datasheet – Width 65 mm

-  - Flow rate
Up to 4600 l/min



General technical data

| Type | | |
|---------------------------------------|--------------------------------|--|
| Design | | Piston spool |
| Sealing principle | | Soft |
| Actuation type | | Electrical |
| Type of control | | Piloted |
| Flow direction | With external pilot air supply | Reversible |
| | With internal pilot air supply | Not reversible |
| Suitable for vacuum | External pilot air supply | Yes |
| | External pilot air supply | No |
| Exhaust air function | | Can be throttled |
| Manual override | | Non-detenting, detenting via accessory |
| Type of mounting | | On sub-base, with through-hole and screw |
| Mounting position | | Any |
| Nominal width | [mm] | 14.5 |
| Overlap | | Positive overlap |
| Width | [mm] | 65 |
| Grid dimension | [mm] | 71 |
| Pneumatic port | 1, 2, 3, 4, 5, 14 | Sub-base size 3 to ISO 5599-1 |
| Pneumatic port 12 | 5/2-way valve, single solenoid | Sub-base size 3 to ISO 5599-1 |
| Pilot exhaust air port 82 | 5/2-way valve, single solenoid | – |
| Pilot exhaust air port 84 | 5/2-way valve, single solenoid | M5 |
| Noise level | [dB (A)] | 85 |
| Conforms to standard | | ISO 5599-1 |
| Maritime classification ¹⁾ | MFH- ... -C, JMF ... -C | See certificate |
| | MFH- ... -EX, JMF ... -EX | – |
| Certificate-issuing authority | MFH- ... -C, JMF ... -C | DNV-TAA000032X |
| | MFH- ... -EX, JMF ... -EX | – |

1) More information www.festo.com/catalogue/... → Support/Downloads.

Flow rates

| Valve function | 5/2-way valve | 5/3-way valve | | | |
|----------------------------|---------------|-----------------|--------------------|---------------|------|
| | | Normally closed | Normally exhausted | Normally open | |
| Standard nominal flow rate | [l/min] | 4500 | 4100 | 4600 | 4000 |

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|--------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | MFH-5/2-... | 60 | 66 | – | – |
| | MFH-5/2-...-S-C | 33 | 74 | – | – |
| | MFH-5/2-D-1-FR-... | 28 | 79 | – | – |
| 5/2-way valve, double solenoid | JMFH-... | – | – | 18 | – |
| | JMFDH-... | – | – | 18 | 18 |
| | JMFDH-5/2-D-3-S-C | – | – | 24 | 21 |
| 5/3-way valve | MFH-5/3G-... | 36 | 77 | – | – |
| | MFH-5/3E-... | 37 | 78 | – | – |
| | MFH-5/3B-... | 36 | 75 | – | – |

Datasheet – Width 65 mm

| | |
|--|--|
| ATEX | |
| Type | MFH- ... -EX, JMFDH- ... -EX, JMFDH- ... -EX |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T4 Gb |
| ATEX category for dust | II 2D |
| Type of ignition protection for dust | Ex h IIIC T105°C Db |
| Explosion-proof ambient temperature | [°C] -5 ≤ Ta ≤ +40 |
| Explosion protection certification outside EU | EPL Db (GB) EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) 1) | To UK explosion regulations |

1) More information www.festo.com/catalogue/... → Support/Downloads.

| | | | |
|---|---------------------------|--|-------------------|
| Operating and environmental conditions | | | |
| Reset method | | Pneumatic spring | Mechanical spring |
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Pilot medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Note on the operating/pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) | |
| Operating pressure | Internal pilot air supply | [MPa] | 0.2 ... 1 |
| | | [bar] | 2 ... 10 |
| | External pilot air supply | [MPa] | -0.09 ... +1.6 |
| | | [bar] | -0.9 ... +16 |
| Pilot pressure | | [bar] | 2 ... 10 |
| Ambient temperature | | [°C] | -5 ... +40 |
| | JMFDH-5/2-D-3-S-C | [°C] | -5 ... +50 |
| | MFH-5/2-D-3-FRS-C | [°C] | -5 ... +50 |
| Temperature of medium | | [°C] | -10 ... +60 |
| | JMFDH-5/2-D-3-S-C | [°C] | -5 ... +50 |
| | MFH-5/2-D-3-FRS-C | [°C] | -5 ... +50 |

| | | | |
|--|------|--|--|
| Safety characteristics | | | |
| Max. positive test pulse with 0 signal | [µs] | 2200 | |
| Max. negative test pulse with 1 signal | [µs] | 3700 | |
| Shock resistance | | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | |
| Vibration resistant | | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | |

| | | | |
|--|------|--|--|
| Safety data – JMFDH-5/2-D-3-S-C and MFH-5/2-D-3-FRS-C | | | |
| Max. positive test pulse with 0 signal | [µs] | 3700 | |
| Max. negative test pulse with 1 signal | [µs] | 4600 | |
| Shock resistance | | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | |
| Vibration resistant | | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | |

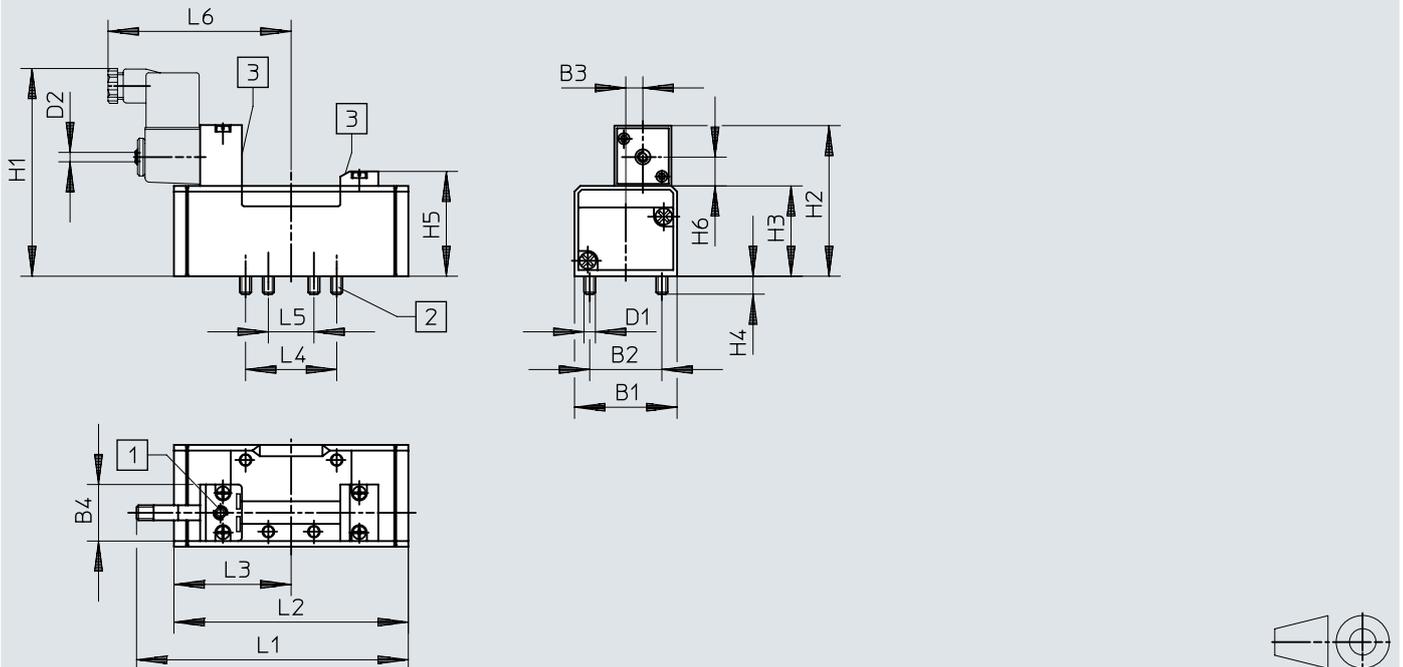
| | | | |
|----------------------------------|-------------------|---------------------------------------|--|
| Electrical data | | | |
| Electrical connection | | Via F coil, to be ordered separately | |
| | JMFDH-5/2-D-3-S-C | Via N1 coil, to be ordered separately | |
| | MFH-5/2-D-3-FRS-C | | |
| Degree of protection to EN 60529 | | IP65 | |

| | | | |
|------------------------|--|--------------------|--|
| Materials | | | |
| Housing | | Die-cast aluminium | |
| Seals | | HNBR, NBR | |
| Note on materials | | RoHS-compliant | |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L | |

Datasheet – Width 65 mm

Dimensions – 5/2-way valves, single solenoid

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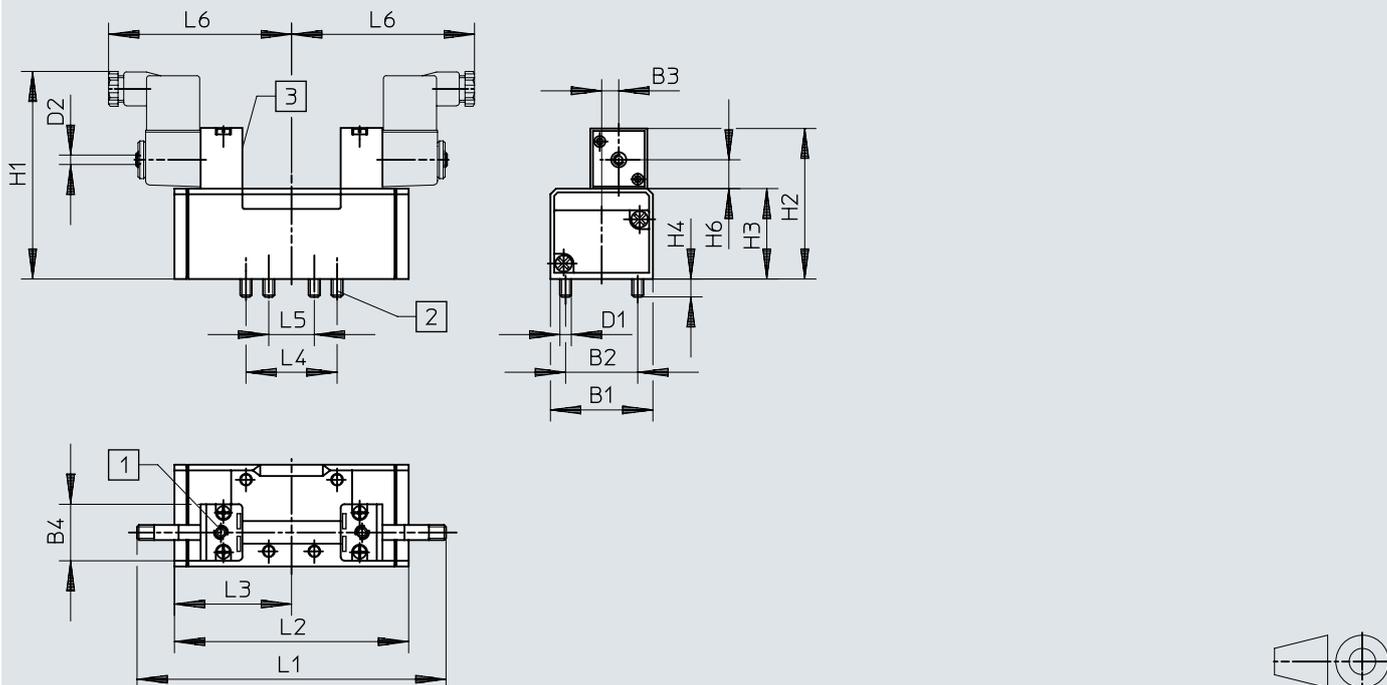
[1] Manual override [2] Captive retaining screws [3] Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|-----------------------|----|----|----|----|----|----|-----|------|----|----|------|------|-----|-------|------|----|----|-----|
| MFH-5/2- ... | 65 | 48 | 12 | 30 | M8 | M5 | 117 | 87.3 | 55 | 12 | 63.5 | 13.5 | 163 | 145.4 | 72.7 | 64 | 32 | 109 |
| MFH-5/2- ... -FR- ... | | | | | | | | | | | | | 182 | 164.7 | | | | |

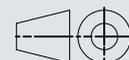
Datasheet – Width 65 mm

Dimensions – 5/2-way valves, double solenoid, 5/3-way valves

Download CAD data → www.festo.com



[1] Manual override [2] Captive retaining screws [3] Slot for inscription label



| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------------|----|----|----|----|----|----|-----|------|----|----|----|------|-----|-------|------|----|----|-----|
| JMFH-5/2- ... | 65 | 48 | 12 | 30 | M8 | M5 | 117 | 87.3 | 55 | 12 | – | 13.5 | 181 | 145.4 | 72.7 | 64 | 32 | 109 |
| JMFDH-5/2- ... | | | | | | | | | | | | | | 145.4 | 72.7 | | | |
| MFH-5/3... | | | | | | | | | | | | | | 184 | 92 | | | |

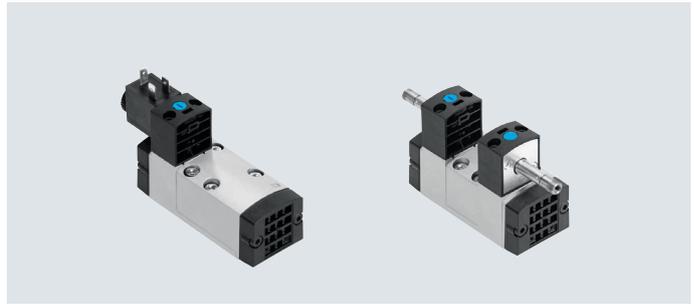
Ordering data – Width 65 mm

| Ordering data – Valves with armature tube for solenoid coil MSF1) | | | | | | | |
|---|--|------------------|------------|----------|----------------------------|----------|---------------------|
| Circuit symbol | Description | Pilot air supply | Weight [g] | ISO code | | Part no. | Type |
| 5/2-way valve, single solenoid | | | | | | | |
| | Pneumatic spring return | Internal | 960 | 351 | – | 151870 | MFH-5/2-D-3-C |
| | | | | | ATEX category → page 50 | 535956 | MFH-5/2-D-3-C-EX |
| | Pneumatic spring return | External | 960 | 364 | – | 151032 | MFH-5/2-D-3-S-C |
| | | | | | ATEX category → page 50 | 535959 | MFH-5/2-D-3-S-C-EX |
| | Mechanical spring return | Internal | 960 | 352 | – | 151711 | MFH-5/2-D-3-FR-C |
| | | | | | ATEX category → page 50 | 535962 | MFH-5/2-D-3-FR-C-EX |
| | Mechanical spring return | External | 1000 | 369 | – | 8221574 | MFH-5/2-D-3-FR-S-C |
| 5/2-way valve, double solenoid | | | | | | | |
| | – | Internal | 1060 | 355 | – | 151871 | JMFH-5/2-D-3-C |
| | | | | | ATEX category → page 50 | 535965 | JMFH-5/2-D-3-C-EX |
| | – | External | 1060 | 369 | – | 151033 | JMFH-5/2-D-3-S-C |
| | | | | | ATEX category → page 50 | 535968 | JMFH-5/2-D-3-S-C-EX |
| | With dominant signal at 14 | Internal | 1060 | 369 | – | 151872 | JMFDH-5/2-D-3-C |
| | | | | | ATEX category → page 50 | 536073 | JMFDH-5/2-D-3-C-EX |
| | With dominant signal at 14 | External | 1090 | 369 | – | 8221573 | JMFDH-5/2-D-3-S-C |
| 5/3-way valve | | | | | | | |
| | Normally closed, mechanical spring return | Internal | 1040 | 356 | – | 151873 | MFH-5/3G-D-3-C |
| | | | | | ATEX category → page 50 | 535971 | MFH-5/3G-D-3-C-EX |
| | Normally closed, mechanical spring return | External | 1040 | 369 | – | 151034 | MFH-5/3G-D-3-S-C |
| | | | | | ATEX category → page 50 | 535974 | MFH-5/3G-D-3-S-C-EX |
| | Normally exhausted, mechanical spring return | Internal | 1040 | 357 | – | 151874 | MFH-5/3E-D-3-C |
| | | | | | ATEX category → page 50 | 535977 | MFH-5/3E-D-3-C-EX |
| | Normally exhausted, mechanical spring return | External | 1040 | 369 | – | 151035 | MFH-5/3E-D-3-S-C |
| | | | | | ATEX category → page 50 | 535980 | MFH-5/3E-D-3-S-C-EX |
| | Normally open, mechanical spring return | Internal | 1040 | 358 | – | 151875 | MFH-5/3B-D-3-C |
| | | | | | ATEX category → page 50 | 535983 | MFH-5/3B-D-3-C-EX |
| | Normally open, mechanical spring return | External | 1040 | 369 | – | 151036 | MFH-5/3B-D-3-S-C |
| | | | | | ATEX category → page 50 | 535986 | MFH-5/3B-D-3-S-C-EX |

1) Solenoid coils → Page 170

Datasheet – Width 42 mm

-  - Flow rate
1800 l/min



General technical data

| | | |
|---|---|-------------------------------|
| Design | Piston spool | |
| Sealing principle | Soft | |
| Actuation type | Electrical | |
| Type of control | Piloted | |
| Flow direction | External pilot air supply | Reversible |
| | Internal pilot air supply | Not reversible |
| Suitable for vacuum | External pilot air supply, pneumatic spring return or single solenoid | Yes |
| | External pilot air supply, pneumatic spring return | No |
| | Internal pilot air supply | No |
| Exhaust air function | Via individual sub-base | |
| Type of mounting | On sub-base | |
| Mounting position | Any | |
| Max. tightening torque for valve mounting | [Nm] | 1 |
| Nominal width | [mm] | 8 |
| Overlap | Positive overlap | |
| Width | [mm] | 42 |
| Grid dimension | [mm] | 43 |
| Pneumatic port | 1, 2, 3, 4, 5, 12, 14 | Sub-base size 1 to ISO 5599-1 |
| Noise level | [dB (A)] | 85 |
| Conforms to standard | ISO 5599-1 | |
| Pilot interface | To ISO 15218 | |

Datasheet – Width 42 mm

| Flow rate values – 2x2/2-way valves | | |
|--|----------|-------|
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 1700 |
| Flow rate of valve | [l/min] | 1500 |
| Flow rate of valve on individual sub-base | [l/min] | 1300 |
| Flow rate of pneumatically linked valve | [l/min] | 1300 |
| Optimised flow rate of pneumatically linked valve | [l/min] | 1500 |
| b value | | 0.18 |
| C value | [l/sbar] | 6.503 |

| Flow rate values – 2x3/2-way valves | | Normally closed | | Normally open | | Normally open, normally closed |
|--|----------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----------------------------------|
| | | Mechanical spring return | Pneumatic spring return | Mechanical spring return | Pneumatic spring return | |
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 1400 | 1300 | 1400 | 1300 | 1400 |
| Flow rate of valve | [l/min] | 1300 | 1300 | 1300 | 1200 | 1300 |
| Flow rate of valve on individual sub-base | [l/min] | 1100 | 1200 | 1100 | 1100 | 1100 |
| Flow rate of pneumatically linked valve | [l/min] | 1100 | 1200 | 1100 | 1000 | 1100 |
| Optimised flow rate of pneumatically linked valve | [l/min] | 1200 | 1300 | 1200 | 1100 | 1200 |
| b value | | 0.18 | 0.23 | 0.21 | 0.13 | 0.2 |
| C value | [l/sbar] | 5.293 | 5.597 | 5.511 | 5.347 | 5.479 |

| Flow rate values – 5/2-way valve, single solenoid | | Mechanical spring return | Pneumatic spring return |
|--|----------|--------------------------|-------------------------|
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 1800 | 1800 |
| Flow rate of valve | [l/min] | 1700 | 1700 |
| Flow rate of valve on individual sub-base | [l/min] | 1400 | 1400 |
| Flow rate of pneumatically linked valve | [l/min] | 1400 | 1400 |
| Optimised flow rate of pneumatically linked valve | [l/min] | 1600 | 1600 |
| b value | | 1.7 | 1.6 |
| C value | [l/sbar] | 7.718 | 7.707 |

| Flow rate values – 5/2-way valve, double solenoid | | Double solenoid | Double solenoid with dominant signal |
|--|----------|-----------------|--------------------------------------|
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 1800 | 1800 |
| Flow rate of valve | [l/min] | 1700 | 1700 |
| Flow rate of valve on individual sub-base | [l/min] | 1400 | 1400 |
| Flow rate of pneumatically linked valve | [l/min] | 1400 | 1400 |
| Optimised flow rate of pneumatically linked valve | [l/min] | 1600 | 1600 |
| b value | | 1.6 | 1.5 |
| C value | [l/sbar] | 7.697 | 7.663 |

| Flow rate values – 5/3-way valve | | Normally closed | Normally exhausted | Normally pressurised |
|--|----------|-----------------|--------------------|----------------------|
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 1800 | 1800 | 1600 |
| Flow rate of valve | [l/min] | 1600 | 1600 | 1500 |
| Flow rate of valve on individual sub-base | [l/min] | 1400 | 1400 | 1300 |
| Flow rate of pneumatically linked valve | [l/min] | 1300 | 1300 | 1200 |
| Optimised flow rate of pneumatically linked valve | [l/min] | 1500 | 1500 | 1400 |
| b value | | 0.14 | 0.24 | 0.14 |
| C value | [l/sbar] | 7.482 | 7.141 | 6.799 |

Datasheet – Width 42 mm

| Switching times | | Switching time on | Switching time off | Switching time changeover | Maximum switching fre- quency |
|--|--------------------------|-------------------|--------------------|------------------------------|----------------------------------|
| | | [ms] | [ms] | [ms] | [Hz] |
| 2x2/2-way valves | | 18 | 28 | – | 5 |
| 2x3/2-way valve, single solenoid | Mechanical spring return | 22 | 25 | – | 5 |
| | Pneumatic spring return | 18 | 38 | – | 5 |
| 5/2-way valve, single solenoid | Mechanical spring return | 21 | 52 | – | 1 |
| | Pneumatic spring return | 28 | 40 | – | 5 |
| 5/2-way valve, double solenoid | | – | – | 16 | 5 |
| 5/2-way valve, double solenoid, with dominant signal | | – | – | 16 | 5 |
| 5/3-way valve | Normally closed | 18 | 55 | 32 | 5 |
| | Normally exhausted | 20 | 55 | 30 | 5 |
| | Normally pressurised | 22 | 55 | 27 | 5 |

| Operating and environmental conditions – 2x2/2-way valves | | Internal pilot air | External pilot air |
|---|-------|--|---|
| | | 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] | 0.3 ... 1 | –0.09 ... 1 |
| | [bar] | 3 ... 10 | –0.9 ... 10 |
| Pilot pressure | [MPa] | 0.3 ... 1 | |
| | [bar] | 3 ... 10 | |
| Ambient temperature | [°C] | –10 ... +50 | |
| Temperature of medium | [°C] | –10 ... +50 | |
| Relative humidity | [%] | 0 ... 90 | |

Datasheet – Width 42 mm

| Operating and environmental conditions – 2x3/2-way valves | | Internal pilot air | | External pilot air | |
|---|-------|--|-----------|-------------------------|--------------------------|
| | | | | Pneumatic spring return | Mechanical spring return |
| 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] | 0.3 ... 1 | 0.3 ... 1 | –0.09 ... 1 | |
| | [bar] | 3 ... 10 | 3 ... 10 | –0.9 ... 10 | |
| Pilot pressure | [MPa] | 0.3 ... 1 | | | |
| | [bar] | 3 ... 10 | | | |
| Ambient temperature | [°C] | –10 ... +50 | | | |
| Temperature of medium | [°C] | –10 ... +50 | | | |
| Relative humidity | [%] | 0 ... 90 | | | |

| Operating and environmental conditions – 5/2-way valves | | Internal pilot air | | External pilot air | |
|---|-------|--|---------------|--------------------|--|
| | | | | | |
| 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] | 0.3 ... 1.6 | –0.09 ... 1.6 | | |
| | [bar] | 3 ... 16 | –0.9 ... 16 | | |
| Pilot pressure | [MPa] | 0.3 ... 1 | | | |
| | [bar] | 3 ... 10 | | | |
| Ambient temperature | [°C] | –10 ... +50 | | | |
| Temperature of medium | [°C] | –10 ... +50 | | | |
| Relative humidity | [%] | 0 ... 90 | | | |

| Operating and environmental conditions – 5/3-way valves | | Internal pilot air | | External pilot air | |
|---|-------|--|---------------|--------------------|--|
| | | | | | |
| 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] | 0.3 ... 1.6 | –0.09 ... 1.6 | | |
| | [bar] | 3 ... 16 | –0.9 ... 16 | | |
| Pilot pressure | [MPa] | 0.3 ... 1 | | | |
| | [bar] | 3 ... 10 | | | |
| Ambient temperature | [°C] | –10 ... +50 | | | |
| Temperature of medium | [°C] | –10 ... +50 | | | |
| Relative humidity | [%] | 0 ... 90 | | | |

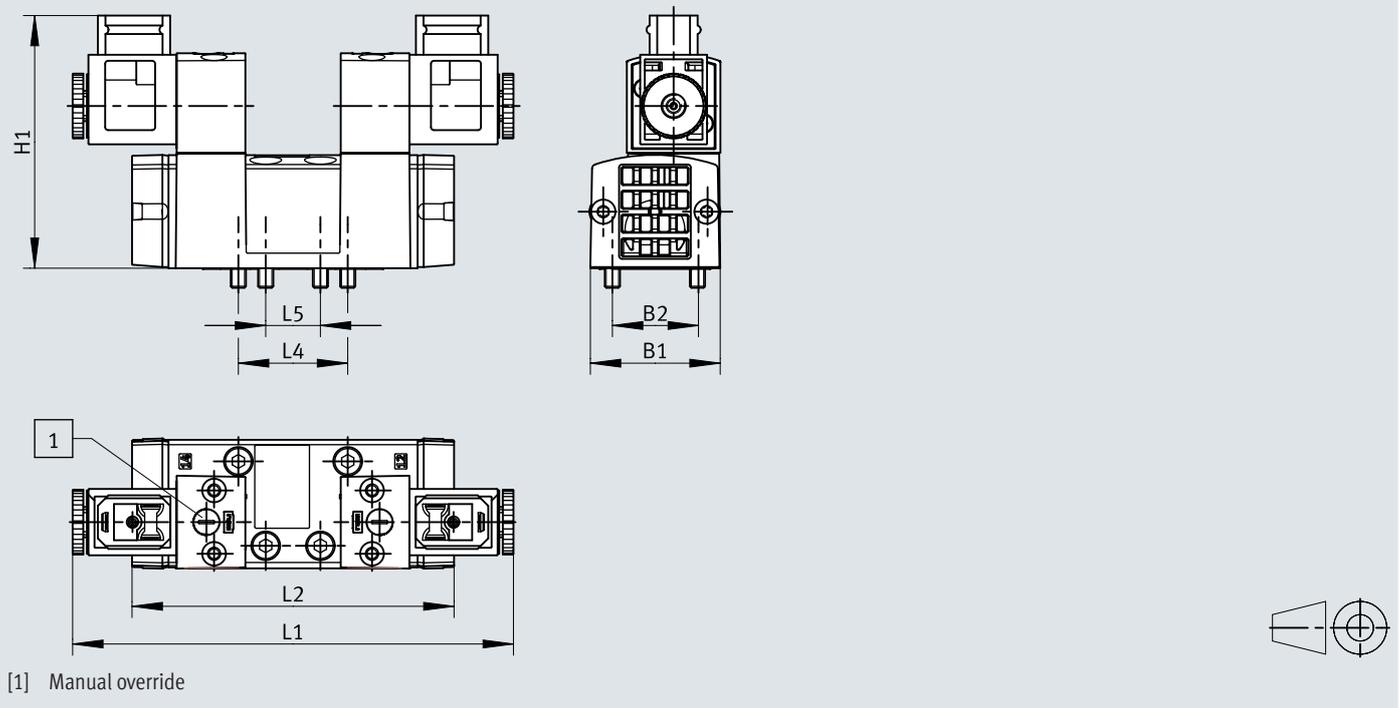
| Electrical data | | With 8 mm armature tube | Electrical connection type A | | Electrical connection type B |
|----------------------------------|-----|-------------------------|------------------------------|--|------------------------------|
| | | | To EN 175301-803 | | Type B |
| Electrical connection | | – | Type A | | Type B |
| Coil characteristics | | – | 24 V DC: 2.6 W | | 24 V DC: 3.3 W |
| Permissible voltage fluctuations | [%] | – | ±10 | | ±10 |
| Duty cycle | [%] | 100 | 100 | | 100 |
| Degree of protection | | IP65 | IP65 | | IP65 |
| | | NEMA 4 | NEMA 4 | | NEMA 4 |

| Materials | |
|------------------------|--------------------|
| Housing | Die-cast aluminium |
| Seals | NBR |
| Screws | Steel |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Datasheet – Width 42 mm

Dimensions – 2x2/2- and 2x3/2- and double solenoid 5/2-way valves and 5/3-way valves, with solenoid coil

Download CAD data → www.festo.com



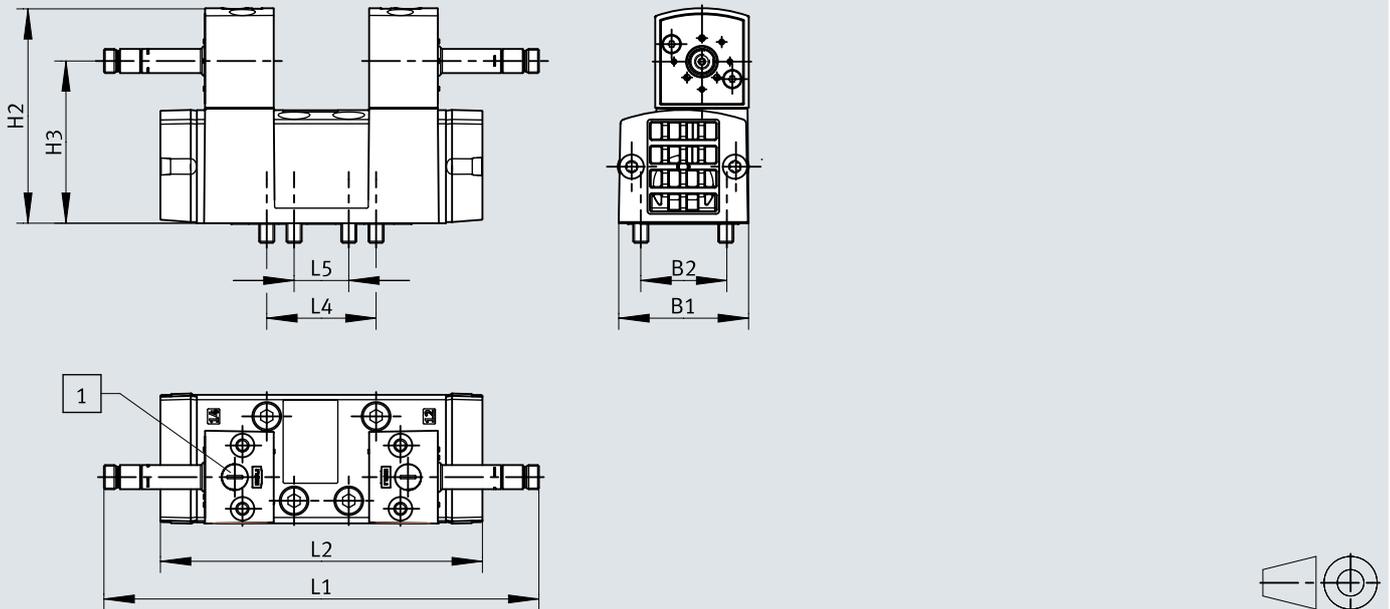
[1] Manual override

| | B1 | B2 | H1 | L1 | L2 | L4 | L5 |
|-----------------------|------|----|------|-------|-----|----|----|
| VSVA-B-B...-D1-F8-1A1 | 43.1 | 28 | 83.8 | 146.1 | 106 | 36 | 18 |
| VSVA-B-D...-D1-F8-1A1 | | | | | | | |
| VSVA-B-T...-D1-F8-1A1 | | | | | | | |
| VSVA-B-B...-D1-F8-1B2 | | | | | | | |
| VSVA-B-D...-D1-F8-1B2 | | | | | | | |
| VSVA-B-T...-D1-F8-1B2 | | | | | | | |

Datasheet – Width 42 mm

Dimensions – 2x2/2- and 2x3/2- and double solenoid 5/2-way valves and 5/3-way valves, without solenoid coil

Download CAD data → www.festo.com



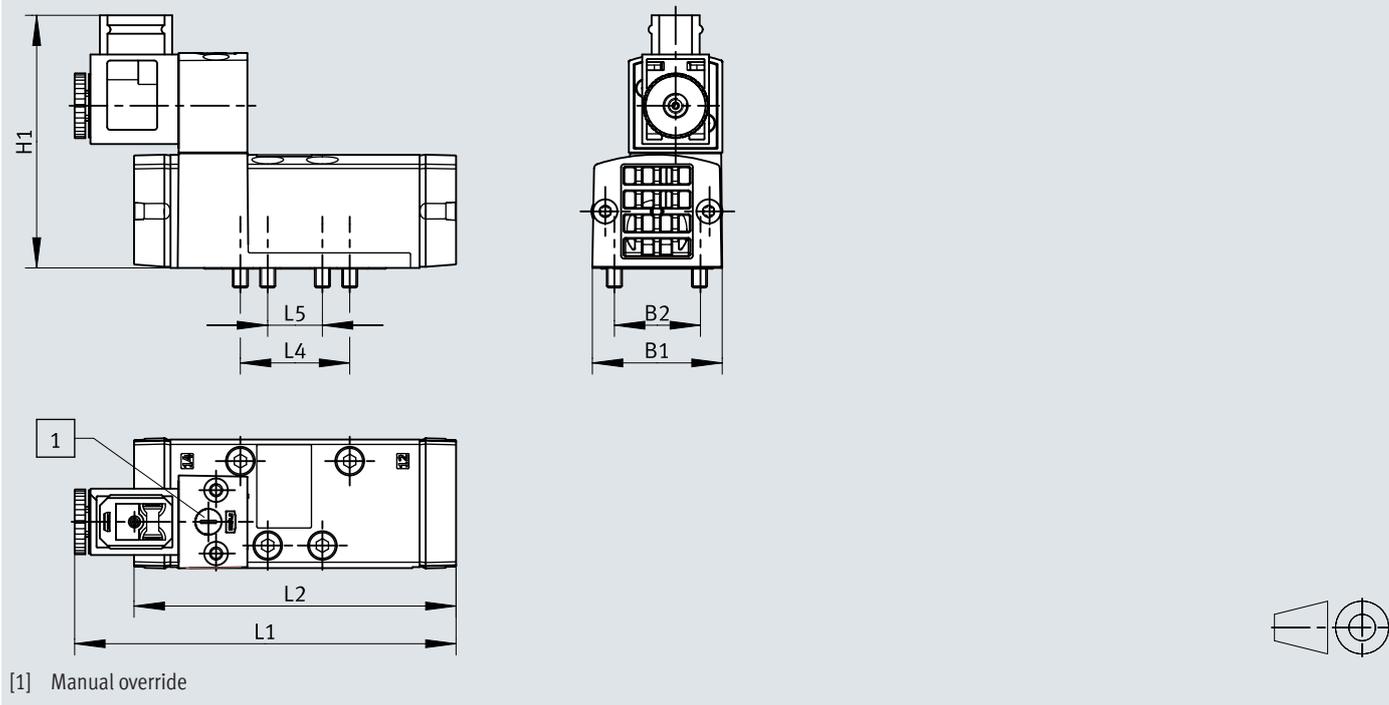
[1] Manual override

| | B1 | B2 | H2 | H3 | L1 | L2 | L4 | L5 |
|-------------------|------|----|------|------|-------|-----|----|----|
| VSVA-B-B...-D1-F8 | 43.1 | 28 | 71.3 | 53.8 | 143.2 | 106 | 36 | 18 |
| VSVA-B-D...-D1-F8 | | | | | | | | |
| VSVA-B-T...-D1-F8 | | | | | | | | |

Datasheet – Width 42 mm

Dimensions – 5/2-way valve, single solenoid, with solenoid coil

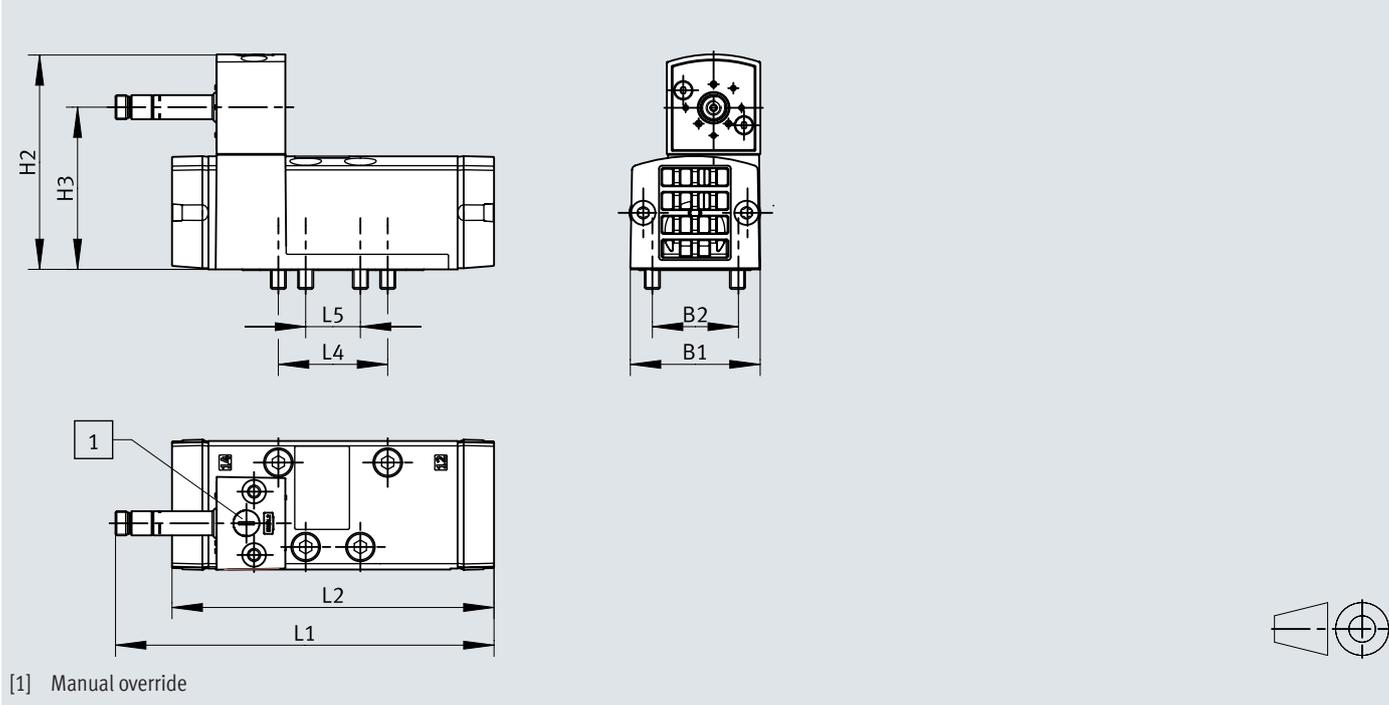
Download CAD data → www.festo.com



| | B1 | B2 | H1 | L1 | L2 | L4 | L5 |
|-----------------------|------|----|------|-------|-----|----|----|
| VSVA-B-M...-D1-F8-1A1 | 43.1 | 28 | 83.8 | 126.6 | 106 | 36 | 18 |
| VSVA-B-M...-D1-F8-1B2 | | | | | | | |

Dimensions – 5/2-way valves, single solenoid, without solenoid coil

Download CAD data → www.festo.com



| | B1 | B2 | H2 | H3 | L1 | L2 | L4 | L5 |
|-------------------|------|----|------|------|-------|-----|----|----|
| VSVA-B-M...-D1-F8 | 43.1 | 28 | 71.3 | 53.8 | 124.6 | 106 | 36 | 18 |

Ordering data – Width 42 mm

| Ordering data – Valves with 8 mm armature tube | | | | | | |
|---|------------------|-----------------------|-----------------|------------|----------|---------------------------|
| Circuit symbol | Pilot air supply | Electrical connection | Manual override | Weight [g] | Part no. | Type |
| 2x2/2-way valve, single solenoid, mechanical spring return, normally closed | | | | | | |
| | Internal | – | Non-detenting | 400 | 8198565 | VSVA-B-T22C-MH-D1-F8 |
| | | | Detenting | 400 | 8198539 | VSVA-B-T22C-MD-D1-F8 |
| | External | – | Non-detenting | 400 | 8198578 | VSVA-B-T22C-MZH-D1-F8 |
| | | | Detenting | 400 | 8198552 | VSVA-B-T22C-MZD-D1-F8 |
| 2x3/2-way valve, single solenoid, mechanical spring return, normally closed | | | | | | |
| | Internal | Type B | Non-detenting | 457 | 8033718 | VSVA-B-T32C-MH-D1-F8-1B2 |
| | | – | Non-detenting | 400 | 8198562 | VSVA-B-T32C-MH-D1-F8 |
| | | – | Detenting | 400 | 8198536 | VSVA-B-T32C-MD-D1-F8 |
| | External | Type B | Non-detenting | 457 | 8033728 | VSVA-B-T32C-MZH-D1-F8-1B2 |
| | | – | Non-detenting | 400 | 8198575 | VSVA-B-T32C-MZH-D1-F8 |
| | | – | Detenting | 400 | 8198549 | VSVA-B-T32C-MZD-D1-F8 |
| 2x3/2-way valve, single solenoid, pneumatic spring return, normally closed | | | | | | |
| | Internal | – | Non-detenting | 400 | 8198560 | VSVA-B-T32C-AH-D1-F8 |
| | | | Detenting | 400 | 8198534 | VSVA-B-T32C-AD-D1-F8 |
| | External | – | Non-detenting | 400 | 8198573 | VSVA-B-T32C-AZH-D1-F8 |
| | | | Detenting | 400 | 8198547 | VSVA-B-T32C-AZD-D1-F8 |
| 2x3/2-way valve, single solenoid, mechanical spring return, normally open | | | | | | |
| | Internal | Type B | Non-detenting | 457 | 8033719 | VSVA-B-T32U-MH-D1-F8-1B2 |
| | | – | Non-detenting | 400 | 8198563 | VSVA-B-T32U-MH-D1-F8 |
| | | – | Detenting | 400 | 8198537 | VSVA-B-T32U-MD-D1-F8 |
| | External | Type B | Non-detenting | 457 | 8033729 | VSVA-B-T32U-MZH-D1-F8-1B2 |
| | | – | Non-detenting | 400 | 8198576 | VSVA-B-T32U-MZH-D1-F8 |
| | | – | Detenting | 400 | 8198550 | VSVA-B-T32U-MZD-D1-F8 |
| 2x3/2-way valve, single solenoid, pneumatic spring return, normally open | | | | | | |
| | Internal | – | Non-detenting | 400 | 8198561 | VSVA-B-T32U-AH-D1-F8 |
| | | | Detenting | 400 | 8198535 | VSVA-B-T32U-AD-D1-F8 |
| | External | – | Non-detenting | 400 | 8198574 | VSVA-B-T32U-AZH-D1-F8 |
| | | | Detenting | 400 | 8198548 | VSVA-B-T32U-AZD-D1-F8 |
| 2x3/2-way valve, single solenoid, mechanical spring return, normally open/closed | | | | | | |
| | Internal | Type B | Non-detenting | 457 | 8033720 | VSVA-B-T32H-MH-D1-F8-1B2 |
| | | – | Non-detenting | 400 | 8198564 | VSVA-B-T32H-MH-D1-F8 |
| | | – | Detenting | 400 | 8198538 | VSVA-B-T32H-MD-D1-F8 |
| | External | Type B | Non-detenting | 457 | 8033730 | VSVA-B-T32H-MZH-D1-F8-1B2 |
| | | – | Non-detenting | 400 | 8198577 | VSVA-B-T32H-MZH-D1-F8 |
| | | – | Detenting | 400 | 8198551 | VSVA-B-T32H-MZD-D1-F8 |

Ordering data – Width 42 mm

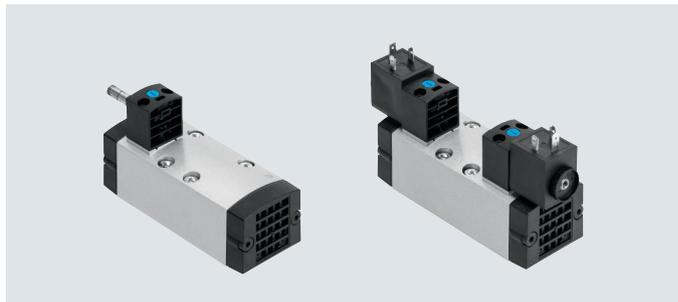
| Ordering data – Valves with 8 mm armature tube | | | | | | |
|---|------------------|-------------------------|-------------------------|------------|----------|--------------------------|
| Circuit symbol | Pilot air supply | Electrical connection | Manual override | Weight [g] | Part no. | Type |
| 5/2-way valve, single solenoid, mechanical spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 433 | 8033734 | VSVA-B-M52-MH-D1-F8-1A1 |
| | | | Detenting | 433 | 8033694 | VSVA-B-M52-MD-D1-F8-1A1 |
| | | Type B | Non-detenting | 407 | 8033714 | VSVA-B-M52-MH-D1-F8-1B2 |
| | | | Detenting | 407 | 8033674 | VSVA-B-M52-MD-D1-F8-1B2 |
| | | – | Non-detenting | 350 | 8198553 | VSVA-B-M52-MH-D1-F8 |
| | | | Detenting | 350 | 8198527 | VSVA-B-M52-MD-D1-F8 |
| | External | Type B | Non-detenting | 407 | 8033724 | VSVA-B-M52-MZH-D1-F8-1B2 |
| | | | Detenting | 350 | 8198566 | VSVA-B-M52-MZH-D1-F8 |
| | | – | Non-detenting | 350 | 8198540 | VSVA-B-M52-MZD-D1-F8 |
| | | | Detenting via accessory | 350 | 8033667 | VSVA-B-M52-MZT-D1-F8 |
| 5/2-way valve, single solenoid, pneumatic spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 433 | 8033733 | VSVA-B-M52-AH-D1-F8-1A1 |
| | | | Detenting | 433 | 8033693 | VSVA-B-M52-AD-D1-F8-1A1 |
| | | Type B | Non-detenting | 407 | 8033713 | VSVA-B-M52-AH-D1-F8-1B2 |
| | | | Detenting | 407 | 8033673 | VSVA-B-M52-AD-D1-F8-1B2 |
| | | – | Non-detenting | 350 | 8198554 | VSVA-B-M52-AH-D1-F8 |
| | | | Detenting | 350 | 8198528 | VSVA-B-M52-AD-D1-F8 |
| | External | Type B | Non-detenting | 407 | 8033723 | VSVA-B-M52-AZH-D1-F8-1B2 |
| | | | Detenting | 350 | 8198567 | VSVA-B-M52-AZH-D1-F8 |
| | | – | Non-detenting | 350 | 8198541 | VSVA-B-M52-AZD-D1-F8 |
| | | | Detenting via accessory | 350 | 8033666 | VSVA-B-M52-AZT-D1-F8 |
| 5/2-way valve, bistable | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 473 | 8033731 | VSVA-B-B52-H-D1-F8-1A1 |
| | | | Detenting | 473 | 8033691 | VSVA-B-B52-D-D1-F8-1A1 |
| | | Type B | Non-detenting | 447 | 8033711 | VSVA-B-B52-H-D1-F8-1B2 |
| | | | Detenting | 447 | 8033671 | VSVA-B-B52-D-D1-F8-1B2 |
| | | – | Non-detenting | 390 | 8198555 | VSVA-B-B52-H-D1-F8 |
| | | | Detenting | 390 | 8198529 | VSVA-B-B52-D-D1-F8 |
| | External | Type B | Non-detenting | 447 | 8033721 | VSVA-B-B52-ZH-D1-F8-1B2 |
| | | | Detenting | 390 | 8198568 | VSVA-B-B52-ZH-D1-F8 |
| | | – | Non-detenting | 390 | 8198542 | VSVA-B-B52-ZD-D1-F8 |
| | | | Detenting via accessory | 390 | 8033664 | VSVA-B-B52-ZT-D1-F8 |
| 5/2-way valve, double solenoid, with dominant signal | | | | | | |
| | Internal | Type B | Non-detenting | 447 | 8033712 | VSVA-B-D52-H-D1-F8-1B2 |
| | | | Detenting | 390 | 8198530 | VSVA-B-D52-D-D1-F8 |
| | | – | Non-detenting | 390 | 8198556 | VSVA-B-D52-H-D1-F8 |
| | | | Detenting via accessory | 390 | 8033658 | VSVA-B-D52-T-D1-F8 |
| | External | Type B | Non-detenting | 447 | 8033722 | VSVA-B-D52-ZH-D1-F8-1B2 |
| | | | Detenting | 390 | 8198543 | VSVA-B-D52-ZD-D1-F8 |
| | | – | Non-detenting | 390 | 8198569 | VSVA-B-D52-ZH-D1-F8 |
| | | | Detenting via accessory | 390 | 8033665 | VSVA-B-D52-ZT-D1-F8 |

Ordering data – Width 42 mm

| Ordering data – Valves with 8 mm armature tube | | | | | | |
|--|------------------|-------------------------|-------------------------|------------|----------------|--------------------------|
| Circuit symbol | Pilot air supply | Electrical connection | Manual override | Weight [g] | Part no. | Type |
| 5/3-way valve, normally closed, mechanical spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 488 | 8033735 | VSVA-B-P53C-H-D1-F8-1A1 |
| | | | Detenting | 488 | 8033695 | VSVA-B-P53C-D-D1-F8-1A1 |
| | | Type B | Non-detenting | 462 | 8033715 | VSVA-B-P53C-H-D1-F8-1B2 |
| | | | Detenting | 462 | 8033675 | VSVA-B-P53C-D-D1-F8-1B2 |
| | | – | Non-detenting | 405 | 8198559 | VSVA-B-P53C-H-D1-F8 |
| | | | Detenting | 405 | 8198533 | VSVA-B-P53C-D-D1-F8 |
| | External | Type B | Non-detenting | 462 | 8033725 | VSVA-B-P53C-ZH-D1-F8-1B2 |
| | | – | Non-detenting | 405 | 8198572 | VSVA-B-P53C-ZH-D1-F8 |
| | | | Detenting | 405 | 8198546 | VSVA-B-P53C-ZD-D1-F8 |
| | | | Detenting via accessory | 405 | 8033668 | VSVA-B-P53C-ZT-D1-F8 |
| 5/3-way valve, normally exhausted, mechanical spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 488 | 8033736 | VSVA-B-P53E-H-D1-F8-1A1 |
| | | | Detenting | 488 | 8033696 | VSVA-B-P53E-D-D1-F8-1A1 |
| | | Type B | Non-detenting | 462 | 8033716 | VSVA-B-P53E-H-D1-F8-1B2 |
| | | | Detenting | 462 | 8033676 | VSVA-B-P53E-D-D1-F8-1B2 |
| | | – | Non-detenting | 405 | 8198558 | VSVA-B-P53E-H-D1-F8 |
| | | | Detenting | 405 | 8198532 | VSVA-B-P53E-D-D1-F8 |
| | External | Type B | Non-detenting | 462 | 8033726 | VSVA-B-P53E-ZH-D1-F8-1B2 |
| | | – | Non-detenting | 405 | 8198571 | VSVA-B-P53E-ZH-D1-F8 |
| | | | Detenting | 405 | 8198545 | VSVA-B-P53E-ZD-D1-F8 |
| | | | Detenting via accessory | 405 | 8033669 | VSVA-B-P53E-ZT-D1-F8 |
| 5/3-way valve, normally pressurised, mechanical spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 488 | 8033737 | VSVA-B-P53U-H-D1-F8-1A1 |
| | | | Detenting | 488 | 8033697 | VSVA-B-P53U-D-D1-F8-1A1 |
| | | Type B | Non-detenting | 462 | 8033717 | VSVA-B-P53U-H-D1-F8-1B2 |
| | | | Detenting | 462 | 8033677 | VSVA-B-P53U-D-D1-F8-1B2 |
| | | – | Non-detenting | 405 | 8198557 | VSVA-B-P53U-H-D1-F8 |
| | | | Detenting | 405 | 8198531 | VSVA-B-P53U-D-D1-F8 |
| | External | Type B | Non-detenting | 462 | 8033727 | VSVA-B-P53U-ZH-D1-F8-1B2 |
| | | – | Non-detenting | 405 | 8198570 | VSVA-B-P53U-ZH-D1-F8 |
| | | | Detenting | 405 | 8198544 | VSVA-B-P53U-ZD-D1-F8 |
| | | | Detenting via accessory | 405 | 8033670 | VSVA-B-P53U-ZT-D1-F8 |

Datasheet – Width 52 mm

-  - Flow rate
4100 l/min



| General technical data | | |
|---|---|-------------------------------|
| Design | | Piston spool |
| Sealing principle | | Soft |
| Actuation type | | Electrical |
| Type of control | | Piloted |
| Flow direction | External pilot air supply | Reversible |
| | Internal pilot air supply | Not reversible |
| Suitable for vacuum | External pilot air supply, pneumatic spring return or double solenoid | Yes |
| | External pilot air supply, pneumatic spring return | No |
| | Internal pilot air supply | No |
| Exhaust air function | | Via individual sub-base |
| Type of mounting | | On sub-base |
| Mounting position | | Any |
| Max. tightening torque for valve mounting | [Nm] | 2 |
| Nominal width | [mm] | 11.5 |
| Overlap | | Positive overlap |
| Width | [mm] | 52 |
| Grid dimension | [mm] | 53 |
| Pneumatic port | 1, 2, 3, 4, 5, 12, 14 | Sub-base size 2 to ISO 5599-1 |
| Noise level | [dB (A)] | 85 |
| Conforms to standard | | ISO 5599-1 |
| Pilot interface | | To ISO 15218 |

| Flow rate values – 2x2/2-way valves | | |
|--|----------|-------|
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 2100 |
| Flow rate of valve | [l/min] | 2000 |
| Flow rate of valve on individual sub-base | [l/min] | 1500 |
| Flow rate of pneumatically linked valve | [l/min] | 1700 |
| Optimised flow rate of pneumatically linked valve | [l/min] | – |
| b value | | 0.78 |
| C value | [l/sbar] | 3.098 |

| | | Normally closed | | Normally open | | Normally open, normally closed |
|--|----------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------------|
| | | Mechanical spring return | Pneumatic spring return | Mechanical spring return | Pneumatic spring return | |
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 2100 | 3100 | 2000 | 2900 | 1900 |
| Flow rate of valve | [l/min] | 1900 | 2900 | 1800 | 2700 | 1800 |
| Flow rate of valve on individual sub-base | [l/min] | 1700 | 2500 | 1800 | 2300 | 1800 |
| Flow rate of pneumatically linked valve | [l/min] | 1100 | 2300 | 1700 | 2200 | 1100 |
| Optimised flow rate of pneumatically linked valve | [l/min] | – | | | | |
| b value | | 0.57 | 0.34 | 0.69 | 0.32 | 0.65 |
| C value | [l/sbar] | 3.631 | 6.267 | 3.167 | 7.598 | 3.208 |

Datasheet – Width 52 mm

| Flow rate values – 5/2-way valve, single solenoid | | Mechanical spring return | Pneumatic spring return |
|--|----------|--------------------------|-------------------------|
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 4100 | 4100 |
| Flow rate of valve | [l/min] | 3800 | 3800 |
| Flow rate of valve on individual sub-base | [l/min] | 3200 | 3100 |
| Flow rate of pneumatically linked valve | [l/min] | 2700 | 2600 |
| Optimised flow rate of pneumatically linked valve | [l/min] | – | |
| b value | | 0.3 | 0.31 |
| C value | [l/sbar] | 8.168 | 8.221 |

| Flow rate values – 5/2-way valve, double solenoid | | Double solenoid | Double solenoid with dominant signal |
|--|----------|-----------------|--------------------------------------|
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 4000 | 4000 |
| Flow rate of valve | [l/min] | 3700 | 3700 |
| Flow rate of valve on individual sub-base | [l/min] | 3100 | 3100 |
| Flow rate of pneumatically linked valve | [l/min] | 2600 | 2700 |
| Optimised flow rate of pneumatically linked valve | [l/min] | – | |
| b value | | 0.2 | 0.26 |
| C value | [l/sbar] | 8.578 | 8.272 |

| Flow rate values – 5/3-way valve | | Normally closed | Normally exhausted | Normally pressurised |
|--|----------|-----------------|--------------------|----------------------|
| Nominal flow rate standardised according to ISO 8778 | [l/min] | 3700 | 3600 | 3500 |
| Flow rate of valve | [l/min] | 3500 | 3400 | 3300 |
| Flow rate of valve on individual sub-base | [l/min] | 2800 | 2700 | 2900 |
| Flow rate of pneumatically linked valve | [l/min] | 2600 | 2500 | 2500 |
| Optimised flow rate of pneumatically linked valve | [l/min] | – | | |
| b value | | 0.26 | 0.23 | 0.33 |
| C value | [l/sbar] | 7.696 | 7.667 | 7.069 |

| Switching times | | Switching time on [ms] | Switching time off [ms] | Switching time changeover [ms] | Maximum switching fre- quency [Hz] |
|--|--------------------------|---------------------------|----------------------------|--------------------------------------|--|
| 2x2/2-way valves | | 23 | 45 | – | 5 |
| 2x3/2-way valve, single solenoid | Mechanical spring return | 33 | 38 | – | 5 |
| | Pneumatic spring return | 25 | 50 | – | 5 |
| 5/2-way valve, single solenoid | Mechanical spring return | 23 | 83 | – | 1 |
| | Pneumatic spring return | 56 | 64 | – | 5 |
| 5/2-way valve, double solenoid | | – | – | 23 | 5 |
| 5/2-way valve, double solenoid, with dominant signal | | – | – | 22 | 5 |
| 5/3-way valve | Normally closed | 25 | 78 | 40 | 5 |
| | Normally exhausted | 26 | 82 | 40 | 5 |
| | Normally pressurised | 26 | 80 | 34 | 5 |

| Operating and environmental conditions – 2x2/2-way valves | | Internal pilot air | External pilot air |
|---|-------|--|--------------------|
| 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] | 0.3 ... 1 | –0.09 ... 1 |
| | [bar] | 3 ... 10 | –0.9 ... 10 |
| Pilot pressure | [MPa] | 0.3 ... 1 | |
| | [bar] | 3 ... 10 | |
| Ambient temperature | [°C] | –10 ... +50 | |
| Temperature of medium | [°C] | –10 ... +50 | |
| Relative humidity | [%] | 0 ... 90 | |

Datasheet – Width 52 mm

| Operating and environmental conditions – 2x3/2-way valves | | Internal pilot air | External pilot air | |
|---|-------|--|-------------------------|--------------------------|
| | | | Pneumatic spring return | Mechanical spring return |
| 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] | 0.3 ... 1 | 0.3 ... 1 | –0.09 ... 1 |
| | [bar] | 3 ... 10 | 3 ... 10 | –0.9 ... 10 |
| Pilot pressure | [MPa] | 0.3 ... 1 | | |
| | [bar] | 3 ... 10 | | |
| Ambient temperature | [°C] | –10 ... +50 | | |
| Temperature of medium | [°C] | –10 ... +50 | | |
| Relative humidity | [%] | 0 ... 90 | | |

| Operating and environmental conditions – 5/2-way valves | | Internal pilot air | External pilot air | |
|---|-------|--|--------------------|---------------|
| | | | Operating medium | |
| 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] | 0.3 ... 1.6 | | –0.09 ... 1.6 |
| | [bar] | 3 ... 16 | | –0.9 ... 16 |
| Pilot pressure | [MPa] | 0.3 ... 1 | | |
| | [bar] | 3 ... 10 | | |
| Ambient temperature | [°C] | –10 ... +50 | | |
| Temperature of medium | [°C] | –10 ... +50 | | |
| Relative humidity | [%] | 0 ... 90 | | |

| Operating and environmental conditions – 5/3-way valves | | Internal pilot air | External pilot air | |
|---|-------|--|--------------------|---------------|
| | | | Operating medium | |
| 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] | 0.3 ... 1.6 | | –0.09 ... 1.6 |
| | [bar] | 3 ... 16 | | –0.9 ... 16 |
| Pilot pressure | [MPa] | 0.3 ... 1 | | |
| | [bar] | 3 ... 10 | | |
| Ambient temperature | [°C] | –10 ... +50 | | |
| Temperature of medium | [°C] | –10 ... +50 | | |
| Relative humidity | [%] | 0 ... 90 | | |

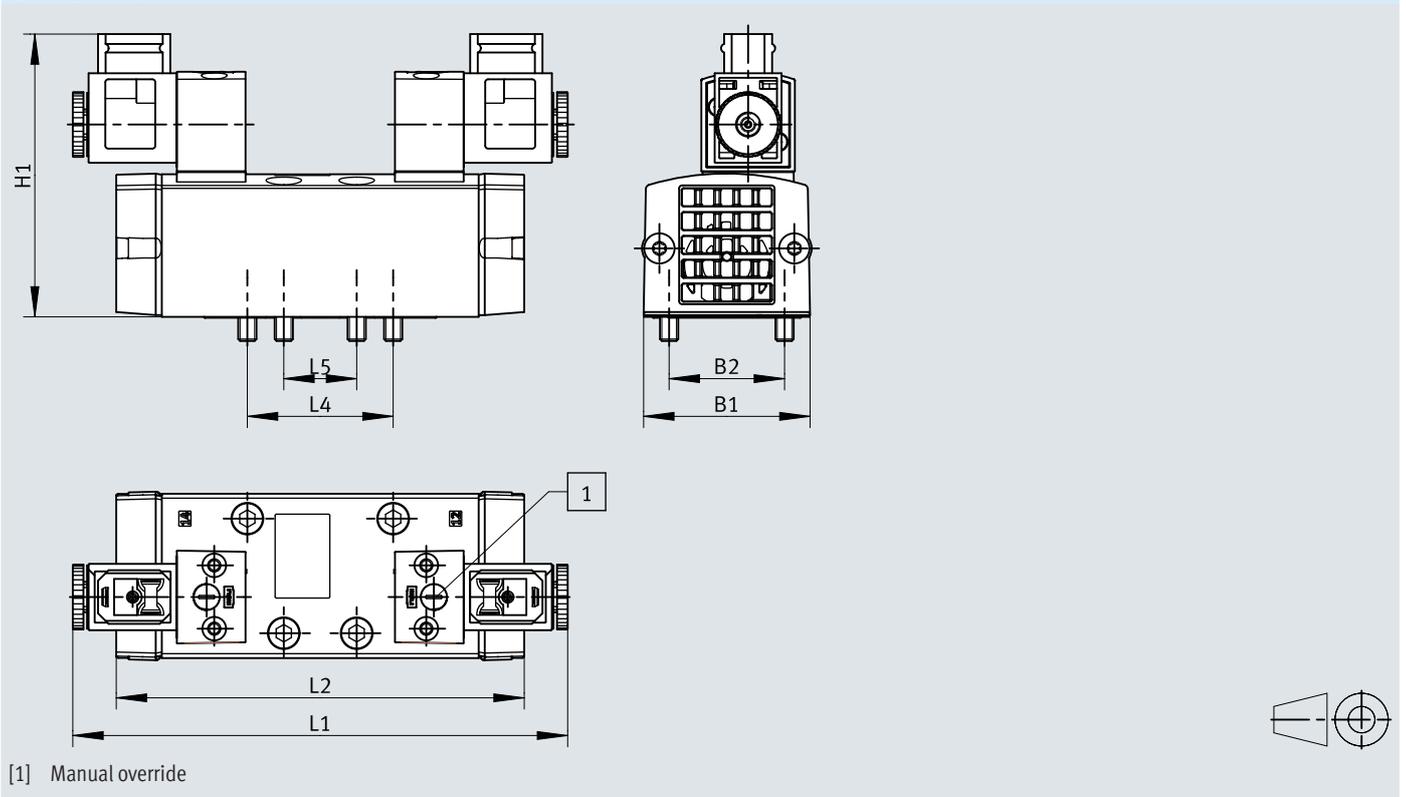
| Electrical data | | With 8 mm armature tube | Electrical connection type A | | Electrical connection type B |
|----------------------------------|-----|-------------------------|------------------------------|----------------|------------------------------|
| | | | Electrical connection | | |
| Coil characteristics | | – | 24 V DC: 2.6 W | 24 V DC: 3.3 W | |
| Permissible voltage fluctuations | [%] | – | ±10 | ±10 | |
| Duty cycle | [%] | 100 | 100 | 100 | |
| Degree of protection | | IP65 | IP65 | IP65 | |
| | | NEMA 4 | NEMA 4 | NEMA 4 | |

| Materials | |
|------------------------|--------------------|
| Housing | Die-cast aluminium |
| Seals | NBR |
| Screws | Steel |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Datasheet – Width 52 mm

Dimensions – 2x2/2- and 2x3/2- and double solenoid 5/2-way valves and 5/3-way valves, with solenoid coil

Download CAD data → www.festo.com

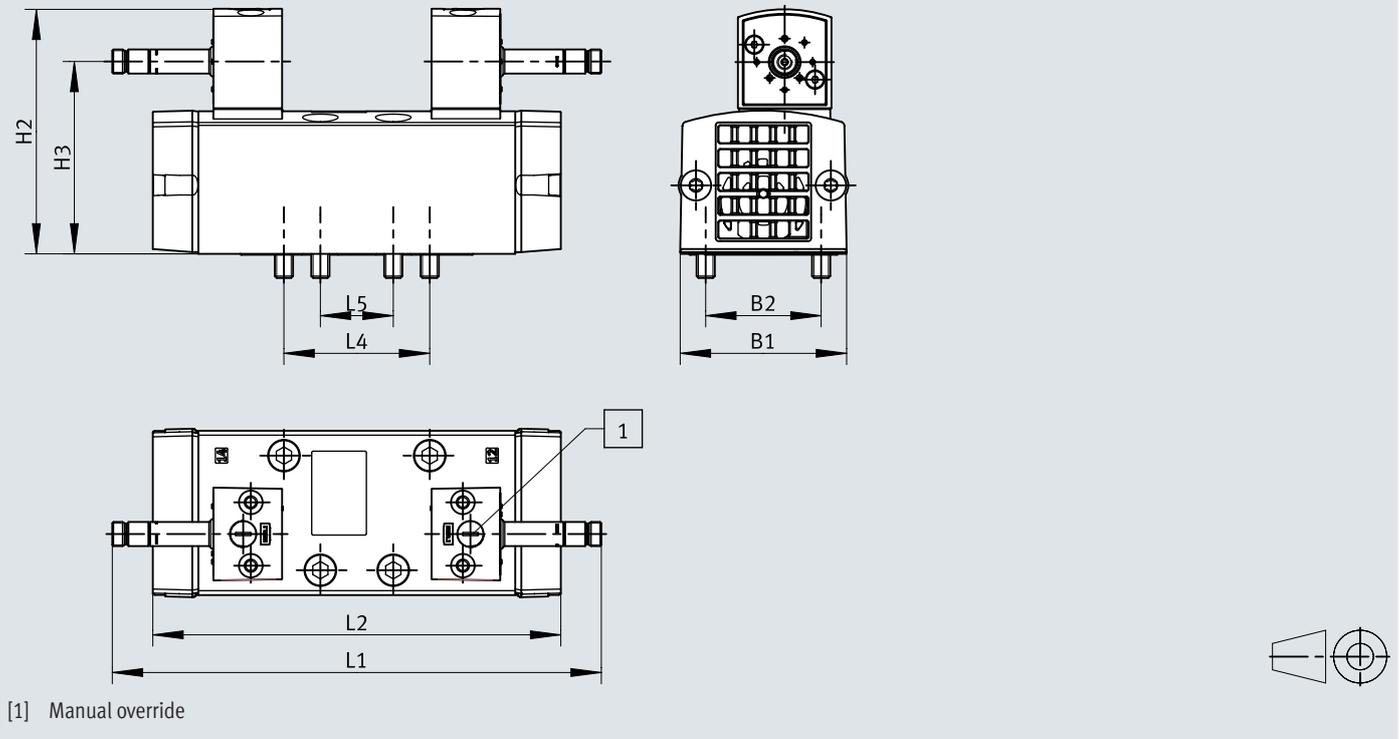


| | B1 | B2 | H1 | L1 | L2 | L4 | L5 |
|-----------------------|------|----|------|-------|-------|----|----|
| VSVA-B-B...-D2-F8-1A1 | 54.8 | 38 | 93.8 | 162.9 | 134.3 | 48 | 24 |
| VSVA-B-D...-D2-F8-1A1 | | | | | | | |
| VSVA-B-T...-D2-F8-1A1 | | | | | | | |
| VSVA-B-B...-D2-F8-1B2 | | | | | | | |
| VSVA-B-D...-D2-F8-1B2 | | | | | | | |
| VSVA-B-T...-D2-F8-1B2 | | | | | | | |

Datasheet – Width 52 mm

Dimensions – 2x2/2- and 2x3/2- and double solenoid 5/2-way valves and 5/3-way valves, without solenoid coil

Download CAD data → www.festo.com



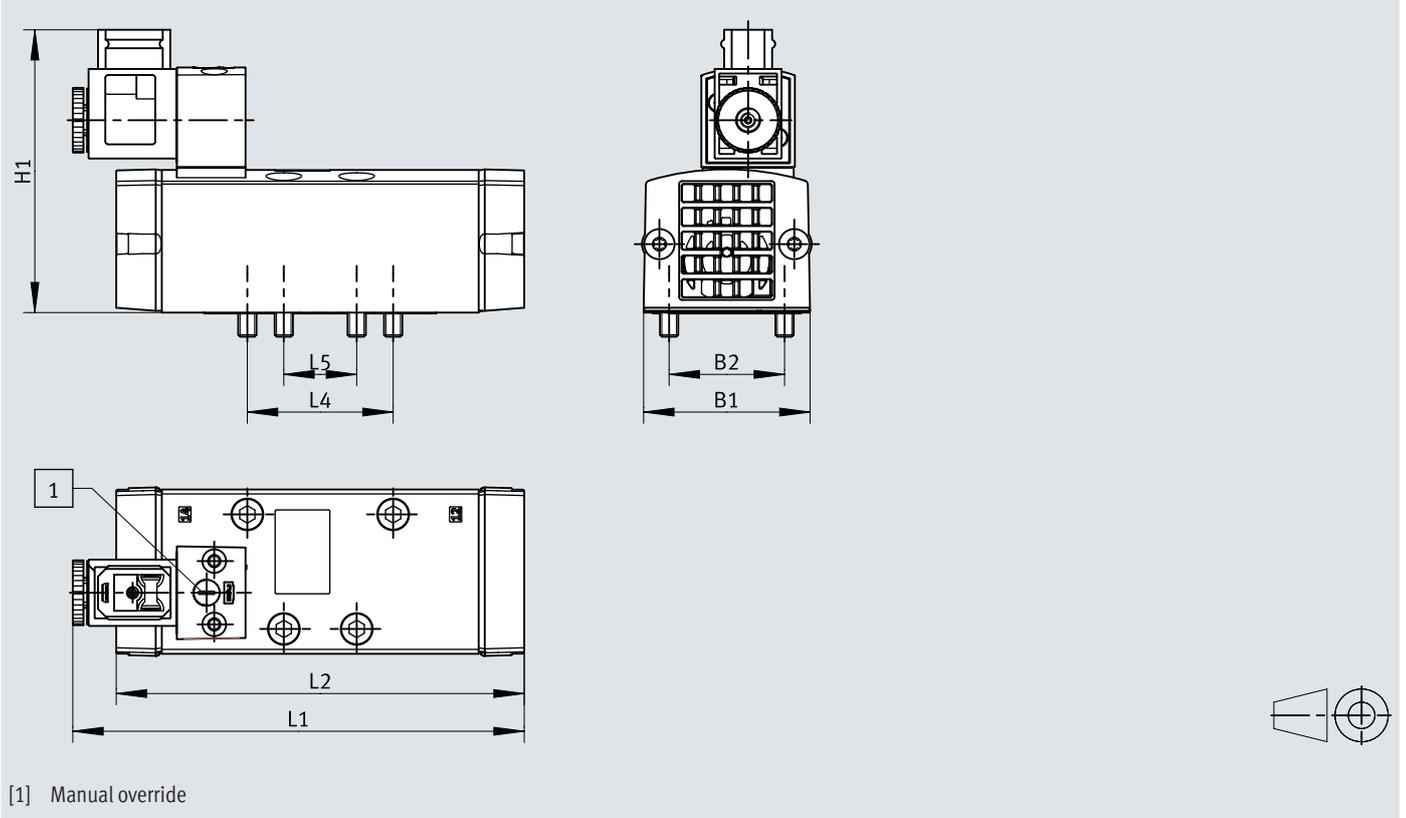
[1] Manual override

| | B1 | B2 | H2 | H3 | L1 | L2 | L4 | L5 |
|-------------------|------|----|------|------|-----|-------|----|----|
| VSVA-B-B...-D2-F8 | 54.8 | 38 | 81.3 | 63.8 | 161 | 134.3 | 48 | 24 |
| VSVA-B-D...-D2-F8 | | | | | | | | |
| VSVA-B-T...-D2-F8 | | | | | | | | |

Datasheet – Width 52 mm

Dimensions – 5/2-way valve, single solenoid, with solenoid coil

Download CAD data → www.festo.com



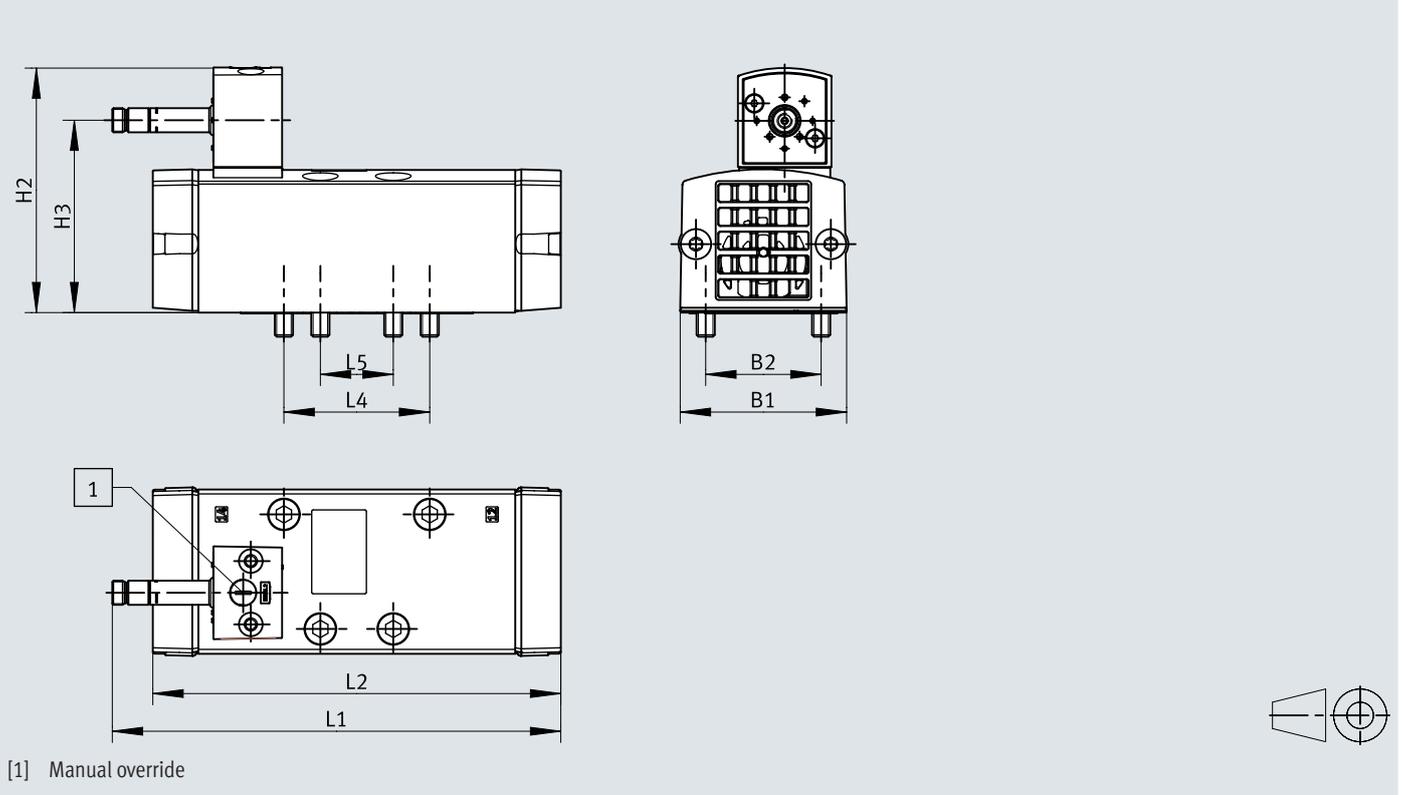
[1] Manual override

| | B1 | B2 | H1 | L1 | L2 | L4 | L5 |
|-----------------------|------|----|------|-------|-------|----|----|
| VSVA-B-M...-D2-F8-1A1 | 54.8 | 38 | 93.8 | 148.6 | 134.3 | 48 | 24 |
| VSVA-B-M...-D2-F8-1B2 | | | | | | | |

Datasheet – Width 52 mm

Dimensions – 5/2-way valves, single solenoid, without solenoid coil

Download CAD data → www.festo.com



[1] Manual override

| | B1 | B2 | H2 | H3 | L1 | L2 | L4 | L5 |
|------------------|------|----|------|------|-------|-------|----|----|
| VSVA-B-M...D2-F8 | 54.8 | 38 | 81.3 | 63.8 | 147.6 | 134.3 | 48 | 24 |

Ordering data – Width 52 mm

| Ordering data – Valves with 8 mm armature tube | | | | | | |
|--|------------------|-----------------------|-----------------|------------|----------------|---------------------------|
| Circuit symbol | Pilot air supply | Electrical connection | Manual override | Weight [g] | Part no. | Type |
| 2x2/2-way valve, single solenoid, mechanical spring return, normally closed | | | | | | |
| | Internal | – | Non-detenting | 685 | 8198624 | VSVA-B-T22C-MH-D2-F8 |
| | | | Detenting | 685 | 8198598 | VSVA-B-T22C-MD-D2-F8 |
| | External | – | Non-detenting | 685 | 8198637 | VSVA-B-T22C-MZH-D2-F8 |
| | | | Detenting | 685 | 8198611 | VSVA-B-T22C-MZD-D2-F8 |
| 2x3/2-way valve, single solenoid, mechanical spring return, normally closed | | | | | | |
| | Internal | Type B | Non-detenting | 737 | 8033812 | VSVA-B-T32C-MH-D2-F8-1B2 |
| | | – | Non-detenting | 680 | 8198621 | VSVA-B-T32C-MH-D2-F8 |
| | | – | Detenting | 680 | 8198595 | VSVA-B-T32C-MD-D2-F8 |
| | External | Type B | Non-detenting | 737 | 8033822 | VSVA-B-T32C-MZH-D2-F8-1B2 |
| | | – | Non-detenting | 680 | 8198634 | VSVA-B-T32C-MZH-D2-F8 |
| | | – | Detenting | 680 | 8198608 | VSVA-B-T32C-MZD-D2-F8 |
| 2x3/2-way valve, single solenoid, pneumatic spring return, normally closed | | | | | | |
| | Internal | – | Non-detenting | 680 | 8198619 | VSVA-B-T32C-AH-D2-F8 |
| | | | Detenting | 680 | 8198593 | VSVA-B-T32C-AD-D2-F8 |
| | External | – | Non-detenting | 680 | 8198632 | VSVA-B-T32C-AZH-D2-F8 |
| | | | Detenting | 680 | 8198606 | VSVA-B-T32C-AZD-D2-F8 |
| 2x3/2-way valve, single solenoid, mechanical spring return, normally open | | | | | | |
| | Internal | Type B | Non-detenting | 737 | 8033813 | VSVA-B-T32U-MH-D2-F8-1B2 |
| | | – | Non-detenting | 680 | 8198622 | VSVA-B-T32U-MH-D2-F8 |
| | | – | Non-detenting | 680 | 8198596 | VSVA-B-T32U-MD-D2-F8 |
| | External | Type B | Non-detenting | 737 | 8033823 | VSVA-B-T32U-MZH-D2-F8-1B2 |
| | | – | Detenting | 680 | 8198609 | VSVA-B-T32U-MZD-D2-F8 |
| | External | – | Non-detenting | 680 | 8198635 | VSVA-B-T32U-MZH-D2-F8 |
| 2x3/2-way valve, single solenoid, pneumatic spring return, normally open | | | | | | |
| | Internal | – | Non-detenting | 680 | 8198620 | VSVA-B-T32U-AH-D2-F8 |
| | | | Detenting | 680 | 8198594 | VSVA-B-T32U-AD-D2-F8 |
| | External | – | Non-detenting | 680 | 8198633 | VSVA-B-T32U-AZH-D2-F8 |
| | External | – | Detenting | 680 | 8198607 | VSVA-B-T32U-AZD-D2-F8 |

Ordering data – Width 52 mm

| Ordering data – Valves with 8 mm armature tube | | | | | | |
|---|------------------|-------------------------|-------------------------|------------|----------|---------------------------|
| Circuit symbol | Pilot air supply | Electrical connection | Manual override | Weight [g] | Part no. | Type |
| 2x3/2-way valve, single solenoid, mechanical spring return, normally open/closed | | | | | | |
| | Internal | Type B | Non-detenting | 737 | 8033814 | VSVA-B-T32H-MH-D2-F8-1B2 |
| | | – | Non-detenting | 680 | 8198623 | VSVA-B-T32H-MH-D2-F8 |
| | | – | Detenting | 680 | 8198597 | VSVA-B-T32H-MD-D2-F8 |
| | External | Type B | Non-detenting | 737 | 8033824 | VSVA-B-T32H-MZH-D2-F8-1B2 |
| | | – | Detenting | 680 | 8198610 | VSVA-B-T32H-MZD-D2-F8 |
| | External | – | Non-detenting | 680 | 8198636 | VSVA-B-T32H-MZH-D2-F8 |
| 5/2-way valve, single solenoid, mechanical spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 713 | 8033828 | VSVA-B-M52-MH-D2-F8-1A1 |
| | | | Detenting | 713 | 8033788 | VSVA-B-M52-MD-D2-F8-1A1 |
| | | Type B | Non-detenting | 687 | 8033808 | VSVA-B-M52-MH-D2-F8-1B2 |
| | | | Detenting | 687 | 8033768 | VSVA-B-M52-MD-D2-F8-1B2 |
| | | – | Non-detenting | 630 | 8198612 | VSVA-B-M52-MH-D2-F8 |
| | | | Detenting | 630 | 8198586 | VSVA-B-M52-MD-D2-F8 |
| | External | Type B | Non-detenting | 687 | 8033818 | VSVA-B-M52-MZH-D2-F8-1B2 |
| | | – | Non-detenting | 630 | 8198625 | VSVA-B-M52-MZH-D2-F8 |
| | | – | Detenting | 630 | 8198599 | VSVA-B-M52-MZD-D2-F8 |
| | | – | Detenting via accessory | 630 | 8033761 | VSVA-B-M52-MZT-D2-F8 |
| 5/2-way valve, single solenoid, pneumatic spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 713 | 8033827 | VSVA-B-M52-AH-D2-F8-1A1 |
| | | | Detenting | 713 | 8033787 | VSVA-B-M52-AD-D2-F8-1A1 |
| | | Type B | Non-detenting | 687 | 8033807 | VSVA-B-M52-AH-D2-F8-1B2 |
| | | | Detenting | 687 | 8033767 | VSVA-B-M52-AD-D2-F8-1B2 |
| | | – | Non-detenting | 630 | 8198613 | VSVA-B-M52-AH-D2-F8 |
| | | | Detenting | 630 | 8198587 | VSVA-B-M52-AD-D2-F8 |
| | External | Type B | Non-detenting | 687 | 8033817 | VSVA-B-M52-AZH-D2-F8-1B2 |
| | | – | Non-detenting | 630 | 8198626 | VSVA-B-M52-AZH-D2-F8 |
| | | – | Detenting | 630 | 8198600 | VSVA-B-M52-AZD-D2-F8 |
| | | – | Detenting via accessory | 630 | 8033760 | VSVA-B-M52-AZT-D2-F8 |
| 5/2-way valve, double solenoid | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 748 | 8033825 | VSVA-B-B52-H-D2-F8-1A1 |
| | | | Detenting | 748 | 8033785 | VSVA-B-B52-D-D2-F8-1A1 |
| | | Type B | Non-detenting | 722 | 8033805 | VSVA-B-B52-H-D2-F8-1B2 |
| | | | Detenting | 722 | 8033765 | VSVA-B-B52-D-D2-F8-1B2 |
| | | – | Non-detenting | 665 | 8198614 | VSVA-B-B52-H-D2-F8 |
| | | | Detenting | 665 | 8198588 | VSVA-B-B52-D-D2-F8 |
| | External | Type B | Non-detenting | 722 | 8033815 | VSVA-B-B52-ZH-D2-F8-1B2 |
| | | – | Non-detenting | 665 | 8198627 | VSVA-B-B52-ZH-D2-F8 |
| | | – | Detenting | 665 | 8198601 | VSVA-B-B52-ZD-D2-F8 |
| | | – | Detenting via accessory | 665 | 8033758 | VSVA-B-B52-ZT-D2-F8 |

Ordering data – Width 52 mm

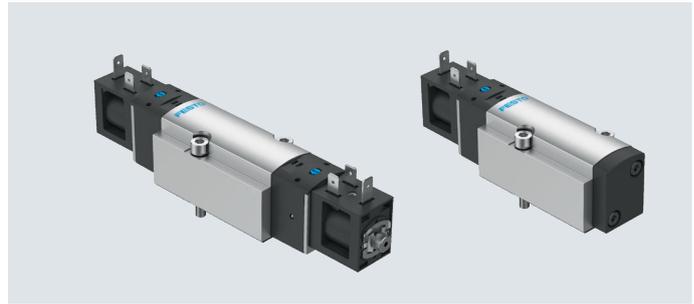
| Ordering data – Valves with 8 mm armature tube | | | | | | |
|--|------------------|-------------------------|-------------------------|------------|----------------|---------------------------------|
| Circuit symbol | Pilot air supply | Electrical connection | Manual override | Weight [g] | Part no. | Type |
| 5/2-way valve, double solenoid, with dominant signal | | | | | | |
| | Internal | Type B | Non-detenting | 722 | 8033806 | VSVA-B-D52-H-D2-F8-1B2 |
| | | – | Non-detenting | 665 | 8198615 | VSVA-B-D52-H-D2-F8 |
| | | | Detenting | 665 | 8198589 | VSVA-B-D52-D-D2-F8 |
| | | | Detenting via accessory | 665 | 8033752 | VSVA-B-D52-T-D2-F8 |
| | External | Type B | Non-detenting | 722 | 8033816 | VSVA-B-D52-ZH-D2-F8-1B2 |
| | | – | Non-detenting | 665 | 8198628 | VSVA-B-D52-ZH-D2-F8 |
| | | | Detenting | 665 | 8198602 | VSVA-B-D52-ZD-D2-F8 |
| | | | Detenting via accessory | 665 | 8033759 | VSVA-B-D52-ZT-D2-F8 |
| 5/3-way valve, normally closed, mechanical spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 803 | 8033829 | VSVA-B-P53C-H-D2-F8-1A1 |
| | | | Detenting | 803 | 8033789 | VSVA-B-P53C-D-D2-F8-1A1 |
| | | Type B | Non-detenting | 777 | 8033809 | VSVA-B-P53C-H-D2-F8-1B2 |
| | | | Detenting | 777 | 8033769 | VSVA-B-P53C-D-D2-F8-1B2 |
| | | – | Non-detenting | 720 | 8198618 | VSVA-B-P53C-H-D2-F8 |
| | | | Detenting via accessory | 720 | 8198592 | VSVA-B-P53C-D-D2-F8 |
| | External | Type B | Non-detenting | 777 | 8033819 | VSVA-B-P53C-ZH-D2-F8-1B2 |
| | | – | Non-detenting | 720 | 8198631 | VSVA-B-P53C-ZH-D2-F8 |
| | | | Detenting | 720 | 8198605 | VSVA-B-P53C-ZD-D2-F8 |
| | | | Detenting via accessory | 720 | 8033762 | VSVA-B-P53C-ZT-D2-F8 |
| 5/3-way valve, normally exhausted, mechanical spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 803 | 8033830 | VSVA-B-P53E-H-D2-F8-1A1 |
| | | | Detenting | 803 | 8033790 | VSVA-B-P53E-D-D2-F8-1A1 |
| | | Type B | Non-detenting | 777 | 8033810 | VSVA-B-P53E-H-D2-F8-1B2 |
| | | | Detenting | 777 | 8033770 | VSVA-B-P53E-D-D2-F8-1B2 |
| | | – | Non-detenting | 720 | 8198617 | VSVA-B-P53E-H-D2-F8 |
| | | | Detenting via accessory | 720 | 8198591 | VSVA-B-P53E-D-D2-F8 |
| | External | Type B | Non-detenting | 777 | 8033820 | VSVA-B-P53E-ZH-D2-F8-1B2 |
| | | – | Non-detenting | 720 | 8198630 | VSVA-B-P53E-ZH-D2-F8 |
| | | | Detenting | 720 | 8198604 | VSVA-B-P53E-ZD-D2-F8 |
| | | | Detenting via accessory | 720 | 8033763 | VSVA-B-P53E-ZT-D2-F8 |
| 5/3-way valve, normally pressurised, mechanical spring return | | | | | | |
| | Internal | Type A to EN 175301-803 | Non-detenting | 803 | 8033831 | VSVA-B-P53U-H-D2-F8-1A1 |
| | | | Detenting | 803 | 8033791 | VSVA-B-P53U-D-D2-F8-1A1 |
| | | Type B | Non-detenting | 777 | 8033811 | VSVA-B-P53U-H-D2-F8-1B2 |
| | | | Detenting | 777 | 8033771 | VSVA-B-P53U-D-D2-F8-1B2 |
| | | – | Non-detenting | 720 | 8198616 | VSVA-B-P53U-H-D2-F8 |
| | | | Detenting via accessory | 720 | 8198590 | VSVA-B-P53U-D-D2-F8 |
| | External | Type B | Non-detenting | 777 | 8033821 | VSVA-B-P53U-ZH-D2-F8-1B2 |
| | | – | Non-detenting | 720 | 8198629 | VSVA-B-P53U-ZH-D2-F8 |
| | | | Detenting | 720 | 8198603 | VSVA-B-P53U-ZD-D2-F8 |
| | | | Detenting via accessory | 720 | 8033764 | VSVA-B-P53U-ZT-D2-F8 |

Solenoid valves VSVA, with square plug type B to industry standard

Datasheet – Width 38 mm

-  - Flow rate
max. 1343 l/min

-  - Voltage
24 V DC



| General technical data | | | | | |
|--|---------------|--------------------------------|-------------------|--------------------------|--------------------|
| Valve function | | 5/2-way, single solenoid | | 5/2-way, double solenoid | 5/3-way, exhausted |
| Reset method | | Pneumatic spring | Mechanical spring | – | Mechanical spring |
| Design | | Piston spool with sealing ring | | | |
| Overlap | | Negative overlap | | | |
| Sealing principle | | Soft | | | |
| Actuation type | | Electrical | | | |
| Type of control | | Piloted | | | |
| Pilot air supply | | Internal | | | |
| Flow direction | | Not reversible | | | |
| Exhaust air function | | Can be throttled | | | |
| Manual override | | Non-detenting; detenting | | | |
| Type of mounting | | On sub-base | | | |
| Mounting position | | Any | | | |
| Nominal width | [mm] | 6.3 | | | |
| Valve size | [mm] | 42 | | | |
| Width | [mm] | 38 | | | |
| Grid dimension | [mm] | 43 | | | |
| Pneumatic port | 1, 2, 3, 4, 5 | Sub-base size 1 to ISO 5599-1 | | | |
| Connection for venting hole | | Not ducted | | | |
| b value | | 0.26 | 0.26 | 0.26 | 0.26 |
| C value | [l/sbar] | 5.87 | 5.88 | 5.91 | 5.63 |
| Maximum assembly torque for valve mounting | [Nm] | 5 | | | |
| Product weight | [g] | 321 | 324 | 400 | 402 |
| Conforms to standard | | ISO 5599-1 | | | |
| ISO code | | 151 | 152 | 155 | 157 |

| Flow rates | | | | | |
|---|---------|--------------------------|-------------------|--------------------------|--------------------|
| Valve function | | 5/2-way, single solenoid | | 5/2-way, double solenoid | 5/3-way, exhausted |
| Reset method | | Pneumatic spring | Mechanical spring | – | Mechanical spring |
| Flow rate of valve | [l/min] | 1342 | 1343 | 1341 | 1289 |
| Flow rate of valve on individual sub-base | [l/min] | 1341 | 1342 | 1341 | 1289 |
| Flow rate of pneumatically linked valve | [l/min] | 1313 | 1313 | 1313 | 1283 |
| Standard nominal flow rate | [l/min] | 1200 | 1200 | 1200 | 1200 |

| Switching times | | | | | |
|---------------------------|------|--------------------------|-------------------|--------------------------|--------------------|
| Valve function | | 5/2-way, single solenoid | | 5/2-way, double solenoid | 5/3-way, exhausted |
| Reset method | | Pneumatic spring | Mechanical spring | – | Mechanical spring |
| Switching time on | [ms] | 17.3 | 19.9 | – | 12.4 |
| Switching time off | [ms] | 20.7 | 20.9 | – | 37.4 |
| Switching time changeover | [ms] | – | – | 10.5 | 18.9 |

Datasheet – Width 38 mm

| Safety characteristics | | |
|--|------|--|
| Max. positive test pulse with 0 signal | [µs] | 2500 |
| Max. negative test pulse with 1 signal | [µs] | 1100 |
| Shock resistance | | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 |
| Vibration resistant | | Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6 |

| Operating and environmental conditions | | |
|--|-------|--|
| 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] | 0.3 ... 0.8 |
| | [bar] | 3 ... 8 |
| Ambient temperature | [°C] | -5 ... +50 |
| Temperature of medium | [°C] | -5 ... +50 |
| Corrosion resistance class CRC ¹⁾ | | 1 - Low corrosion stress |

1) More information www.festo.com/x/topic/crc

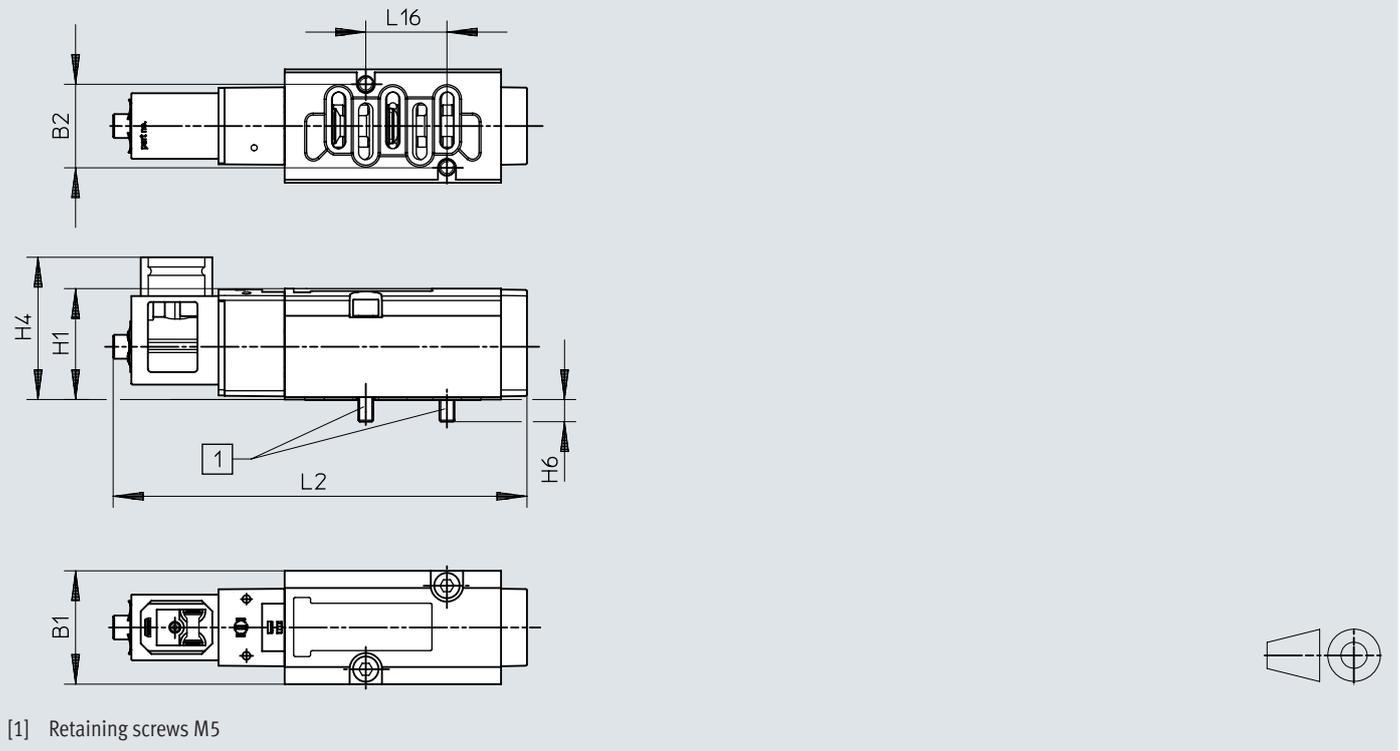
| Electrical data | | |
|----------------------------------|--------|------------------------------|
| Electrical connection | | Type B |
| | | To industry standard (11 mm) |
| Nominal operating voltage | [V DC] | 24 |
| Coil characteristics | | 24 V DC: 3.3 W |
| Permissible voltage fluctuations | [%] | ±10 |
| Duty cycle | [%] | 100 |
| Degree of protection | | IP65 |
| | | With plug socket |
| | | To IEC 60529 |
| Signal status indication | | With accessories |

| Materials | |
|------------------------|-------------------------|
| Housing | Wrought aluminium alloy |
| Seals | NBR, HNBR |
| Piston spool | Wrought aluminium alloy |
| Screws | Galvanised steel |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-Zone III |

Datasheet – Width 38 mm

Dimensions – 5/2-way valve, single solenoid

Download CAD data → www.festo.com

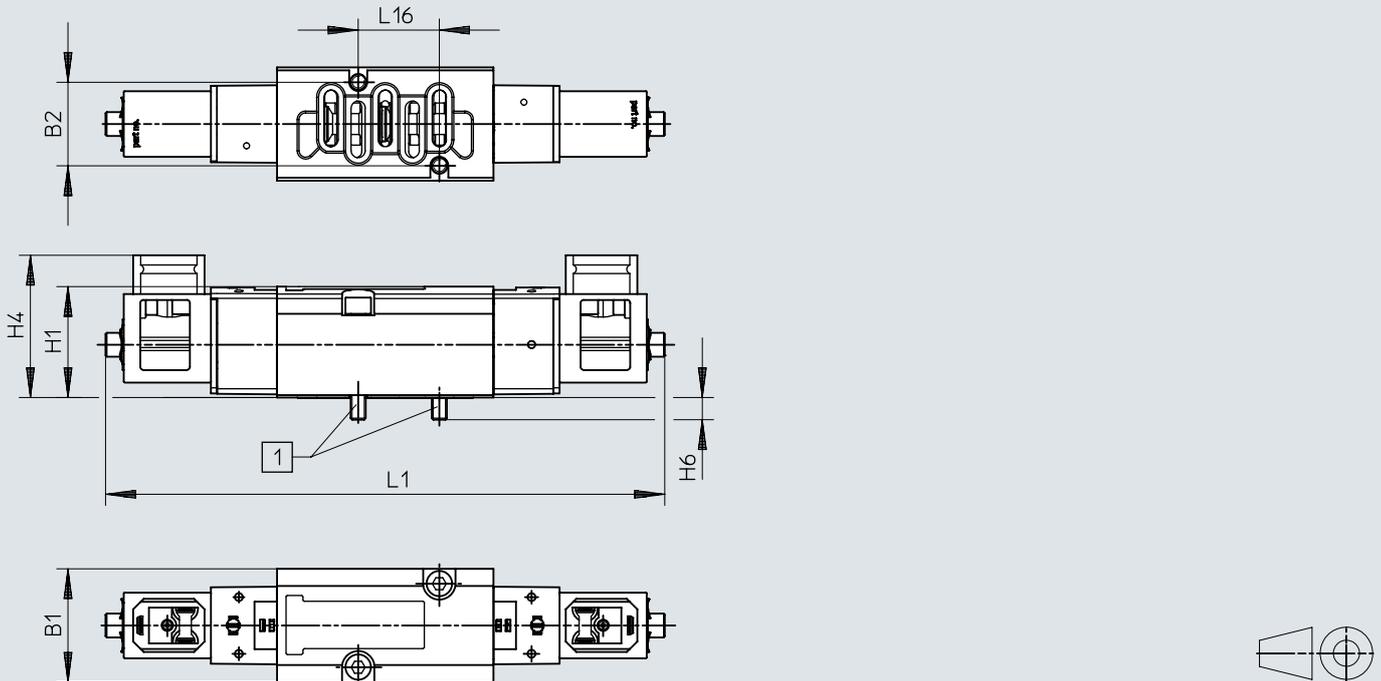


| Type | B1 | B2 | H1 | H4 | H6 | L2 | L16 |
|----------------|----|----|------|------|-----|-------|-----|
| VSVA-BK-M52... | 38 | 28 | 37.2 | 47.7 | 7.5 | 137.6 | 27 |

Datasheet – Width 38 mm

Dimensions - 5/2-way valves, double solenoid, 5/3-way valves

Download CAD data → www.festo.com



[1] Retaining screws M5

| Type | B1 | B2 | H1 | H4 | H6 | L1 | L16 |
|----------------|----|----|------|------|-----|-------|-----|
| VSVA-BK-B52... | 38 | 28 | 37.2 | 47.7 | 7.5 | 186.1 | 27 |
| VSVA-BK-P53... | | | | | | | |

Ordering data

| Code | Circuit symbol | | Part no. | Type |
|---------------------------------------|----------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | | | | |
| - | | Mechanical spring | Internal pilot air supply | 8166594 VSVA-BK-M52-MD-D1-1B2 |
| - | | Pneumatic spring | Internal pilot air supply | 8166593 VSVA-BK-M52-AD-D1-1B2 |
| 5/2-way valve, double solenoid | | | | |
| - | | - | Internal pilot air supply | 8166592 VSVA-BK-B52-D-D1-1B2 |
| 5/3-way solenoid valve | | | | |
| - | | Normally exhausted | Internal pilot air supply | 8166595 VSVA-BK-P53E-D-D1-1B2 |

Datasheet – Width 42 mm

-  - Flow rate
Up to 1300 l/min

-  - Voltage
24 V DC



General technical data

| | |
|----------------------|---|
| Design | Piston spool |
| Sealing principle | Soft |
| Actuation type | Electrical |
| Type of control | Piloted |
| Exhaust air function | Can be throttled, externally or via vertically stacked throttle plate |
| Manual override | Non-detenting, detenting |
| Type of mounting | On sub-base |
| Mounting position | Any |
| Nominal width [mm] | 11 |
| Overlap | Positive overlap |
| Width [mm] | 42 |
| Grid dimension [mm] | 43 |
| Pneumatic ports | Sub-base size 1 to ISO 5599-1 |
| Conforms to standard | ISO 5599-1 |
| Certification | c UL us – Recognized (OL) |

Flow rates

| Valve function | 2/2-way valve | 3/2-way valve | 5/2-way valve | 5/3-way valve |
|------------------------------------|---------------|---------------|---------------|---------------|
| Standard nominal flow rate [l/min] | 1300 | 1100 | 1300 | 1300 |
| Valve | 1600 | 1600 | 2000 | 1900 |
| Valve on individual sub-base | 1400 | 1200 | 1400 | 1400 |
| Pneumatically linked valve | 1300 | 1100 | 1300 | 1400 |

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|-----------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 2x 2/2-way valve | VSVA-B-T22... | 20 | 38 | – | – |
| 2x 3/2-way valve | VSVA-B-T32... | 20 | 38 | – | – |
| 2x 3/2-way valve, reversible | VSVA-B-T32... | 34 | 28 | – | – |
| 5/2-way valve, single solenoid | VSVA-B-M52-A... | 27 | 45 | – | – |
| | VSVA-B-M52-M... | 22 | 60 | – | – |
| 5/2-way valve, double solenoid | VSVA-B-B52... | – | – | 16 | – |
| | VSVA-B-D52... | – | – | – | 19 |
| 5/3-way valve | VSVA-B-P53... | 22 | 65 | – | – |

Datasheet – Width 42 mm

| Operating and environmental conditions | | | | | | | |
|--|---------------------------|--|------------------|------------------|------------------------------|----------------|----------------|
| Valve function | | | 2x 2/2-way valve | 2x 3/2-way valve | 2x 3/2-way valve, reversible | 5/2-way valve | 5/3-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 | Internal pilot air supply | [MPa] | 0.3 ... 1 | 0.3 ... 1 | – | 0.3 ... 1 | 0.3 ... 1 |
| | | [bar] | 3 ... 10 | 3 ... 10 | – | 3 ... 10 | 3 ... 10 |
| | External pilot air supply | [MPa] | 0.3 ... 1 | 0.3 ... 1 | –0.09 ... +1 | –0.09 ... +1.6 | –0.09 ... +1.6 |
| | | [bar] | 3 ... 10 | 3 ... 10 | –0.9 ... +10 | –0.9 ... +16 | –0.9 ... +16 |
| Pilot pressure | [MPa] | 0.3 ... 1 | | | | | |
| | [bar] | 3 ... 10 | | | | | |
| Ambient temperature | | [°C] | –5 ... +50 | | | | |
| Relative humidity | | [%] | 0 ... 90 | | | | |

| Safety characteristics | | | | | | |
|--|--|--|------------------|---------------|---|---------------|
| Valve function | | | 2x 3/2-way valve | 5/2-way valve | 5/2-way valve, with dominant signal at 14 | 5/3-way valve |
| Max. positive test pulse with 0 signal | | [µs] | 1600 | 1400 | 1600 | 1400 |
| Max. negative test pulse with 1 signal | | [µs] | 1100 | 900 | 1100 | 900 |
| Shock resistance | | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | | | | |
| Vibration resistant | | Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6 | | | | |

| Electrical data | | | | | | |
|----------------------------------|---------|---|------------------|------------------|---------------|---------------|
| Valve function | | | 2x 2/2-way valve | 2x 3/2-way valve | 5/2-way valve | 5/3-way valve |
| Electrical connection | | Central plug, round design M12x1, 3-pin | | | | |
| Signal status indication | | LED | | | | |
| Coil characteristics | Voltage | [V DC] | 24 | | | |
| | Power | [W] | 1.3 | 1.3 | 1.6 | 1.6 |
| Permissible voltage fluctuations | | [%] | ±10 | | | |
| Duty cycle | | [%] | 100 | | | |
| Degree of protection to EN 60529 | | IP65, NEMA4 (in combination with a plug socket) | | | | |

| Materials | |
|------------------------|-------------------|
| Housing | PA |
| Seals | NBR, FPM |
| Screws | Galvanised steel |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

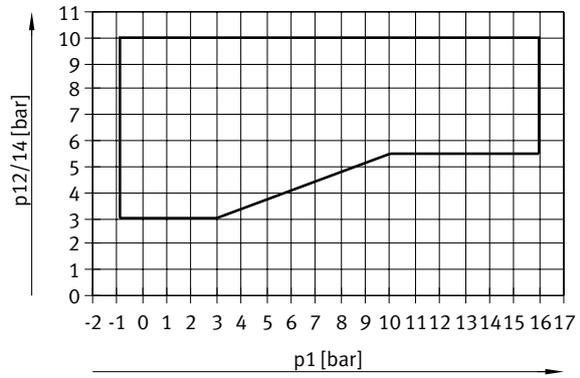
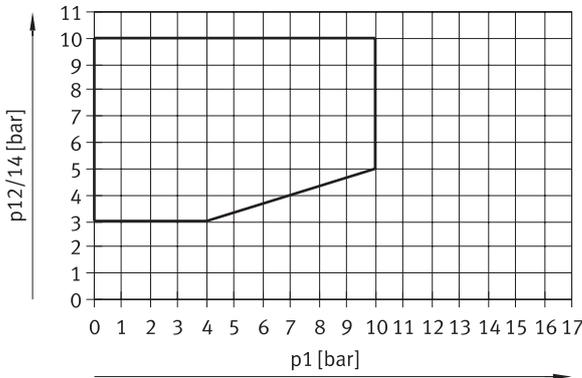
| Product weight | | |
|--------------------------------|-----|-----|
| 2x 2/2-way valve | [g] | 442 |
| 2x 3/2-way valve | [g] | 442 |
| 5/2-way valve, single solenoid | [g] | 426 |
| 5/2-way valve, double solenoid | [g] | 439 |
| 5/3-way valve | [g] | 456 |

Datasheet – Width 42 mm

Pilot pressure p12/14 as a function of working pressure p1

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

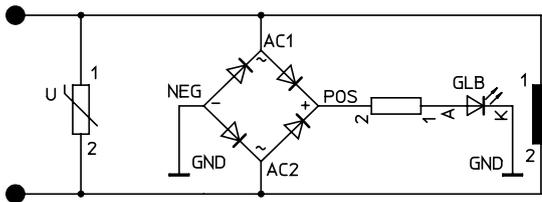
5/2-way valve and 5/3-way valve, external pilot air supply



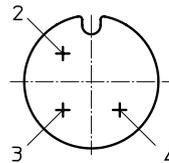
Protective circuit

Each solenoid coil VSVA is provided with a spark arresting protective circuit and protected against polarity reversal.

24 V DC version



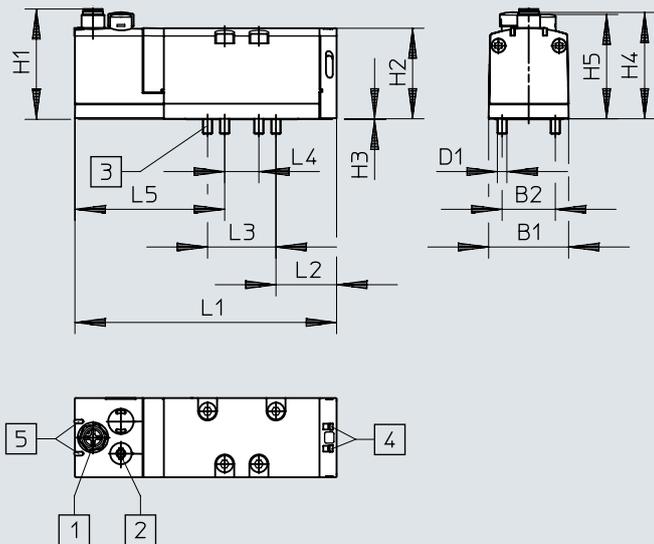
M12x1 – Pin allocation on the valve



- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14

Dimensions

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- [1] Plug, 3-pin
- [2] Manual override
- [3] Captive screws M5x48
- [4] Slot for inscription label
- [5] LED

| Type | B1 | B2 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 |
|--------------------|----|----|----|------|----|------|------|------|-------|----|----|----|------|
| VSVA-B-...-D1-1R5L | 42 | 28 | M5 | 58.3 | 48 | 0.25 | 46.6 | 55.3 | 137.8 | 32 | 36 | 18 | 69.3 |

Ordering data – Width 42 mm

| Ordering data Circuit symbol | Description | Flow direction | Pilot air supply | Part no. | Type |
|-------------------------------------|---|----------------|------------------|---|--------------------------------|
| 2x 2/2-way valve | | | | | |
| | 2x normally closed, pneumatic spring return | Not reversible | Internal | Order via online configurator → Internet: vsva | |
| | 2x normally closed, pneumatic spring return | Not reversible | External | | |
| | 2x normally closed, vacuum operation possible at 3 and 5, pneumatic spring return | Reversible | Internal | | |
| 2x 3/2-way valve | | | | | |
| | 2x normally closed, pneumatic spring return | Not reversible | Internal | 561359 | VSVA-B-T32C-AD-D1-1R5L |
| | 2x normally closed, pneumatic spring return | Not reversible | External | 561369 | VSVA-B-T32C-AZD-D1-1R5L |
| | 2x normally open, pneumatic spring return | Not reversible | Internal | 561360 | VSVA-B-T32U-AD-D1-1R5L |
| | 2x normally open, pneumatic spring return | Not reversible | External | 561370 | VSVA-B-T32U-AZD-D1-1R5L |
| | 1x normally closed, 1x normally open, pneumatic spring return | Not reversible | Internal | 561361 | VSVA-B-T32H-AD-D1-1R5L |
| | 1x normally closed, 1x normally open, pneumatic spring return | Not reversible | External | 561371 | VSVA-B-T32H-AZD-D1-1R5L |
| 2x 3/2-way valve, reversible | | | | | |
| | 2x normally closed, pneumatic spring return | Reversible | External | Order via online configurator → Internet: vsva | |
| | 2x normally open, pneumatic spring return | Reversible | External | | |
| | 1x normally closed, 1x normally open, pneumatic spring return | Reversible | External | | |

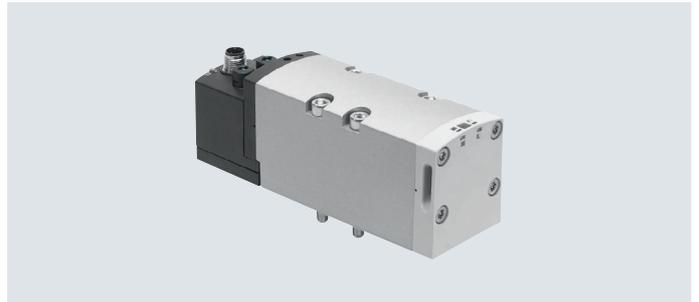
Ordering data – Width 42 mm

| Ordering data Circuit symbol | Description | Flow direction | Pilot air supply | Part no. | Type |
|---------------------------------------|---|----------------|------------------|----------|------------------------|
| 5/2-way valve, single solenoid | | | | | |
| | Pneumatic spring return | Not reversible | Internal | 561362 | VSVA-B-M52-AD-D1-1R5L |
| | Mechanical spring return | Not reversible | Internal | 561363 | VSVA-B-M52-MD-D1-1R5L |
| | Pneumatic spring return | Reversible | External | 561372 | VSVA-B-M52-AZD-D1-1R5L |
| | Mechanical spring return | Reversible | External | 561373 | VSVA-B-M52-MZD-D1-1R5L |
| 5/2-way valve, double solenoid | | | | | |
| | Dominance at 1st signal | Not reversible | Internal | 561364 | VSVA-B-B52-D-D1-1R5L |
| | Dominance at 1st signal | Reversible | External | 561374 | VSVA-B-B52-ZD-D1-1R5L |
| | With dominant signal at 14 | Not reversible | Internal | 561365 | VSVA-B-D52-D-D1-1R5L |
| | With dominant signal at 14 | Reversible | External | 561375 | VSVA-B-D52-ZD-D1-1R5L |
| 5/3-way valve | | | | | |
| | Normally closed, mechanical spring return | Not reversible | Internal | 561366 | VSVA-B-P53C-D-D1-1R5L |
| | Normally closed, Mechanical spring return | Reversible | External | 561376 | VSVA-B-P53C-ZD-D1-1R5L |
| | Normally open, mechanical spring return | Not reversible | Internal | 561368 | VSVA-B-P53U-D-D1-1R5L |
| | Normally open, mechanical spring return | Reversible | External | 561378 | VSVA-B-P53U-ZD-D1-1R5L |
| | Normally exhausted, mechanical spring return | Not reversible | Internal | 561367 | VSVA-B-P53E-D-D1-1R5L |
| | Normally exhausted, mechanical spring return | Reversible | External | 561377 | VSVA-B-P53E-ZD-D1-1R5L |

Datasheet – Width 52 mm

-  - Flow rate
Up to 2800 l/min

-  - Voltage
24 V DC

**General technical data**

| | |
|----------------------|---|
| Design | Piston spool |
| Sealing principle | Soft |
| Actuation type | Electrical |
| Type of control | Piloted |
| Exhaust air function | Can be throttled, externally or via vertically stacked throttle plate |
| Manual override | Non-detenting, detenting |
| Type of mounting | On sub-base |
| Mounting position | Any |
| Nominal width [mm] | 52 |
| Overlap | Positive overlap |
| Width [mm] | 52 |
| Grid dimension [mm] | 59 |
| Pneumatic ports | Sub-base size 2 to ISO 5599-1 |
| Conforms to standard | ISO 5599-1 |
| Certification | c CSA us (OL) c UL us – Recognized (OL) C-Tick |

Flow rates

| Valve function | 2/2-way valve | 3/2-way valve | 5/2-way valve | 5/3-way valve |
|------------------------------------|---------------|---------------|---------------|---------------|
| Standard nominal flow rate [l/min] | 2800 | 2200 | 2800 | 2700 |
| Valve | 4000 | 3000 | 4000 | 3600 |
| Valve on individual sub-base | 2400 | 2000 | 2400 | 2300 |
| Pneumatically linked valve | 2800 | 2200 | 2800 | 2700 |

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|-----------------|-------------------|--------------------|------------------------------|---|
| 2x 2/2-way valve | VSVA-B-T22... | 14 | 35 | – | – |
| 2x 3/2-way valve | VSVA-B-T32... | 20 | 35 | – | – |
| 2x 3/2-way valve, reversible | VSVA-B-T32... | 30 | 30 | – | – |
| 5/2-way valve, single solenoid | VSVA-B-M52-A... | 40 | 45 | – | – |
| | VSVA-B-M52-M... | 20 | 60 | – | – |
| 5/2-way valve, double solenoid | VSVA-B-B52... | – | – | 18 | – |
| | VSVA-B-D52... | – | – | – | 18 |
| 5/3-way valve | VSVA-B-P53... | 23 | 60 | – | – |

Datasheet – Width 52 mm

| Operating and environmental conditions | | | 2x 2/2-way valve | 2x 3/2-way valve | 2x 3/2-way valve, reversible | 5/2-way valve | 5/3-way valve |
|--|---------------------------|-----------|--|------------------|---------------------------------|----------------|----------------|
| Valve function | | | | | | | |
| Operating medium | | | Compressed air to ISO 8573-1:2010 [7:4:4] | | | | |
| Pilot medium | | | Compressed air to ISO 8573-1:2010 [7:4:4] | | | | |
| Note on the operating/pilot medium | | | Lubricated operation possible (in which case lubricated operation will always be required) | | | | |
| Operating pressure | Internal pilot air supply | [MPa] | 0.3 ... 1 | 0.3 ... 1 | – | 0.3 ... 1 | 0.3 ... 1 |
| | | [bar] | 3 ... 10 | 3 ... 10 | – | 3 ... 10 | 3 ... 10 |
| | External pilot air supply | [MPa] | 0.3 ... 1 | 0.3 ... 1 | –0.09 ... +1 | –0.09 ... +1.6 | –0.09 ... +1.6 |
| | | [bar] | 3 ... 10 | 3 ... 10 | –0.9 ... +10 | –0.9 ... +16 | –0.9 ... +16 |
| Pilot pressure | [MPa] | 0.3 ... 1 | | | | | |
| | [bar] | 3 ... 10 | | | | | |
| Ambient temperature | | [°C] | –5 ... +50 | | | | |
| Relative humidity | | [%] | 0 ... 90 | | | | |
| CE marking (see declaration of conformity) | | | To EU EMC Directive ¹⁾ | | | | |
| UKCA marking (see declaration of conformity) ¹⁾ | | | To UK EMC regulations | | | | |
| | | | To UK RoHS regulations | | | | |
| KC marking | | | KC EMC | | | | |

1) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/... d Support/Downloads](http://www.festo.com/catalogue/...d/Support/Downloads).

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Safety characteristics

| | | |
|--|--|------|
| Max. positive test pulse with 0 signal | [µs] | 1000 |
| Max. negative test pulse with 1 signal | [µs] | 3500 |
| Shock resistance | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | |
| Vibration resistant | Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6 | |

Electrical data

| | | | |
|---|---------|--------|---|
| Electrical connection | | | Central plug, round design M12x1, 3-pin |
| Signal status indication | | | LED |
| Coil characteristics | Voltage | [V DC] | 24 |
| | Power | [W] | 4.6 |
| Permissible voltage fluctuations | | [%] | ±10 |
| Nominal pick-up current per solenoid coil | | [mA] | 165 |
| Nominal current with current reduction | | [mA] | 35 |
| Time until current reduction | | [ms] | 30 |
| Duty cycle | | [%] | 100 |
| Degree of protection to EN 60529 | | | IP65, NEMA4 (in combination with a plug socket) |

Materials

| | |
|------------------------|------------------------|
| Housing | Die-cast aluminium, PA |
| Seals | HNBR, NBR, FPM |
| Screws | Galvanised steel |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

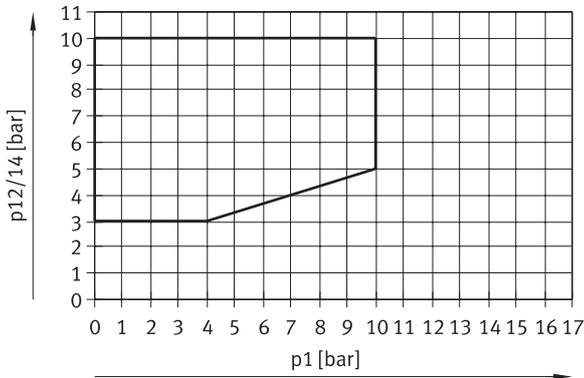
Product weight

| | | |
|--------------------------------|-----|-----|
| 2x 2/2-way valve | [g] | 740 |
| 2x 3/2-way valve | [g] | 740 |
| 5/2-way valve, single solenoid | [g] | 702 |
| 5/2-way valve, double solenoid | [g] | 732 |
| 5/3-way valve | [g] | 780 |

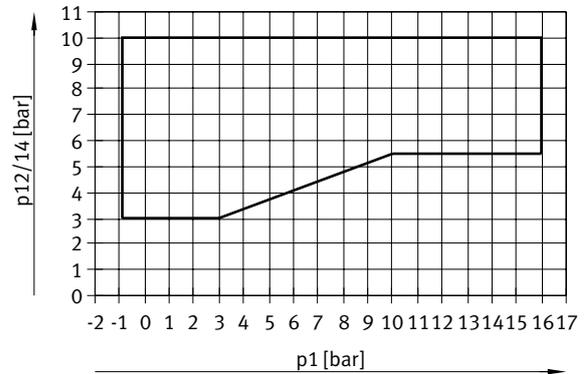
Datasheet – Width 52 mm

Pilot pressure p12/14 as a function of working pressure p1

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



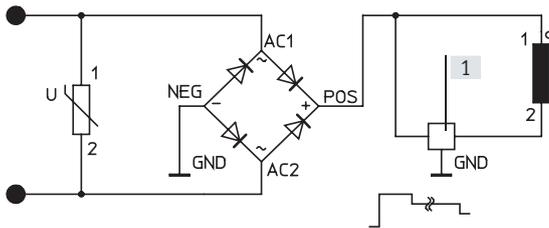
5/2-way valve and 5/3-way valve, external pilot air supply



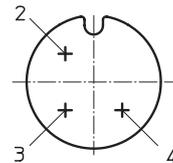
Protective circuit

Each solenoid coil VSVA is provided with a spark arresting protective circuit and protected against polarity reversal.

24 V DC version



M12x1 – Pin allocation on the valve

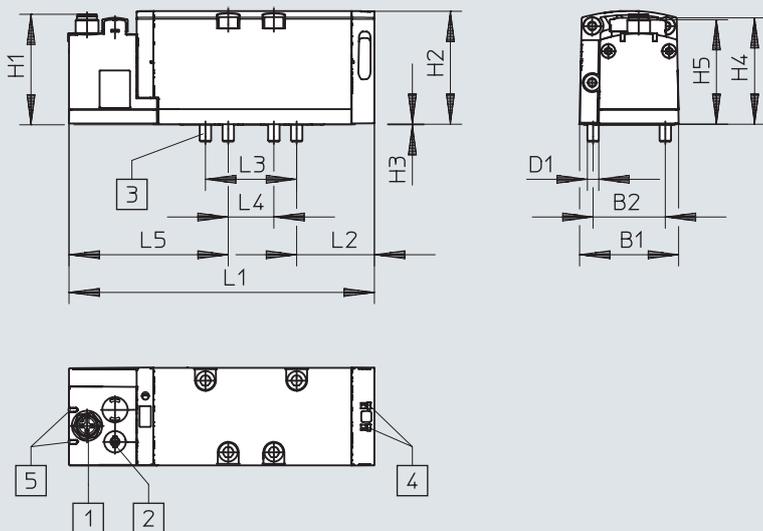


- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14

[1] Holding current reduction

Dimensions

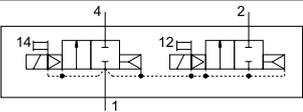
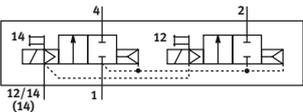
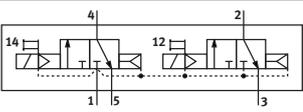
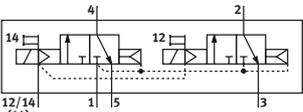
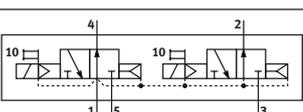
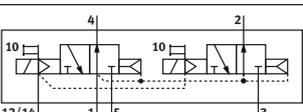
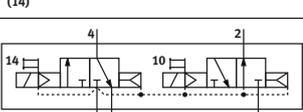
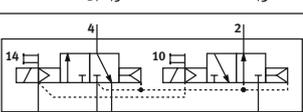
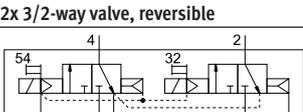
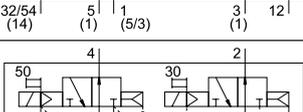
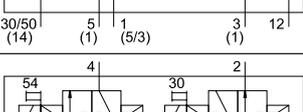
Download CAD data → www.festo.com



- [1] Plug, 3-pin
- [2] Manual override
- [3] Captive screws M6x60
- [4] Slot for inscription label
- [5] LED

| Type | B1 | B2 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 |
|--------------------|----|----|----|------|----|-----|------|------|-------|------|----|----|------|
| VSVA-B-...-D2-1R5L | 52 | 38 | M6 | 58.3 | 60 | 0.3 | 56.4 | 55.3 | 160.7 | 40.9 | 48 | 24 | 64.3 |

Ordering data – Width 52 mm

| Ordering data | Description | Flow direction | Pilot air supply | Part no. | Type |
|--|---|----------------|------------------|---|--------------------------------|
| 2x 2/2-way valve | | | | | |
|  | 2x normally closed, pneumatic spring return | Not reversible | Internal | Order via online configurator → Internet: vsva | |
|  | 2x normally closed, pneumatic spring return | Not reversible | External | | |
| 2x 3/2-way valve | | | | | |
|  | 2x normally closed, pneumatic spring return | Not reversible | Internal | 566990 | VSVA-B-T32C-AD-D2-1R5L |
|  | 2x normally closed, pneumatic spring return | Not reversible | External | 567000 | VSVA-B-T32C-AZD-D2-1R5L |
|  | 2x normally open, pneumatic spring return | Not reversible | Internal | 566991 | VSVA-B-T32U-AD-D2-1R5L |
|  | 2x normally open, pneumatic spring return | Not reversible | External | 567001 | VSVA-B-T32U-AZD-D2-1R5L |
|  | 1x normally closed, 1x normally open, pneumatic spring return | Not reversible | Internal | 566992 | VSVA-B-T32H-AD-D2-1R5L |
|  | 1x normally closed, 1x normally open, pneumatic spring return | Not reversible | External | 567002 | VSVA-B-T32H-AZD-D2-1R5L |
| 2x 3/2-way valve, reversible | | | | | |
|  | 2x normally closed, pneumatic spring return | Reversible | External | Order via online configurator → Internet: vsva | |
|  | 2x normally open, pneumatic spring return | Reversible | External | | |
|  | 1x normally closed, 1x normally open, pneumatic spring return | Reversible | External | | |

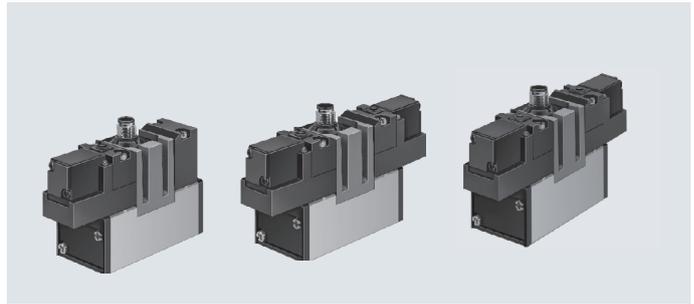
Ordering data – Width 52 mm

| Ordering data Circuit symbol | Description | Flow direction | Pilot air supply | Part no. | Type |
|---------------------------------------|---|----------------|------------------|----------|------------------------|
| 5/2-way valve, single solenoid | | | | | |
| | Pneumatic spring return | Not reversible | Internal | 566993 | VSVA-B-M52-AD-D2-1R5L |
| | Pneumatic spring return | Reversible | External | 567003 | VSVA-B-M52-AZD-D2-1R5L |
| | Mechanical spring return | Not reversible | Internal | 566994 | VSVA-B-M52-MD-D2-1R5L |
| | Mechanical spring return | Reversible | External | 567004 | VSVA-B-M52-MZD-D2-1R5L |
| 5/2-way valve, double solenoid | | | | | |
| | Dominance at 1st signal | Not reversible | Internal | 566995 | VSVA-B-B52-D-D2-1R5L |
| | Dominance at 1st signal | Reversible | External | 567005 | VSVA-B-B52-ZD-D2-1R5L |
| | With dominant signal at 14 | Not reversible | Internal | 566996 | VSVA-B-D52-D-D2-1R5L |
| | With dominant signal at 14 | Reversible | External | 567006 | VSVA-B-D52-ZD-D2-1R5L |
| 5/3-way valve | | | | | |
| | Normally closed, mechanical spring return | Not reversible | Internal | 566997 | VSVA-B-P53C-D-D2-1R5L |
| | Normally closed, mechanical spring return | Reversible | External | 567007 | VSVA-B-P53C-ZD-D2-1R5L |
| | Normally open, mechanical spring return | Not reversible | Internal | 566999 | VSVA-B-P53U-D-D2-1R5L |
| | Normally open, mechanical spring return | Reversible | External | 567009 | VSVA-B-P53U-ZD-D2-1R5L |
| | Normally exhausted, mechanical spring return | Not reversible | Internal | 566998 | VSVA-B-P53E-D-D2-1R5L |
| | Normally exhausted, mechanical spring return | Reversible | External | 567008 | VSVA-B-P53E-ZD-D2-1R5L |

Datasheet – Width 65 mm

-  - Flow rate
Up to 4600 l/min

-  - Voltage
24 V DC



General technical data

| | |
|----------------------|-------------------------------|
| Design | Piston spool |
| Sealing principle | Soft |
| Actuation type | Electrical |
| Type of control | Piloted |
| Flow direction | Not reversible |
| Exhaust air function | Can be throttled |
| Manual override | Non-detenting |
| Type of mounting | With through-hole |
| Mounting position | Any |
| Nominal width [mm] | 14.5 |
| Width [mm] | 65 |
| Grid dimension [mm] | 71 |
| Pneumatic ports | Sub-base size 3 to ISO 5599-1 |
| Conforms to standard | ISO 5599-1 |

Flow rates

| Valve function | 5/2-way valve | 5/3-way valve | | |
|------------------------------------|---------------|-----------------|--------------------|---------------|
| | | Normally closed | Normally exhausted | Normally open |
| Standard nominal flow rate [l/min] | 4500 | 4100 | 4600 | 4000 |

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|-------------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | MEBH-5/2-... | 59 | 87 | – | – |
| | MEBH-5/2-D-1-ZSR-FR-... | 28 | 109 | – | – |
| 5/2-way valve, double solenoid | JMEBH-... | – | – | 16 | – |
| | JMEBDH-... | – | – | – | 20 |
| 5/3-way valve | MEBH-5/3G-... | 38 | 130 | – | – |
| | MEBH-5/3E-... | 38 | 130 | – | – |
| | MEBH-5/3B-... | 38 | 130 | – | – |

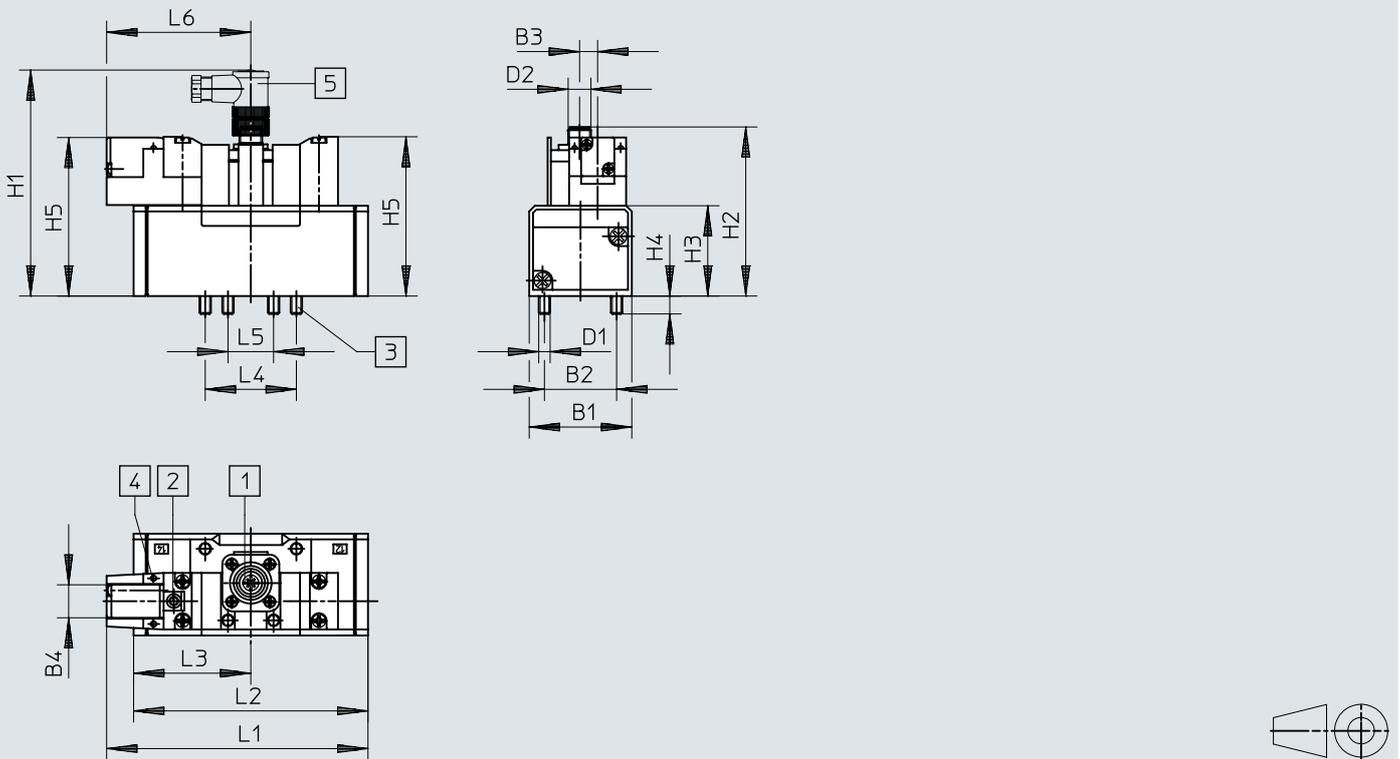
Datasheet – Width 65 mm

| Operating and environmental conditions | | | |
|--|---------|--|-------------------|
| Reset method | | Pneumatic spring | Mechanical spring |
| 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] | 0.2 ... 1 | 0.3 ... 1 |
| | [bar] | 2 ... 10 | 3 ... 10 |
| Ambient temperature | [°C] | -5 ... +50 | |
| Temperature of medium | [°C] | -5 ... +50 | |
| Relative humidity | [%] | 0 ... 90 | |
| Electrical data | | | |
| Electrical connection | | Central plug, round design M12x1, 4-pin | |
| Coil characteristics | Voltage | [V DC] | 24 |
| | Power | [W] | 2.5 |
| Degree of protection to EN 60529 | | IP65 | |
| Materials | | | |
| Housing | | Die-cast aluminium | |
| Seals | | NBR | |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L | |

Datasheet – Width 65 mm

Dimensions – 5/2-way valves, single solenoid

Download CAD data → www.festo.com



[1] Plug socket mounting adjustable by 3x30°

[3] Captive retaining screws

[4] LED indicator

[5] Angled socket NECB → page 173

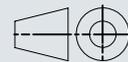
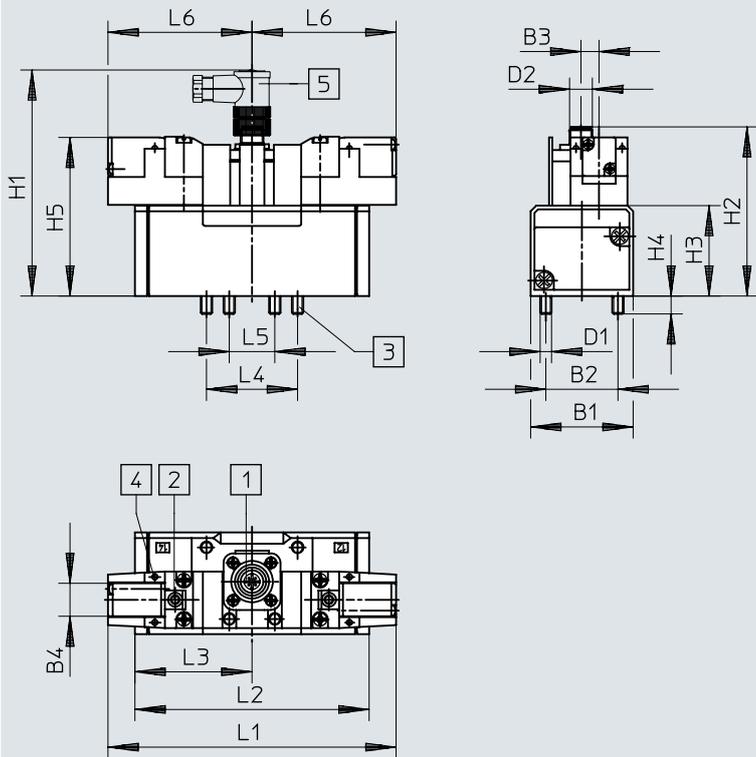
[2] Manual override

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|-------------------|----|----|----|------|----|-----|-----|------|----|----|------|-------|-------|------|----|----|----|
| MEBH-5/2 ... | 65 | 48 | 12 | 17.5 | M8 | M12 | 130 | 97.8 | 55 | 12 | 93.1 | 158.7 | 145.4 | 72.7 | 64 | 32 | 86 |
| MEBH-5/2-...-FR-C | | | | | | | | | | | | 178 | 164.7 | | | | |

Datasheet – Width 65 mm

Dimensions - 5/2-way valves, double solenoid, 5/3-way valves

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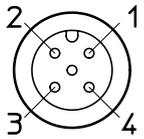
- [1] Plug socket mounting adjustable by 3x30°
- [2] Manual override
- [3] Captive retaining screws
- [4] LED indicator
- [5] Angled socket NECB → page 173

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|-----------------|----|----|----|------|----|-----|-----|------|----|----|------|-------|-------|------|----|----|----|
| JMEBH-5/2- ... | 65 | 48 | 12 | 17.5 | M8 | M12 | 130 | 97.8 | 55 | 12 | 93.1 | 171.9 | 145.4 | 72.7 | 64 | 32 | 86 |
| JMEBDH-5/2- ... | | | | | | | | | | | | | 145.4 | 72.7 | | | |
| MEBH-5/3... | | | | | | | | | | | | | 184 | 92 | | | |

Ordering data – Width 65 mm

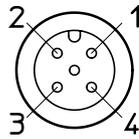
Central plug M12 – Pin allocation

5/2-way valve, single solenoid



- 1 Not assigned
- 2 Not assigned
- 3 com (-)
- 4 Signal (+) Solenoid 14

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



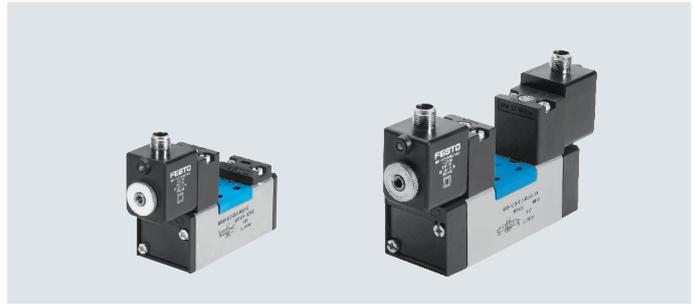
- 1 Not assigned
- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14

| Ordering data | | | | | |
|---------------------------------------|--|------------------|------------|---------------|------------------------------|
| Circuit symbol | Description | Pilot air supply | Weight [g] | Part no. | Type |
| 5/2-way valve, single solenoid | | | | | |
| | Pneumatic spring return | Internal | 1000 | 184507 | MEBH-5/2-D-3-ZSR-C |
| | Mechanical spring return | Internal | 1000 | 184508 | MEBH-5/2-D-3-ZSR-FR-C |
| 5/2-way valve, double solenoid | | | | | |
| | - | Internal | 1080 | 184509 | JMEBH-5/2-D-3-ZSR-C |
| | With dominant signal at 14 | Internal | 1080 | 184510 | JMEBDH-5/2-D-3-ZSR-C |
| 5/3-way valve | | | | | |
| | Normally closed, mechanical spring return | Internal | 1120 | 184512 | MEBH-5/3G-D-3-ZSR-C |
| | Normally exhausted, mechanical spring return | Internal | 1120 | 184511 | MEBH-5/3E-D-3-ZSR-C |
| | Normally open, mechanical spring return | Internal | 1120 | 184513 | MEBH-5/3B-D-3-ZSR-C |

Datasheet – Width 42 mm

-  - Flow rate
Up to 1200 l/min

-  - Voltage
24 V DC



General technical data

| | |
|----------------------|--|
| Design | Piston spool |
| Sealing principle | Soft |
| Actuation type | Electrical |
| Type of control | Piloted |
| Flow direction | With external pilot air supply Reversible With internal pilot air supply Not reversible |
| Exhaust air function | Can be throttled |
| Manual override | Non-detenting |
| Type of mounting | On sub-base with through-hole |
| Mounting position | Any |
| Nominal width [mm] | 8 |
| Overlap | Positive overlap |
| Width [mm] | 42 |
| Grid dimension [mm] | 43 |
| Pneumatic ports | Sub-base size 1 to ISO 5599-1 |
| Noise level [dB (A)] | 85 |
| Conforms to standard | ISO 5599-1 |

Flow rates

| | | |
|----------------------------|---------|------|
| Standard nominal flow rate | [l/min] | 1200 |
|----------------------------|---------|------|

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|--------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | MDH-5/2-... | 25 | 36 | – | – |
| | MDH-5/2-...-FR-... | 20 | 42 | – | – |
| 5/2-way valve, double solenoid | JMDH-... | – | – | 18 | – |
| | JMDDH-... | – | – | 18 | 18 |
| 5/3-way valve | MDH-5/3G-... | 25 | 55 | – | – |
| | MDH-5/3E-... | 25 | 55 | – | – |
| | MDH-5/3B-... | 25 | 55 | – | – |

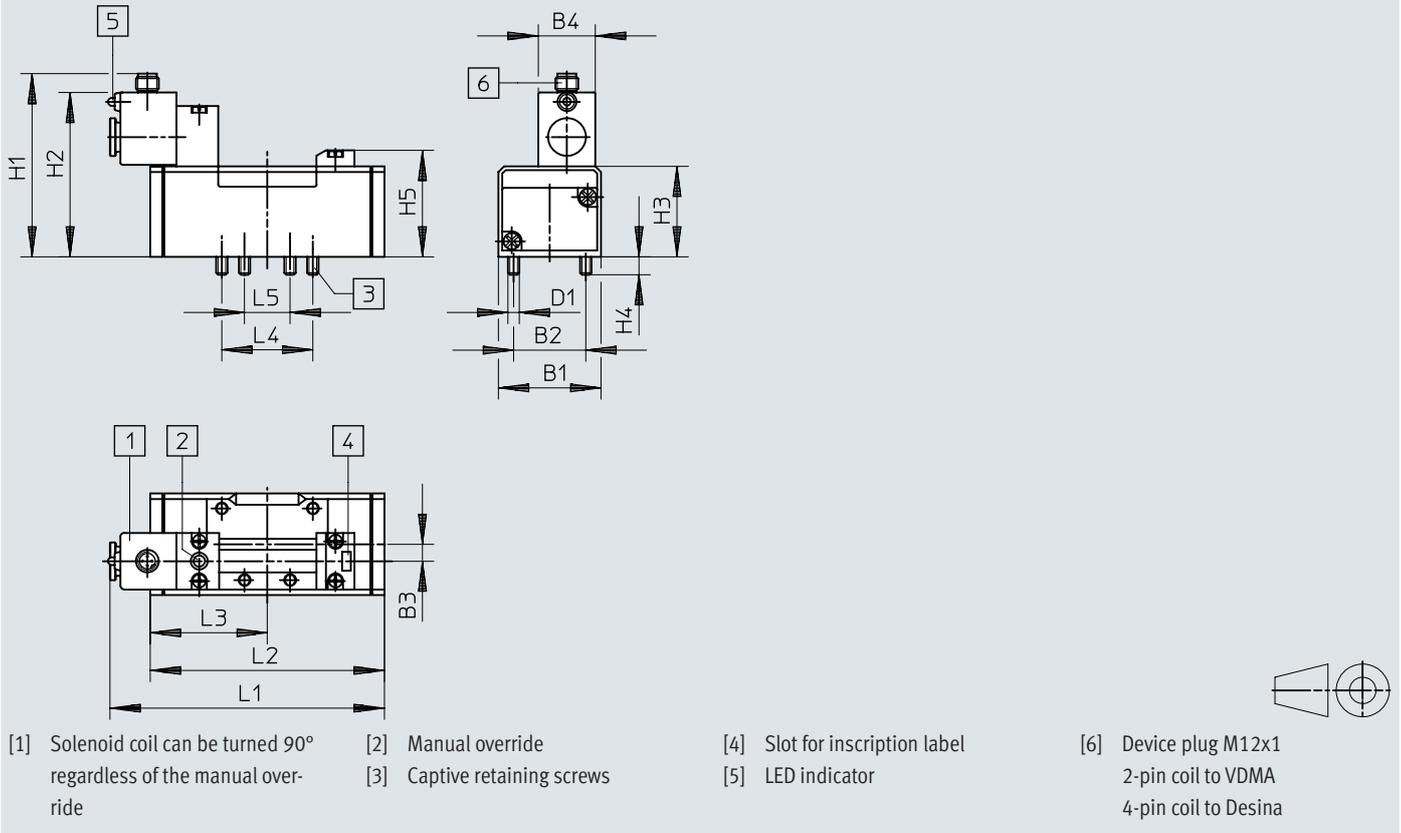
Datasheet – Width 42 mm

| Operating and environmental conditions | | | |
|---|---------------------------|--|-------------------|
| Reset method | | Pneumatic spring | Mechanical spring |
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Pilot medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Note on the operating/pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) | |
| Operating pressure | Internal pilot air supply | [bar] | 2 ... 10 |
| | External pilot air supply | [bar] | -0.9 ... +16 |
| Pilot pressure | Internal pilot air supply | [bar] | 2 ... 10 |
| | External pilot air supply | [bar] | 3 ... 10 |
| Ambient temperature | | [°C] | -10 ... +50 |
| Temperature of medium | | [°C] | -10 ... +50 |
| Safety characteristics | | | |
| Max. positive test pulse with 0 signal | | [µs] | 3800 |
| Max. negative test pulse with 1 signal | | [µs] | 4900 |
| Shock resistance | | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | |
| Vibration resistant | | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | |
| Electrical data | | | |
| Electrical connection | | M12x1 | |
| Coil characteristics | Voltage | [V DC] | 24 |
| | Power | [W] | 2.7 |
| Permissible voltage fluctuations | | [%] | ±10 |
| Duty cycle | | [%] | 100 |
| Degree of protection to EN 60529 | | IP65 | |
| Materials | | | |
| Housing | | Die-cast aluminium | |
| Seals | | HNBR, NBR | |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L | |

Datasheet – Width 42 mm

Dimensions – 5/2-way valves, single solenoid

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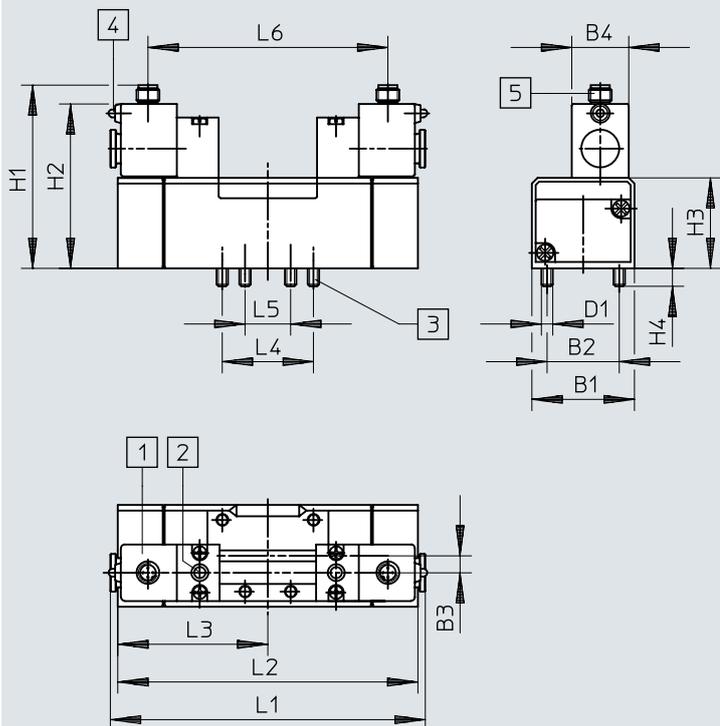


| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|-------------------|----|----|----|----|----|------|------|----|----|------|-------|------|------|----|----|----|
| MDH-5/2 ... | 42 | 28 | 6 | 30 | M5 | 87.2 | 77.2 | 38 | 9 | 46.5 | 121.8 | 87.6 | 43.8 | 36 | 18 | - |
| MDH-5/2-...-FR... | | | | | | | | | | | 132.2 | 98 | | | | |

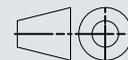
Datasheet – Width 42 mm

Dimensions - 5/2-way valves, double solenoid, 5/3-way valves

Download CAD data → www.festo.com



- [1] Solenoid coil can be turned 90° regardless of the manual override
- [2] Manual override
- [3] Captive retaining screws
- [4] LED indicator
- [5] Device plug M12x1
2-pin coil to VDMA
4-pin coil to Desina

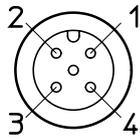


| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------------|----|----|----|----|----|------|------|----|----|----|-----|-------|------|----|----|-------|
| JMDH-5/2- ... | 42 | 28 | 6 | 30 | M5 | 87.2 | 77.2 | 38 | 9 | - | 148 | 87.6 | 43.8 | 36 | 18 | 108.5 |
| JMDDH-5/2- ... | | | | | | | | | | | | 87.6 | 43.8 | | | |
| MDH-5/3... | | | | | | | | | | | | 108.4 | 54.3 | | | |

Ordering data – Width 42 mm

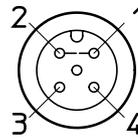
Terminal assignment

M12 plug – 2-pin to VDMA



- 1 Not assigned
- 2 Not assigned
- 3 com (-)
- 4 Signal (+)

M12 plug – 4-pin to Desina



- 1 Connected to 2
- 2-Connected to 1
- 3 com (-)
- 4 Signal (+)

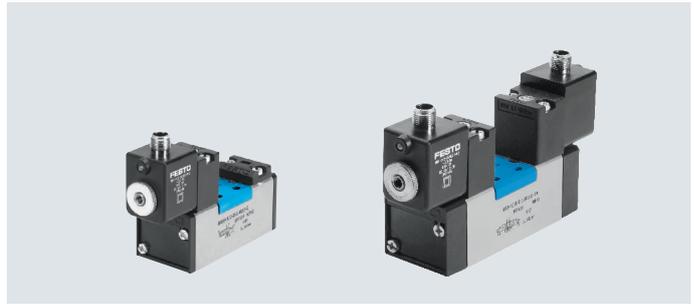
Ordering data – Solenoid valves

| Circuit symbol | Description | Coil | Pilot air supply | Weight [g] | Part no. | Type |
|---------------------------------------|--|-----------------|------------------|------------|---------------|--------------------------------|
| 5/2-way valve, single solenoid | | | | | | |
| | Pneumatic spring return | 2-pin to VDMA | Internal | 420 | 197125 | MDH-5/2-D-1-M12-C |
| | | 4-pin to Desina | Internal | 420 | 540803 | MDH-5/2-D-1-M12D-C |
| | Pneumatic spring return | 2-pin to VDMA | External | 420 | 533332 | MDH-5/2-D-1-S-M12-C |
| | | 4-pin to Desina | External | 420 | 540810 | MDH-5/2-D-1-S-M12D-C |
| | Mechanical spring return | 2-pin to VDMA | Internal | 420 | 533010 | MDH-5/2-D-1-FR-M12-C |
| | | 4-pin to Desina | Internal | 420 | 540804 | MDH-5/2-D-1-FR-M12D-C |
| | Mechanical spring return | 2-pin to VDMA | External | 420 | 533761 | MDH-5/2-D-1-S-FR-M12-C |
| | | 4-pin to Desina | External | 420 | 540811 | MDH-5/2-D-1-S-FR-M12D-C |
| 5/2-way valve, double solenoid | | | | | | |
| | - | 2-pin to VDMA | Internal | 550 | 532687 | JMDH-5/2-D-1-M12-C |
| | | 4-pin to Desina | Internal | 550 | 540809 | JMDH-5/2-D-1-M12D-C |
| | With dominant signal at 14 | 2-pin to VDMA | Internal | 550 | 539079 | JMDH-5/2-D-1-M12-C |
| | | 4-pin to Desina | Internal | 550 | 540808 | JMDH-5/2-D-1-M12D-C |
| 5/3-way valve | | | | | | |
| | Normally closed, mechanical spring return | 2-pin to VDMA | Internal | 580 | 525307 | MDH-5/3G-D-1-M12-C |
| | | 4-pin to Desina | Internal | 580 | 540806 | MDH-5/3G-D-1-M12D-C |
| | Normally exhausted, mechanical spring return | 2-pin to VDMA | Internal | 580 | 197126 | MDH-5/3E-D-1-M12-C |
| | | 4-pin to Desina | Internal | 580 | 540805 | MDH-5/3E-D-1-M12D-C |
| | Normally open, mechanical spring return | 2-pin to VDMA | Internal | 580 | 533005 | MDH-5/3B-D-1-M12-C |
| | | 4-pin to Desina | Internal | 580 | 540807 | MDH-5/3B-D-1-M12D-C |

Datasheet – Width 52 mm

-  - Flow rate
Up to 2300 l/min

-  - Voltage
24 V DC



General technical data

| | |
|----------------------|---|
| Design | Piston spool |
| Sealing principle | Soft |
| Actuation type | Electrical |
| Type of control | Piloted |
| Flow direction | Not reversible |
| Exhaust air function | Can be throttled |
| Manual override | Non-detenting |
| Type of mounting | On sub-base with through-hole and screw |
| Mounting position | Any |
| Nominal width [mm] | 11.5 |
| Overlap | Positive overlap |
| Width [mm] | 52 |
| Grid dimension [mm] | 56 |
| Pneumatic ports | Sub-base size 2 to ISO 5599-1 |
| Noise level [dB (A)] | 85 |
| Conforms to standard | ISO 5599-1 |

Flow rates

| | | |
|----------------------------|---------|------|
| Standard nominal flow rate | [l/min] | 2300 |
|----------------------------|---------|------|

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|--------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | MDH-5/2-... | 45 | 60 | – | – |
| | MDH-5/2-...-FR-... | 25 | 60 | – | – |
| 5/2-way valve, double solenoid | JMDH-... | – | – | 20 | – |
| | JMDDH-... | – | – | 20 | 20 |
| 5/3-way valve | MDH-5/3G-... | 35 | 70 | – | – |
| | MDH-5/3E-... | 35 | 70 | – | – |
| | MDH-5/3B-... | 35 | 70 | – | – |

Datasheet – Width 52 mm

| Operating and environmental conditions | | | |
|--|-------|--|-------------------|
| Reset method | | Pneumatic spring | Mechanical spring |
| 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 | [bar] | 2 ... 10 | 3 ... 10 |
| Ambient temperature | [°C] | -10 ... +50 | |
| Temperature of medium | [°C] | -10 ... +50 | |

| Safety characteristics | | | |
|--|------|---|--|
| Max. positive test pulse with 0 signal | [µs] | 3800 | |
| Max. negative test pulse with 1 signal | [µs] | 4900 | |
| Shock resistance | | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | |
| Vibration resistant | | Transport application test with severity level 1 to FN 942017-4 and EN 60068-26 | |

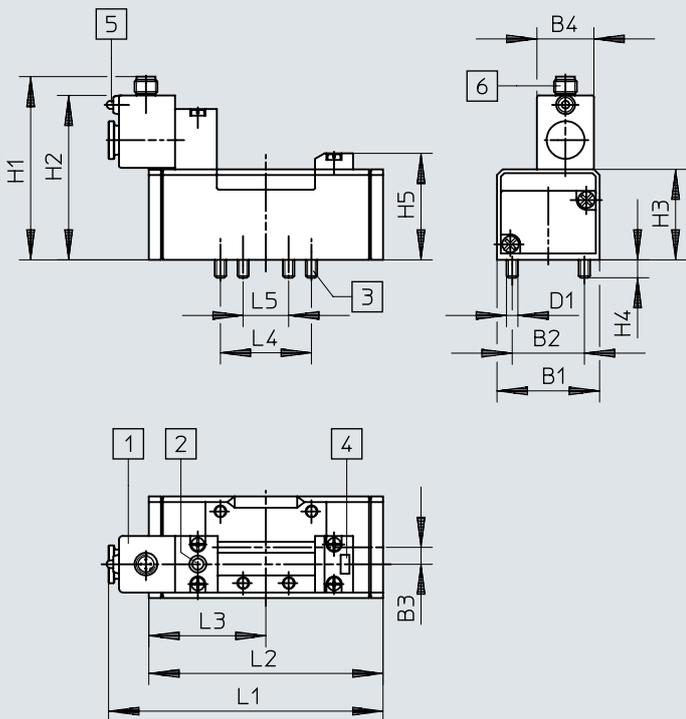
| Electrical data | | | |
|----------------------------------|---------|--------|-----|
| Electrical connection | | M12x1 | |
| Coil characteristics | Voltage | [V DC] | 24 |
| | Power | [W] | 2.7 |
| Permissible voltage fluctuations | | [%] | ±10 |
| Duty cycle | | [%] | 100 |
| Degree of protection to EN 60529 | | IP65 | |

| Materials | | | |
|------------------------|--|--------------------|--|
| Housing | | Die-cast aluminium | |
| Seals | | HNBR, NBR | |
| Note on materials | | RoHS-compliant | |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L | |

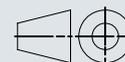
Datasheet – Width 52 mm

Dimensions – 5/2-way valves, single solenoid

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- [1] Solenoid coil can be turned 90° regardless of the manual override
- [2] Manual override
- [3] Captive retaining screws
- [4] Slot for inscription label
- [5] LED indicator
- [6] Device plug M12x1
2-pin coil to VDMA
4-pin coil to Desina

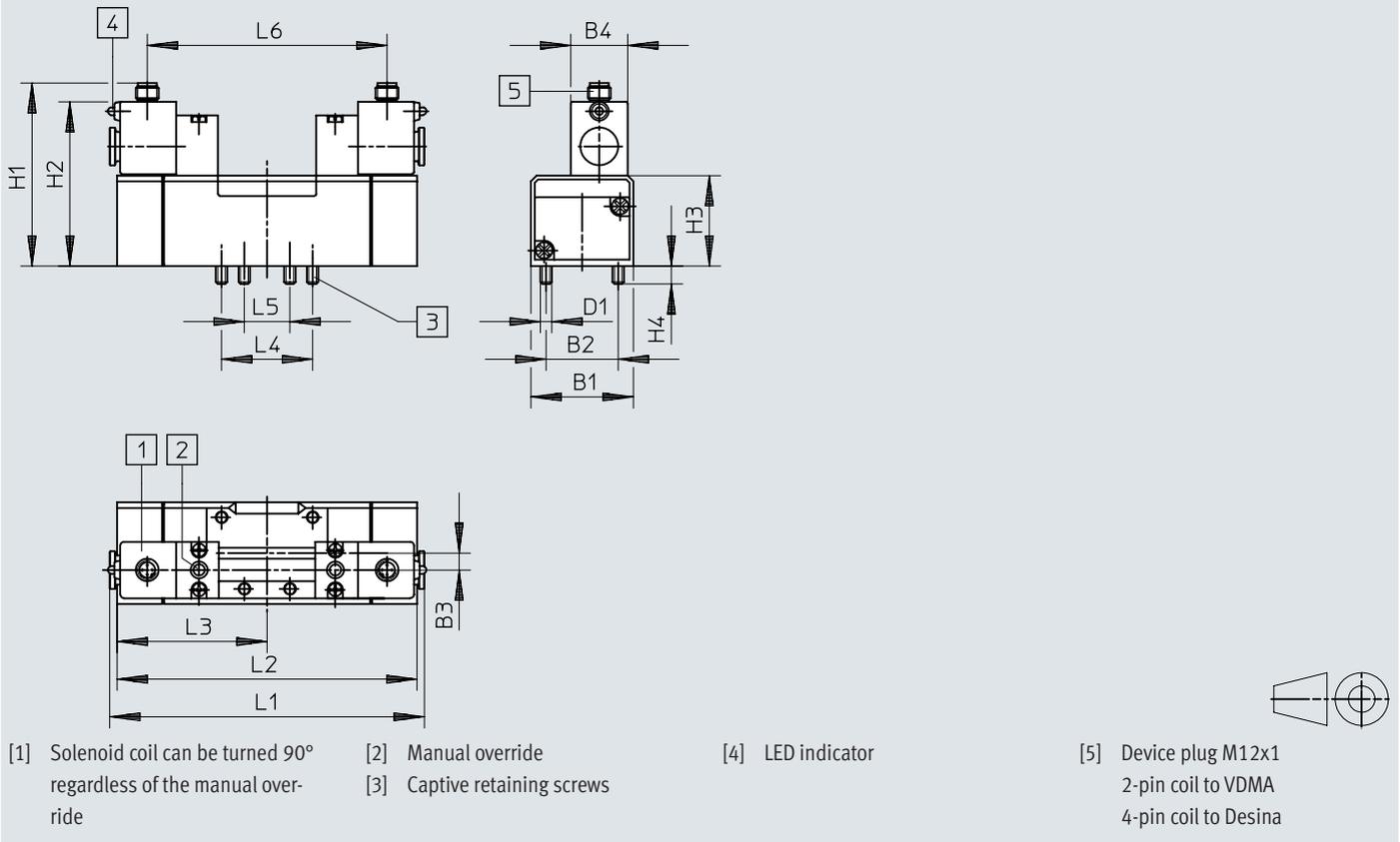


| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|-------------------|----|----|----|----|----|------|------|----|-----|------|-------|-------|------|----|----|----|
| MDH-5/2 ... | 54 | 38 | 9 | 30 | M6 | 97.2 | 87.2 | 48 | 9.5 | 56.5 | 144.6 | 123.4 | 61.7 | 48 | 24 | - |
| MDH-5/2-...-FR... | | | | | | | | | | | 161.9 | 140.6 | | | | |

Datasheet – Width 52 mm

Dimensions - 5/2-way valves, double solenoid, 5/3-way valves

Download CAD data → www.festo.com

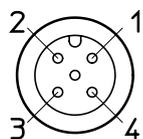


| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------------|----|----|----|----|----|------|------|----|-----|----|-------|-------|------|----|----|-------|
| JMDH-5/2- ... | 54 | 38 | 9 | 30 | M6 | 97.2 | 87.2 | 48 | 9.5 | - | 165.8 | 123.4 | 61.7 | 48 | 24 | 126.3 |
| JMDDH-5/2- ... | | | | | | | | | | | | 123.4 | 61.7 | | | |
| MDH-5/3... | | | | | | | | | | | | 158 | 79 | | | |

Ordering data – Width 52 mm

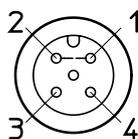
Terminal assignment

M12 plug – 2-pin to VDMA



- 1 Not assigned
- 2 Not assigned
- 3 com (-)
- 4 Signal (+)

M12 plug – 4-pin to Desina



- 1 Connected to 2
- 2-Connected to 1
- 3 com (-)
- 4 Signal (+)

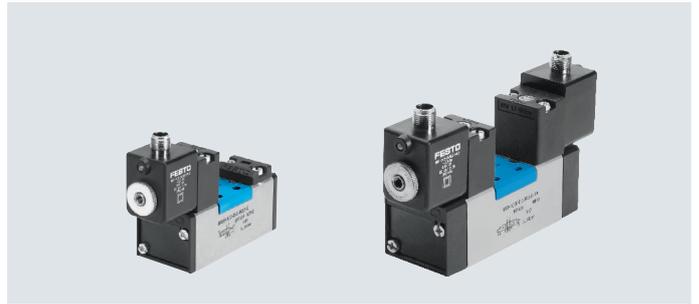
Ordering data

| Circuit symbol | Description | Coil | Pilot air supply | Weight [g] | Part no. | Type |
|---------------------------------------|--|-----------------|------------------|------------|---------------|------------------------------|
| 5/2-way valve, single solenoid | | | | | | |
| | Pneumatic spring return | 2-pin to VDMA | Internal | 810 | 533008 | MDH-5/2-D-2-M12-C |
| | | 4-pin to Desina | Internal | 810 | 540812 | MDH-5/2-D-2-M12D-C |
| | Mechanical spring return | 2-pin to VDMA | Internal | 810 | 533011 | MDH-5/2-D-2-FR-M12-C |
| | | 4-pin to Desina | Internal | 810 | 540813 | MDH-5/2-D-2-FR-M12D-C |
| 5/2-way valve, double solenoid | | | | | | |
| | - | 2-pin to VDMA | Internal | 940 | 533013 | JMDH-5/2-D-2-M12-C |
| | | 4-pin to Desina | Internal | 940 | 540818 | JMDH-5/2-D-2-M12D-C |
| | With dominant signal at 14 | 2-pin to VDMA | Internal | 940 | 539077 | JMDH-5/2-D-2-M12-C |
| | | 4-pin to Desina | Internal | 940 | 540817 | JMDH-5/2-D-2-M12D-C |
| 5/3-way valve | | | | | | |
| | Normally closed, mechanical spring return | 2-pin to VDMA | Internal | 1000 | 539078 | MDH-5/3G-D-2-M12-C |
| | | 4-pin to Desina | Internal | 1000 | 540815 | MDH-5/3G-D-2-M12D-C |
| | Normally exhausted, mechanical spring return | 2-pin to VDMA | Internal | 1000 | 533016 | MDH-5/3E-D-2-M12-C |
| | | 4-pin to Desina | Internal | 1000 | 540814 | MDH-5/3E-D-2-M12D-C |
| | Normally open, mechanical spring return | 2-pin to VDMA | Internal | 1000 | 533006 | MDH-5/3B-D-2-M12-C |
| | | 4-pin to Desina | Internal | 1000 | 540816 | MDH-5/3B-D-2-M12D-C |

Datasheet – Width 65 mm

-  - Flow rate
Up to 4500 l/min

-  - Voltage
24 V DC



General technical data

| | |
|----------------------|---|
| Design | Piston spool |
| Sealing principle | Soft |
| Actuation type | Electrical |
| Type of control | Piloted |
| Flow direction | Not reversible |
| Exhaust air function | Can be throttled |
| Manual override | Non-detenting |
| Type of mounting | On sub-base with through-hole and screw |
| Mounting position | Any |
| Nominal width [mm] | 14.5 |
| Overlap | Positive overlap |
| Width [mm] | 65 |
| Grid dimension [mm] | 71 |
| Pneumatic ports | Sub-base size 3 to ISO 5599-1 |
| Noise level [dB (A)] | 85 |
| Conforms to standard | ISO 5599-1 |

Flow rates

| | | | | |
|------------------------------------|---------------|-----------------|--------------------|---------------|
| Valve function | 5/2-way valve | 5/3-way valve | | |
| | | Normally closed | Normally exhausted | Normally open |
| Standard nominal flow rate [l/min] | 4500 | 4100 | 4600 | 4000 |

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|--------------------------------|--------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, single solenoid | MDH-5/2-... | 54 | 57 | – | – |
| | MDH-5/2-...-FR-... | 28 | 68 | – | – |
| 5/2-way valve, double solenoid | JMDH-... | – | – | 21 | – |
| | JMDDH-... | – | – | 23 | 23 |
| 5/3-way valve | MDH-5/3G-... | 35 | 79 | – | – |
| | MDH-5/3E-... | 36 | 84 | – | – |
| | MDH-5/3B-... | 36 | 84 | – | – |

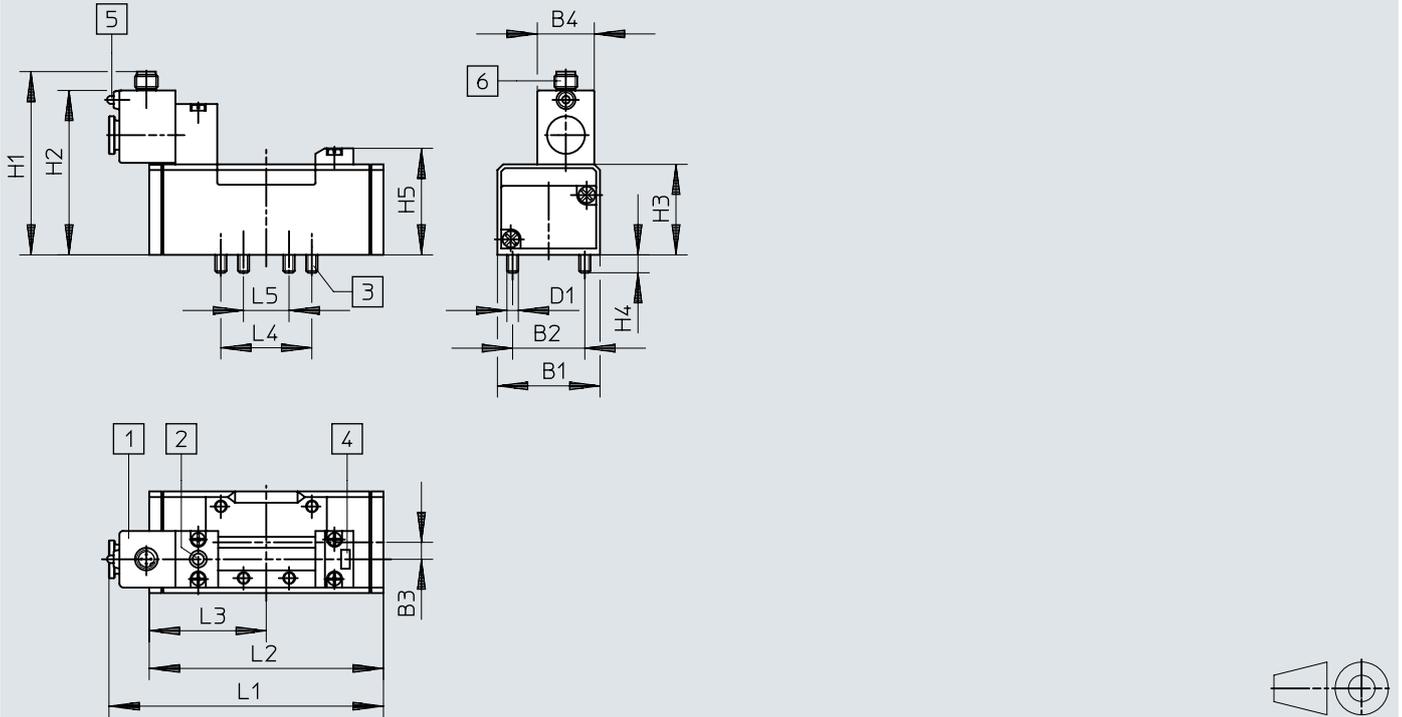
Datasheet – Width 65 mm

| Operating and environmental conditions | | | |
|---|---------|--|-------------------|
| Reset method | | Pneumatic spring | Mechanical spring |
| 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 | [bar] | 2 ... 10 | 3 ... 10 |
| Ambient temperature | [°C] | -10 ... +50 | |
| Temperature of medium | [°C] | -10 ... +50 | |
| Safety characteristics | | | |
| Max. positive test pulse with 0 signal | [µs] | 3800 | |
| Max. negative test pulse with 1 signal | [µs] | 4900 | |
| Shock resistance | | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | |
| Vibration resistant | | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | |
| Electrical data | | | |
| Electrical connection | | M12x1 | |
| Coil characteristics | Voltage | [V DC] | 24 |
| | Power | [W] | 2.7 |
| Permissible voltage fluctuations | | [%] | ±10 |
| Duty cycle | | [%] | 100 |
| Degree of protection to EN 60529 | | | IP65 |
| Materials | | | |
| Housing | | Die-cast aluminium | |
| Seals | | HNBR, NBR | |
| Note on materials | | RoHS-compliant | |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L | |

Datasheet – Width 65 mm

Dimensions – 5/2-way valves, single solenoid

Download CAD data → www.festo.com



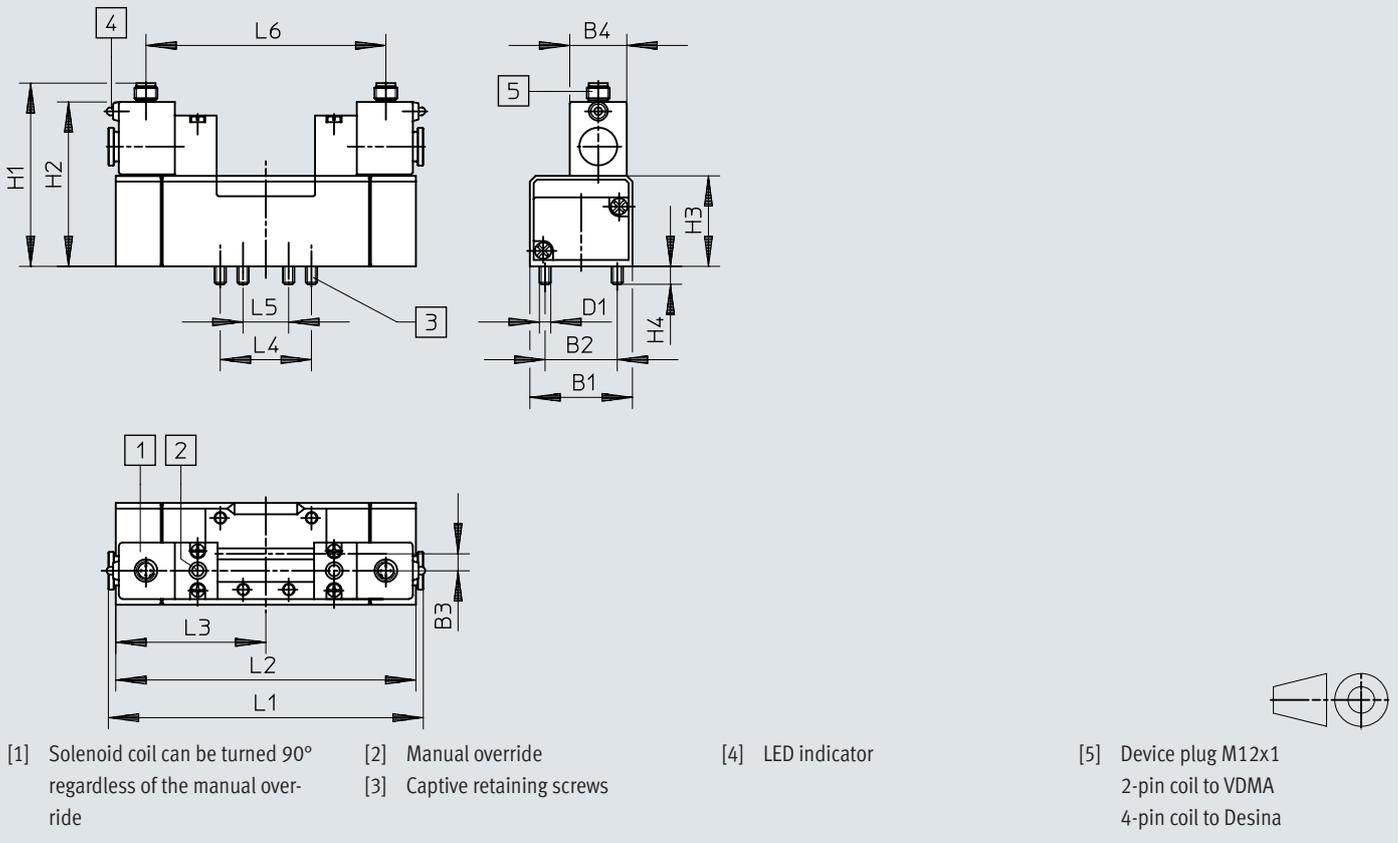
- [1] Solenoid coil can be turned 90° regardless of the manual override
- [2] Manual override
- [3] Captive retaining screws
- [4] Slot for inscription label
- [5] LED indicator
- [6] Device plug M12x1
2-pin coil to VDMA
4-pin coil to Desina

| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------------------|----|----|----|----|----|-------|------|----|----|------|-------|-------|------|----|----|----|
| MDH-5/2 ... | 65 | 48 | 12 | 30 | M8 | 104.2 | 94.2 | 55 | 12 | 62.5 | 165.9 | 145.4 | 72.7 | 64 | 32 | - |
| MDH-5/2- ... -FR-... | | | | | | | | | | | 182.5 | 140.6 | | | | |

Datasheet – Width 65 mm

Dimensions - 5/2-way valves, double solenoid, 5/3-way valves

Download CAD data → www.festo.com

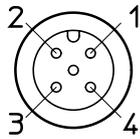


| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------------|----|----|----|----|----|-------|------|----|----|----|-------|-------|------|----|----|-------|
| JMDH-5/2- ... | 65 | 48 | 12 | 30 | M8 | 104.2 | 94.2 | 55 | 12 | - | 186.4 | 145.4 | 72.7 | 64 | 32 | 146.9 |
| JMDDH-5/2- ... | | | | | | | | | | | | 145.4 | 72.7 | | | |
| MDH-5/3... | | | | | | | | | | | | 184 | 92 | | | |

Ordering data – Width 65 mm

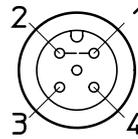
Terminal assignment

M12 plug – 2-pin to VDMA



- 1 Not assigned
- 2 Not assigned
- 3 com (-)
- 4 Signal (+)

M12 plug – 4-pin to Desina



- 1 Connected to 2
- 2-Connected to 1
- 3 com (-)
- 4 Signal (+)

Ordering data

| Circuit symbol | Description | Coil | Pilot air supply | Weight [g] | Part no. | Type |
|---------------------------------------|--|-----------------|------------------|------------|---------------|------------------------------|
| 5/2-way valve, single solenoid | | | | | | |
| | Pneumatic spring return | 2-pin to VDMA | Internal | 1000 | 533009 | MDH-5/2-D-3-M12-C |
| | | 4-pin to Desina | Internal | 1000 | 540819 | MDH-5/2-D-3-M12D-C |
| | Mechanical spring return | 2-pin to VDMA | Internal | 1000 | 533012 | MDH-5/2-D-3-FR-M12-C |
| | | 4-pin to Desina | Internal | 1000 | 540820 | MDH-5/2-D-3-FR-M12D-C |
| 5/2-way valve, double solenoid | | | | | | |
| | – | 2-pin to VDMA | Internal | 1100 | 533015 | JMDH-5/2-D-3-M12-C |
| | | 4-pin to Desina | Internal | 1100 | 540825 | JMDH-5/2-D-3-M12D-C |
| | With dominant signal at 14 | 2-pin to VDMA | Internal | 1100 | 539081 | JMDH-5/2-D-3-M12-C |
| | | 4-pin to Desina | Internal | 1100 | 540824 | JMDH-5/2-D-3-M12D-C |
| 5/3-way valve | | | | | | |
| | Normally closed, mechanical spring return | 2-pin to VDMA | Internal | 1120 | 539080 | MDH-5/3G-D-3-M12-C |
| | | 4-pin to Desina | Internal | 1120 | 540822 | MDH-5/3G-D-3-M12D-C |
| | Normally exhausted, mechanical spring return | 2-pin to VDMA | Internal | 1120 | 533017 | MDH-5/3E-D-3-M12-C |
| | | 4-pin to Desina | Internal | 1120 | 540821 | MDH-5/3E-D-3-M12D-C |
| | Normally open, mechanical spring return | 2-pin to VDMA | Internal | 1120 | 533007 | MDH-5/3B-D-3-M12-C |
| | | 4-pin to Desina | Internal | 1120 | 540823 | MDH-5/3B-D-3-M12D-C |

Datasheet – Width 76 mm

-  - Flow rate
Up to 6000 l/min

-  - Repair service

-  - Voltage
24 V DC
48 V AC



General technical data

| | |
|----------------------|---|
| Design | Piston spool |
| Sealing principle | Soft |
| Actuation type | Electrical |
| Type of control | Piloted |
| Flow direction | Not reversible |
| Exhaust air function | Can be throttled |
| Manual override | Non-detenting |
| Type of mounting | On sub-base with through-hole and screw |
| Mounting position | Any |
| Nominal width [mm] | 18 |
| Overlap | Positive overlap |
| Width [mm] | 76 |
| Grid dimension [mm] | 82 |
| Pneumatic ports | Sub-base size 4 to ISO 5599-1 |
| Noise level [dB (A)] | 85 |
| Conforms to standard | ISO 5599-1 |

Flow rates

| | | |
|------------------------------------|---------------|---------------|
| Valve function | 5/2-way valve | 5/3-way valve |
| Standard nominal flow rate [l/min] | 6000 | 4800 |

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover |
|---------------|-----------------|-------------------|--------------------|---------------------------|
| 5/2-way valve | Single solenoid | 120 | 160 | – |
| | Double solenoid | – | – | 40 |
| 5/3-way valve | | 85 | 290 | – |

Datasheet – Width 76 mm

| Operating and environmental conditions | | |
|--|--------------------------------|--|
| Valve function | | MDH-...-D-4-24DC, JMDH-...-D-4-24DC MDH-...-D-4, JMDH-...-D-4 |
| 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 | 5/2-way valve, single solenoid | [bar] 3 ... 16 |
| | 5/2-way valve, double solenoid | [bar] 2 ... 16 |
| | 5/3-way valve | [bar] 3 ... 16 |
| Ambient temperature | [°C] | -10 ... +50 |
| Temperature of medium | [°C] | -10 ... +60 |
| CE marking (see declaration of conformity) ¹⁾ | | To EU Low Voltage Directive – |
| UKCA marking (see declaration of conformity) ¹⁾ | | To UK regulations for electrical equipment – |

1) More information www.festo.com/catalogue/... → Support/Downloads.

| Safety characteristics | | |
|--|------|---|
| Type | | MDH-...-D-4-24DC, JMDH-...-D-4-24DC MDH-...-D-4, JMDH-...-D-4 |
| Max. positive test pulse with 0 signal | [µs] | 4300 – |
| Max. negative test pulse with 1 signal | [µs] | 2100 – |

| Electrical data – MDH-...-24DC, JMDH-...-24DC | | | DC voltage | | Alternating voltage | |
|---|---------------|--------|----------------------|--|---------------------|--|
| Electrical connection | | | To DIN EN 175301-803 | | | |
| Coil characteristics | Voltage | [V DC] | 24 | | – | |
| | | [V AC] | – | | 48 | |
| | Frequency | [Hz] | – | | 5 0/60 | |
| | Power | [W] | 6.8 | | – | |
| | Pickup power | [VA] | – | | 14.5 | |
| | Holding power | [VA] | – | | 9.9 | |
| Duty cycle | [%] | 100 | | | | |
| Degree of protection to EN 60529 | | IP65 | | | | |

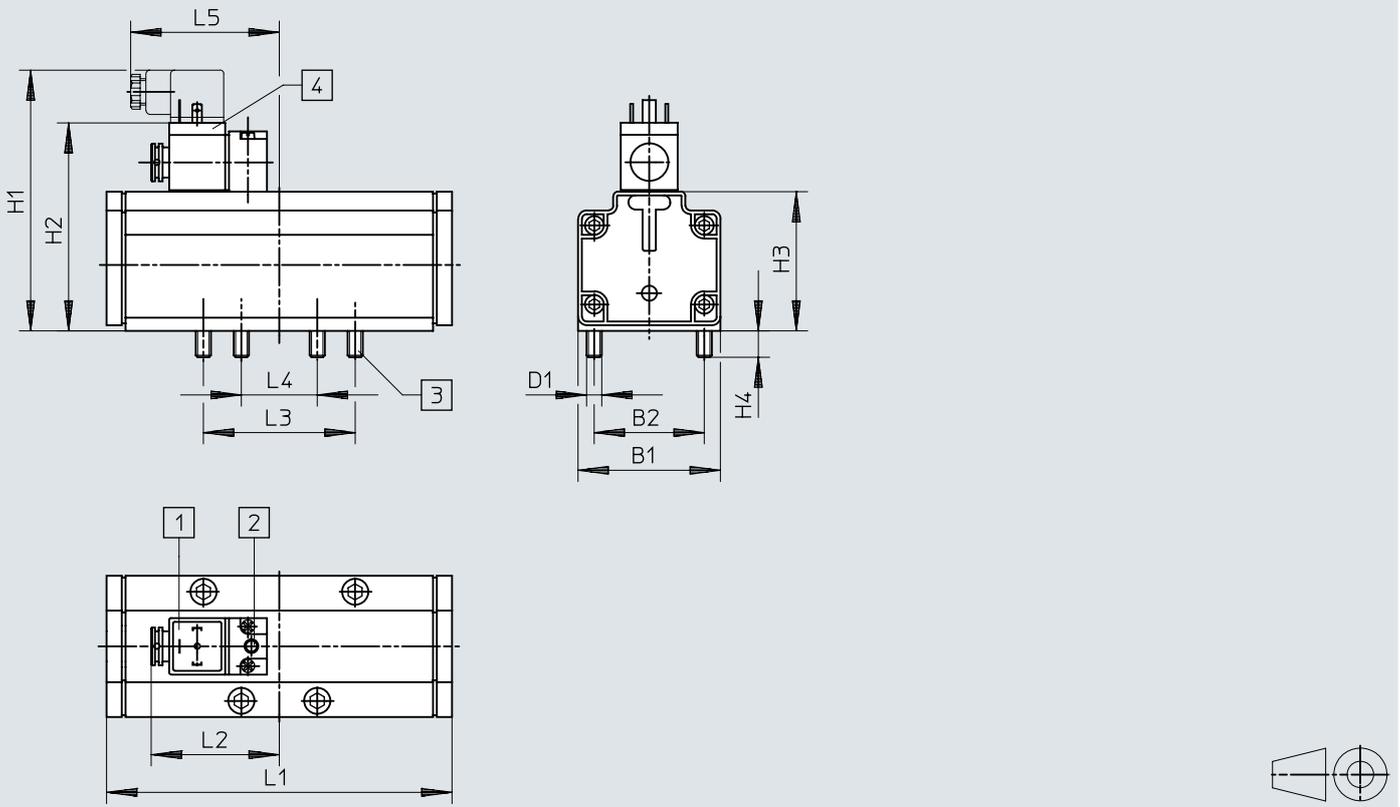
| Electrical data – Pilot valve MDH-3/2-... | | | | | | | | | | | | | |
|---|---------------|--------|--|------|-------------------|-----|-----|---------------|------|---------------|-----|------|-----|
| Type | | | MDH-3/2-24DC | | MDH-3/2-24DC/42AC | | | MDH-3/2-110AC | | MDH-3/2-230AC | | | |
| Electrical connection | | | Plug, square design to EN 175301-803, type A | | | | | | | | | | |
| Coil characteristics | Voltage | [V DC] | 24 | – | – | 24 | – | – | – | – | 110 | – | – |
| | | [V AC] | – | 48 | 53 | – | 42 | 42 | 110 | 110 | – | 230 | 230 |
| | Frequency | [Hz] | – | 50 | 60 | – | 50 | 60 | 50 | 60 | – | 50 | 60 |
| | Power | [W] | 6.8 | – | – | 8.4 | – | – | – | – | 6.3 | – | – |
| | Pickup power | [VA] | – | 14.5 | 15 | – | 14 | 12 | 14.5 | 12 | – | 14.5 | 12 |
| | Holding power | [VA] | – | 9.9 | 9.3 | – | 10 | 7 | 10.5 | 7.6 | – | 10.5 | 7.6 |
| Permissible voltage fluctuations | [%] | ±10 | ±10 | ±10 | ±10 | ±10 | ±10 | ±10 | ±10 | ±10 | ±10 | ±10 | |
| Permissible frequency fluctuations | [%] | – | – | – | ±10 | ±10 | ±10 | ±10 | ±10 | ±10 | ±10 | ±10 | |
| Duty cycle | [%] | 100 | | | | | | | | | | | |
| Degree of protection to EN 60529 | | IP65 | | | | | | | | | | | |

| Materials | |
|------------------------|-------------------|
| Housing | Aluminium |
| Seals | NBR |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Datasheet – Width 76 mm

Dimensions – 5/2-way valves, single solenoid

Download CAD data → www.festo.com



[1] Connection for plug socket with plug pattern to EN 175301-803, type A → page <?>

[2] Manual override
[3] Captive retaining screws

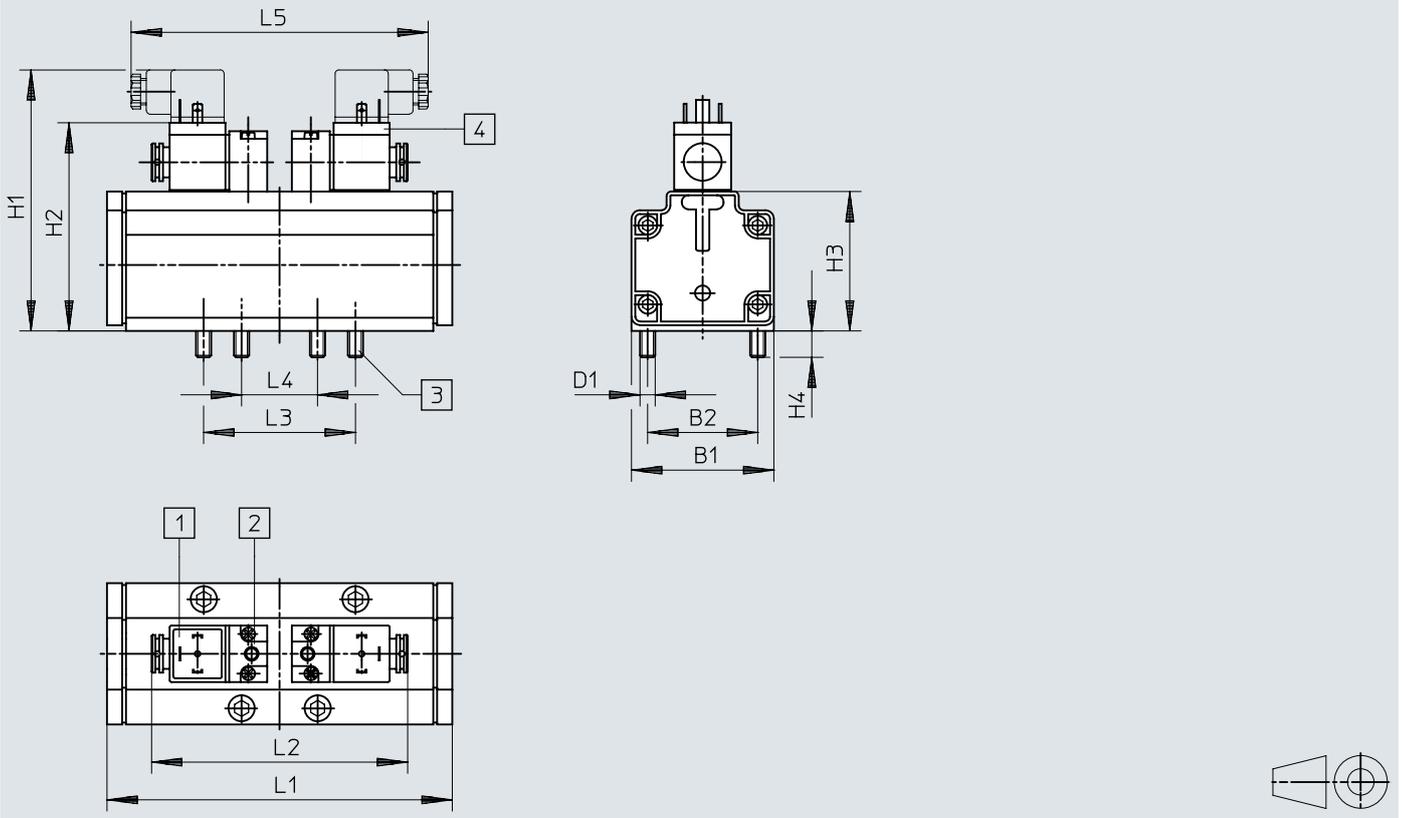
[4] Solenoid coil can be turned 90° regardless of the manual override

| Type | B1 | B2 | D1 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 |
|-------------|----|----|----|-----|-------|----|----|-----|------|----|----|----|
| MDH-5/2 ... | 76 | 58 | M8 | 139 | 110.5 | 74 | 14 | 182 | 67.5 | 80 | 40 | 81 |

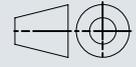
Datasheet – Width 76 mm

Dimensions - 5/2-way valves, double solenoid, 5/3-way valves

Download CAD data → www.festo.com

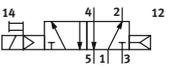
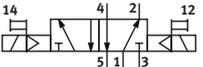
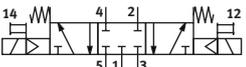
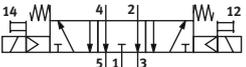


- [1] Connection for plug socket with plug pattern to EN 175301-803, type A → page <?>
- [2] Manual override
- [3] Captive retaining screws
- [4] Solenoid coil can be turned 90° regardless of the manual override



| Type | B1 | B2 | D1 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 |
|---------------|----|----|----|-----|-------|----|----|-----|-----|----|----|-----|
| JMDH-5/2- ... | 76 | 58 | M8 | 139 | 110.5 | 74 | 14 | 182 | 135 | 80 | 40 | 162 |
| MDH-5/3... | | | | | | | | | | | | |

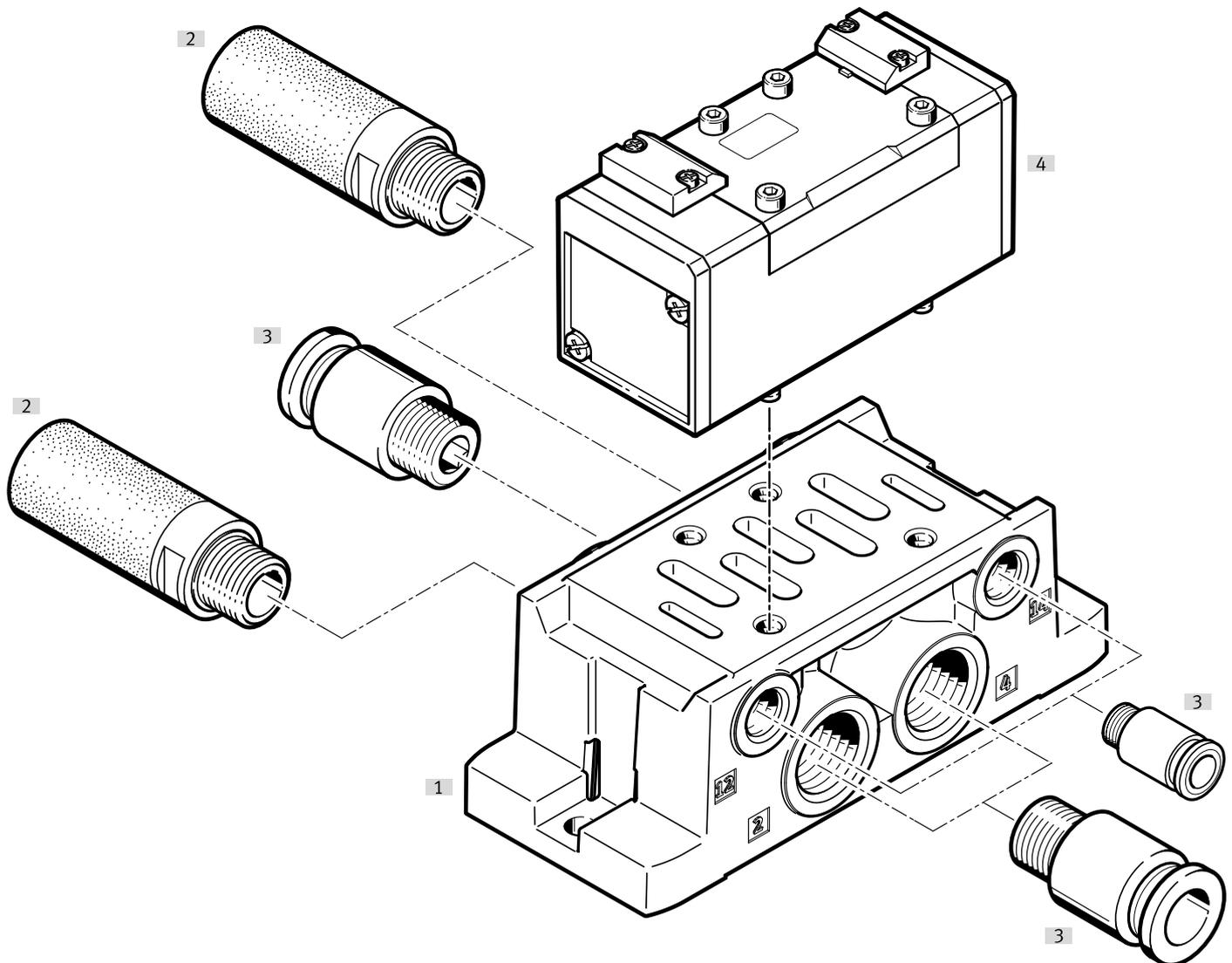
Ordering data – Width 76 mm

| Ordering data | Description | Voltage | Pilot air supply | Weight [g] | Part no. | Type |
|--|---|-----------------------|------------------|------------|---------------|--------------------------------------|
| 5/2-way valve, single solenoid | | | | | | |
|  | Pneumatic spring return | 24 V DC | Internal | 2600 | 12457 | MDH-5/2-3/4-D-4-24DC |
| | | – | Internal | 2600 | 14544 | MDH-5/2-3/4-D-4¹⁾ |
| 5/2-way valve, double solenoid | | | | | | |
|  | – | 24 V DC | Internal | 2600 | 12458 | JMDH-5/2-3/4-D-4-24DC |
| | | – | Internal | 2600 | 14545 | JMDH-5/2-3/4-D-4¹⁾ |
| 5/3-way valve | | | | | | |
|  | Normally closed, mechanical spring return | 24 V DC | Internal | 2600 | 12459 | MDH-5/3G-3/4-D-4-24DC |
| | | – | Internal | 2600 | 14546 | MDH-5/3G-3/4-D-4¹⁾ |
|  | Normally exhausted, mechanical spring return | 24 V DC | Internal | 2600 | 12460 | MDH-5/3E-3/4-D-4-24DC |
| | | – | Internal | 2600 | 14547 | MDH-5/3E-3/4-D-4¹⁾ |
| Usable pilot valves | | | | | | |
|  | Electrical connection to EN 175301-803 type A | 24 V DC | – | 140 | 119600 | MDH-3/2-24DC |
| | | 24 V DC/ 42 V AC | – | 140 | 119603 | MDH-3/2-24DC/42AC |
| | | 110 V AC | – | 140 | 119601 | MDH-3/2-110AC |
| | | 110 V DC/ 230 V AC | – | 140 | 119602 | MDH-3/2-230AC |

1) Without pilot valve. The part number of the pilot valve must be added after the type code when ordering.
Order example: 14546 MDH-5/3G-3/4-D-4-119602 (for MDH-3/2-230AC with part no. 119602)

Peripherals overview

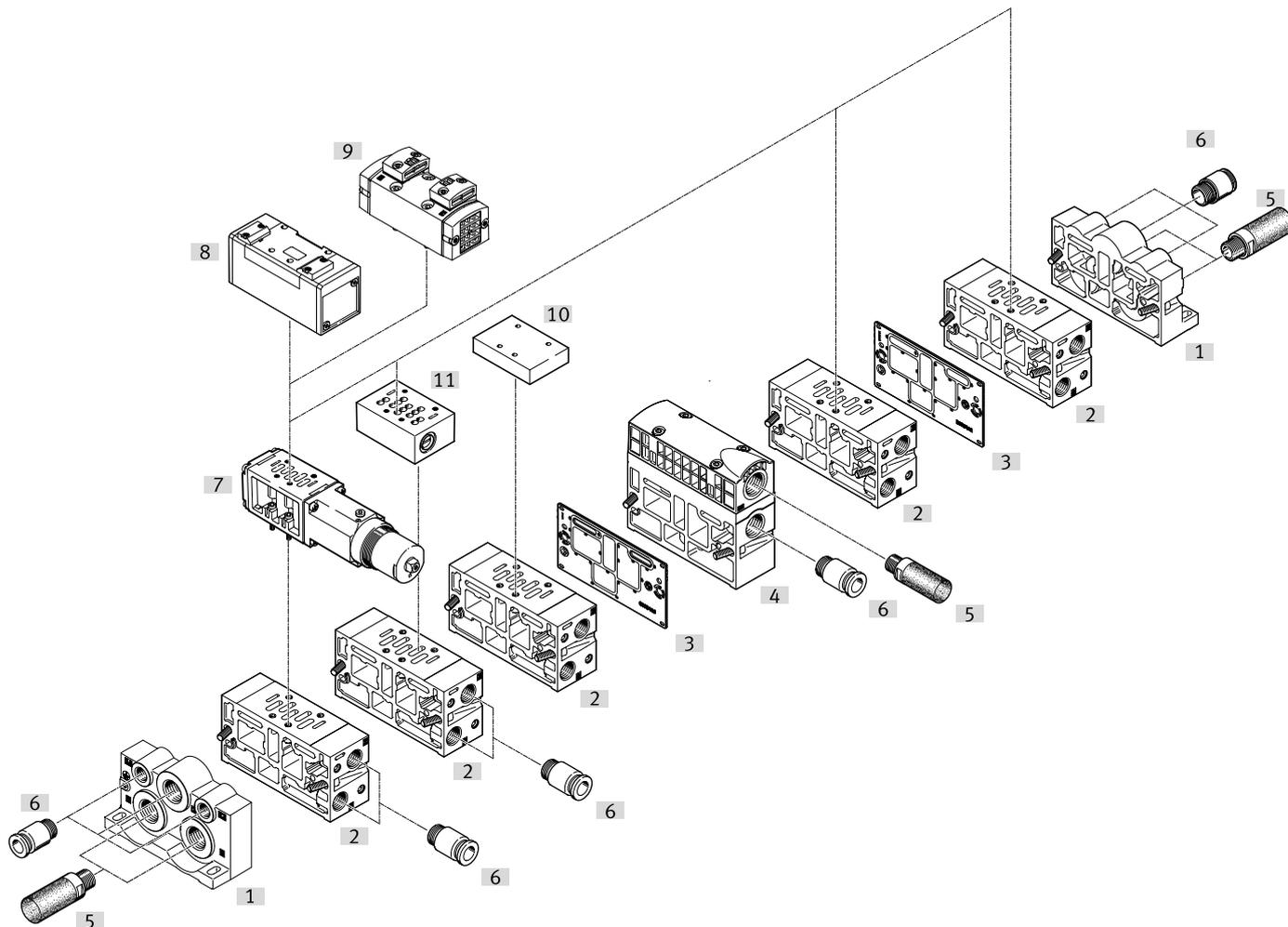
Valve on individual sub-base



| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|---------------------|-------------|--|-----------------|
| [1] | Sub-base | VABS-S1-... | Pneumatic ports on the side | 136 |
| | Individual sub-base | NAS-... | Pneumatic ports on the side | 136 |
| | | NAU-... | Pneumatic ports underneath | 139 |
| [2] | Silencer | U-... | For fitting in exhaust ports | silencer |
| [3] | Push-in fitting | QS-... | For connecting tubing with standard O.D. | qs |
| [4] | Pneumatic valve | VL-... | Hole pattern to ISO 5599-1 | 117 |
| | | J-... | Hole pattern to ISO 5599-1 | 117 |
| | | JD-... | Hole pattern to ISO 5599-1 | 117 |

Peripherals overview

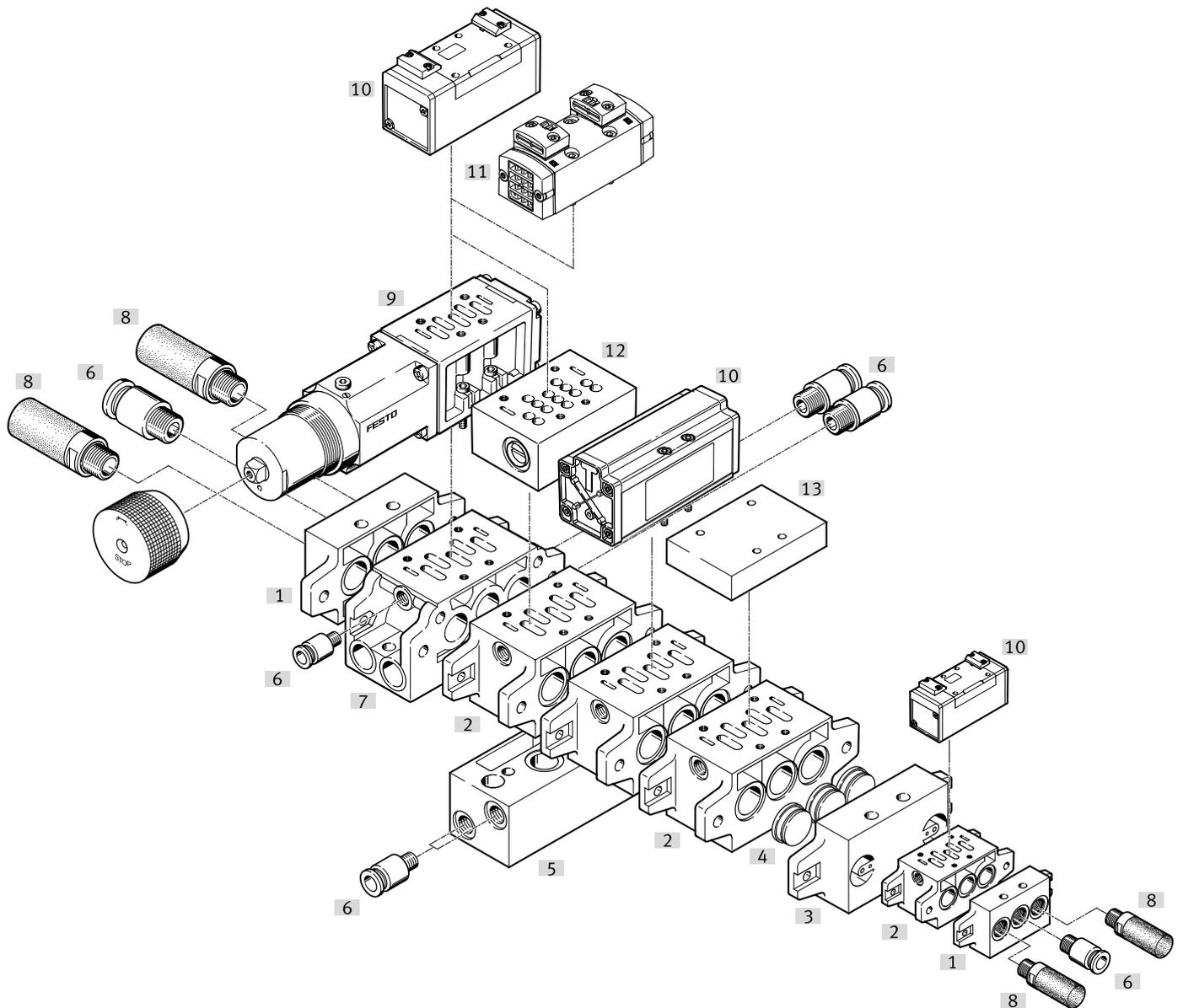
Manifold assembly



| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|-------------------|--------------------|---|-----------------|
| [1] | End plates | VABE-S1-... | For sealing the manifold sub-bases | 148 |
| [2] | Manifold sub-base | VABV-S1-... | With ports 2 and 4 | 141 |
| [3] | Duct separation | VABD-S1-1-... | For sealing ducts 1, 3, 5, 12 and 14 between end plate and manifold sub-base, e.g. to create pressure zones | 152 |
| [4] | Supply plate | VABF-S1-1-... | With ports for air supply 1 and exhausts 3 and 5 | 143 |
| [5] | Silencer | U-... | For fitting in exhaust ports | silencer |
| [6] | Push-in fitting | QS-... | For connecting tubing with standard O.D. | qs |
| [7] | Regulator plate | VABF-S1-...-R-... | Pressure regulator for manually setting a particular pressure in the regulated port upstream or downstream of the valve | 164 |
| | | LR-ZP-... | Pressure regulator for manually setting a particular pressure in the regulated port upstream or downstream of the valve | 164 |
| [8] | Pneumatic valve | VL-... | Hole pattern to ISO 5599-1 | 117 |
| | | J-... | Hole pattern to ISO 5599-1 | 117 |
| | | JD-... | Hole pattern to ISO 5599-1 | 117 |
| [9] | | VSPA | Hole pattern to ISO 5599-1 | 117 |
| [10] | Cover plate | NDV-... | For sealing unused manifold sub-bases | 151 |
| [11] | Throttle plate | VABF-S1-...-F1B1-C | Restricts the flow of exhaust air in ducts 3 and 5 | 157 |
| | | GRO-ZP-... | Restricts the flow of exhaust air in ducts 3 and 5 | 157 |

Peripherals overview

Manifold assembly



Peripherals overview

| Individual components | | Type | Brief description | → Page/Internet |
|-----------------------|--------------------------|--------------------|---|-----------------|
| [1] | End plate kit | NEV-... | For sealing the manifold sub-bases | 147 |
| [2] | Manifold sub-base | NAV-... | With ports 2 and 4 underneath | 141 |
| [3] | Intermediate plate | NZV-... | For connecting manifold sub-bases of different sizes | 153 |
| [4] | Isolating disc | NSC-... | For sealing ducts 1, 3, 5 between end plate and manifold sub-base, e.g. to create pressure zones | 151 |
| [5] | Angled connection plate | NAW-... | For routing ports 2 and 4 to the front | 146 |
| [6] | Push-in fitting | QS-... | For connecting tubing with standard O.D. | qs |
| [7] | Angled manifold sub-base | NAWV-... | With ports 2 and 4 either underneath or at the front | 146 |
| [8] | Silencer | U-... | For fitting in exhaust ports | silencer |
| [9] | Regulator plate | VABF-S1-...-R... | Pressure regulator for manually setting a particular pressure in the regulated port upstream or downstream of the valve | 164 |
| | | LR-ZP-... | Pressure regulator for manually setting a particular pressure in the regulated port upstream or downstream of the valve | 164 |
| [10] | Pneumatic valve | VL-... | Hole pattern to ISO 5599-1 | 117 |
| | | J-... | Hole pattern to ISO 5599-1 | 117 |
| | | JD-... | Hole pattern to ISO 5599-1 | 117 |
| [11] | | VSPA | Hole pattern to ISO 5599-1 | 117 |
| [12] | Throttle plate | VABF-S1-...-F1B1-C | Restricts the flow of exhaust air in ducts 3 and 5 | 157 |
| | | GRO-ZP-... | Restricts the flow of exhaust air in ducts 3 and 5 | 157 |
| [13] | Cover plate | NDV-... | For sealing unused manifold sub-bases | 151 |

Datasheet – Width 42 mm

-  - Flow rate
1200 l/min
1400 ... 1800 l/min



| General technical data | | VL- ... -C, J ... -C | VL- ... -EX, J ... -EX | VSPA |
|---|----------|-------------------------------|---------------------------------|--------------------------------------|
| Type | | | | |
| Design | | Piston spool | Piston spool | Piston spool |
| Sealing principle | | Soft | Soft | Soft |
| Actuation type | | Pneumatic | Pneumatic | Pneumatic |
| Type of control | | Direct | Direct | Direct |
| Pilot air supply | | – | – | External |
| Flow direction | | Reversible | Reversible | Reversible |
| | | VL-5/2-D-1-C: non-reversible | VL-5/2-D-1-C-EX: non-reversible | 3/2-way valves: not reversible |
| Exhaust air function | | Can be throttled | Can be throttled | Via individual sub-base |
| Suitable for vacuum | | – | – | Yes Pneumatic spring return: none |
| Manual override | | None | None | – |
| Type of mounting | | On sub-base with through-hole | On sub-base with through-hole | On sub-base |
| Mounting position | | Any | Any | Any |
| Max. tightening torque for valve mounting | [Nm] | – | – | 1 |
| Nominal width | [mm] | 8 | 8 | 8 |
| Overlap | | Positive overlap | Positive overlap | Positive overlap |
| Width | [mm] | 42 | 42 | 42 |
| Grid dimension | [mm] | 43 | 43 | – |
| Pneumatic ports | | Sub-base size 1 to ISO 5599-1 | Sub-base size 1 to ISO 5599-1 | Sub-base size 1 to ISO 5599-1 |
| Noise level | [dB (A)] | 85 | 85 | 85 |
| Conforms to standard | | ISO 5599-1 | ISO 5599-1 | – |

| Flow rates | | Standard nominal flow rate (standardised to DIN 1343) [l/min] | Nominal flow rate standardised according to ISO 8778 [l/min] | Flow rate of valve [l/min] | Flow rate of valve on individual sub-base [l/min] | b value | C value [l/sbar] |
|-------------|---|---|--|----------------------------|---|---------|------------------|
| VL- ... -C | | 1200 | – | – | – | – | – |
| J ... -C | | 1200 | – | – | – | – | – |
| VL- ... -EX | | 1200 | – | – | – | – | – |
| J ... -EX | | 1200 | – | – | – | – | – |
| VSPA | 2x 3/2-way valve, normally closed | – | 1400 | 1300 | 1100 | 0.18 | 5293 |
| | 2x 3/2-way valve, normally open | – | 1400 | 1300 | 1100 | 0.21 | 5511 |
| | 2x3/2-way valve, normally open/closed | – | 1400 | 1300 | 1100 | 0.2 | 5479 |
| | 5/2-way valve, monostable, pneumatic spring | – | 1800 | 1700 | 1400 | 1.6 | 7706 |
| | 5/2-way valve, monostable, mechanical spring | – | 1800 | 1700 | 1400 | 1.7 | 7718 |
| | 5/2-way valve, bistable | – | 1800 | 1700 | 1400 | 1.6 | 7697 |
| | 5/2-way valve, bistable, with dominant signal | – | 1800 | 1700 | 1400 | 1.5 | 7663 |
| | 5/3-way valve, normally closed | – | 1800 | 1600 | 1400 | 0.14 | 7482 |
| | 5/3-way valve, normally exhausted | – | 1800 | 1600 | 1400 | 0.24 | 7141 |
| | 5/3-way valve, normally pressurised | – | 1600 | 1500 | 1300 | 0.14 | 6799 |

Datasheet – Width 42 mm

| Switching times [ms] | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|---------------------------|--------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 2x3/2-way valve | VSPA | – | – | – | – |
| 5/2-way valve, monostable | VL-5/2-D-1-C | 9 | 18 | – | – |
| | VL-5/2-D-1-C-EX | 9 | 18 | – | – |
| | VL-5/2-D-1-FR-C | 6 | 23 | – | – |
| | VL-5/2-D-1-FR-C-EX | 6 | 23 | – | – |
| | VSPA | – | – | – | – |
| 5/2-way valve, bistable | J-5/2-D-1-C | – | – | 6 | – |
| | J-5/2-D-1-C-EX | – | – | 6 | – |
| | JD-5/2-D-1-C | – | – | 6 | 4 |
| | JD-5/2-D-1-C-EX | – | – | 6 | 4 |
| | VSPA | – | – | – | – |
| 5/3-way valve | VL-5/3G-D-1-C | 7 | 44 | – | – |
| | VL-5/3G-D-1-C-EX | 7 | 44 | – | – |
| | VL-5/3E-D-1-C | 7 | 45 | – | – |
| | VL-5/3E-D-1-C-EX | 7 | 45 | – | – |
| | VL-5/3B-D-1-C | 7 | 44 | – | – |
| | VL-5/3B-D-1-C-EX | 7 | 44 | – | – |
| | VSPA | – | – | – | – |

| ATEX | |
|--|---|
| Type | VL- ... -EX, J ... -EX |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T4 Gb |
| ATEX category for dust | II 2D |
| Type of ignition protection for dust | Ex h IIIC T130°C Db |
| Explosion-proof ambient temperature [°C] | -10 ≤ Ta ≤ +60 |
| Explosion protection certification outside EU | EPL Db (GB) |
| | EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) 1) | To UK explosion regulations |

1) More information www.festo.com/catalogue/... → Support/Downloads.

| Safety characteristics | | | |
|------------------------|--|--|--|
| Type | VL- ... -C, J ... -C | VL- ... -EX, J ... -EX | VSPA |
| Shock resistance | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | | |
| Vibration resistant | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6 |

| Materials | | | |
|------------------------|----------------------|------------------------|--------------------|
| Type | VL- ... -C, J ... -C | VL- ... -EX, J ... -EX | VSPA |
| Housing | Die-cast aluminium | Die-cast aluminium | Die-cast aluminium |
| Seals | HNBR, NBR | HNBR, NBR | NBR |
| Screws | – | – | Galvanised steel |
| Note on materials | RoHS-compliant | RoHS-compliant | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L | VDMA24364-B1/B2-L | VDMA24364-B1/B2-L |

Datasheet – Width 42 mm

| Operating and ambient conditions – 2x3/2-way valves | | VSPA | |
|---|-------|--|--|
| Type | | | |
| 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 ... +1 | |
| | [bar] | -0.9 ... +10 | |
| Pilot pressure | [MPa] | 0.3 ... 1.6 | |
| | [bar] | 3 ... 16 | |
| Ambient temperature | [°C] | - | |
| Temperature of medium | [°C] | -10 ... +60 | |
| Corrosion resistance class CRC ¹⁾ | | 0 - no corrosion stress | |

1) More information www.festo.com/x/topic/crc

| Operating and ambient conditions – 5/2-way valves, monostable | | | | | |
|---|-------|--|-------------------------|--------------------------|-------------------------|
| Type | | VL | | VSPA | |
| | | Mechanical spring return | Pneumatic spring return | Mechanical spring return | Pneumatic spring return |
| 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 ... +1.6 | 0.2 ... 1.6 | -0.09 ... +1.6 | 0.3 ... 1.6 |
| | [bar] | -0.9 ... +16 | 2 ... 16 | -0.9 ... +16 | 3 ... 16 |
| Pilot pressure | [MPa] | - | - | 0.3 ... 1.6 | |
| | [bar] | 3 ... 16 | 2 ... 16 | 3 ... 16 | |
| Ambient temperature | [°C] | -10 ... +60 | | - | |
| Temperature of medium | [°C] | -10 ... +60 | | -10 ... +60 | |
| Corrosion resistance class CRC ¹⁾ | | - | | 0 - no corrosion stress | |

1) More information www.festo.com/x/topic/crc

| Operating and ambient conditions – 5/2-way valves, bistable | | | VSPA | |
|---|-------|--|------|-------------------------|
| Type | | J | | |
| 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 ... +1.6 | | -0.09 ... +1.6 |
| | [bar] | -0.9 ... +16 | | -0.9 ... +16 |
| Pilot pressure | [MPa] | - | | 0.3 ... 1.6 |
| | [bar] | 2 ... 16 | | 3 ... 16 |
| Ambient temperature | [°C] | -10 ... +60 | | - |
| Temperature of medium | [°C] | -10 ... +60 | | -10 ... +60 |
| Corrosion resistance class CRC ¹⁾ | | - | | 0 - no corrosion stress |

1) More information www.festo.com/x/topic/crc

| Operating and ambient conditions – 5/3-way valves | | | VSPA | |
|---|-------|--|------|-------------------------|
| Type | | VL | | |
| 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 ... +1.6 | | -0.09 ... +1.6 |
| | [bar] | -0.9 ... +16 | | -0.9 ... +16 |
| Pilot pressure | [MPa] | - | | 0.3 ... 1.6 |
| | [bar] | 3 ... 16 | | 3 ... 16 |
| Ambient temperature | [°C] | -10 ... +60 | | - |
| Temperature of medium | [°C] | -10 ... +60 | | -10 ... +60 |
| Corrosion resistance class CRC ¹⁾ | | - | | 0 - no corrosion stress |

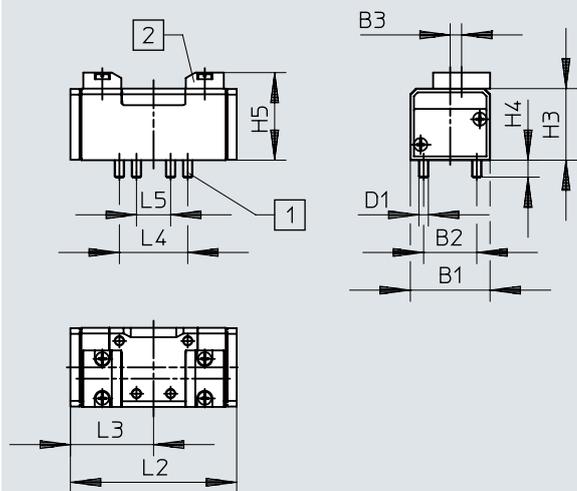
1) More information www.festo.com/x/topic/crc

Datasheet – Width 42 mm

Dimensions

Download CAD data → www.festo.com

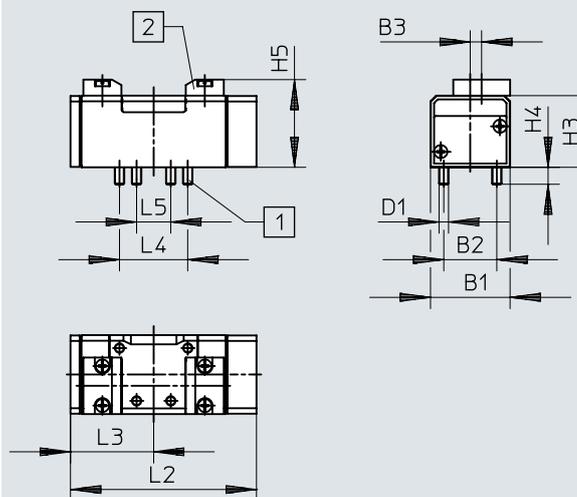
5/2-way valves, pneumatic spring return, 5/2-way valves, bistable



[1] Captive retaining screws [2] Slot for inscription label

| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|-------------|----|----|----|----|----|----|------|------|------|----|----|
| VL-5/2- ... | 42 | 28 | 6 | M5 | 38 | 9 | 46.5 | 87.6 | 43.8 | 36 | 18 |
| J-5/2- ... | | | | | | | | | | | |
| JD-5/2- ... | | | | | | | | | | | |

5/2-way valves, mechanical spring return



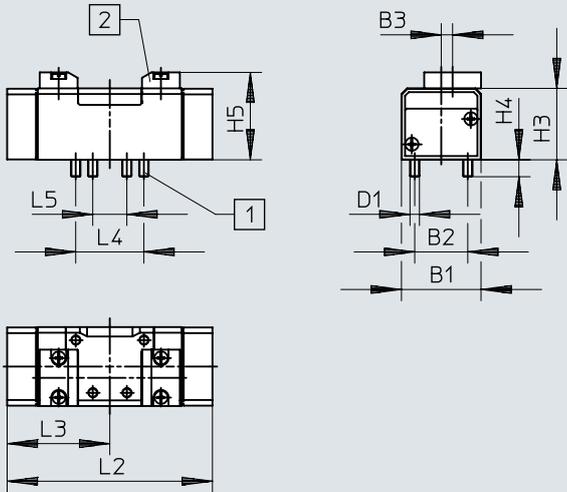
[1] Captive retaining screws [2] Slot for inscription label

| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|----------------------|----|----|----|----|----|----|------|----|------|----|----|
| VL-5/2- ... -FR- ... | 42 | 28 | 6 | M5 | 38 | 9 | 46.5 | 98 | 43.8 | 36 | 18 |

Datasheet – Width 42 mm

Dimensions – 5/3-way valves

Download CAD data → www.festo.com

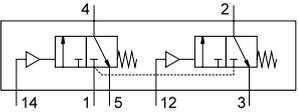
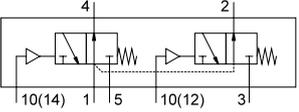
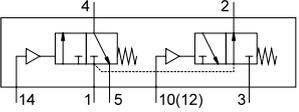
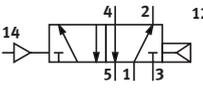
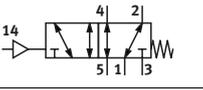
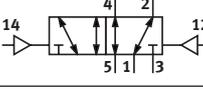
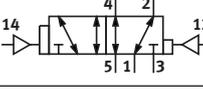
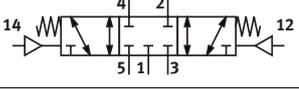
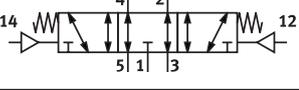
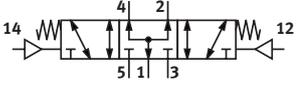


[1] Captive retaining screws

[2] Slot for inscription label

| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|-----------|----|----|----|----|----|----|------|-------|------|----|----|
| VL-5/3... | 42 | 28 | 6 | M5 | 38 | 9 | 46.5 | 108.4 | 54.2 | 36 | 18 |

Datasheet – Width 42 mm

| Ordering data Circuit symbol | Description | ISO code | Weight [g] | Part no. | Type | |
|--|--|--------------------------|---------------|----------------|-------------------------|----------------------|
| 2x3/2-way valve, monostable | | | | | | |
|  | Mechanical spring return Normally closed | – | 360 | 8033644 | VSPA-B-T32C-M-D1 | |
|  | Mechanical spring return Normally open | – | 360 | 8033645 | VSPA-B-T32U-M-D1 | |
|  | Mechanical spring return Normally open, normally closed | – | 360 | 8033646 | VSPA-B-T32H-M-D1 | |
| 5/2-way valve, monostable | | | | | | |
|  | Pneumatic spring return | – | 340 | 8033639 | VSPA-B-M52-A-D1 | |
| | | 102 | 290 | 151009 | VL-5/2-D-1-C | |
| | | ATEX category → page 118 | | 102 | 290 | 536007 |
|  | Mechanical spring return | – | 340 | 8033640 | VSPA-B-M52-M-D1 | |
| | | 104 | 290 | 151014 | VL-5/2-D-1-FR-C | |
| | | ATEX category → page 118 | | 104 | 290 | 536010 |
| 5/2-way valve, bistable | | | | | | |
|  | – | – | 330 | 8033637 | VSPA-B-B52-D1 | |
| | | 101 | 290 | 151007 | J-5/2-D-1-C | |
| | | ATEX category → page 118 | | 101 | 290 | 536013 |
|  | With dominant signal at 14 | – | 330 | 8033638 | VSPA-B-D52-D1 | |
| | | 103 | 290 | 151008 | JD-5/2-D-1-C | |
| | | ATEX category → page 118 | | 103 | 290 | 536016 |
| 5/3-way valve | | | | | | |
|  | Normally closed | – | 345 | 8033641 | VSPA-B-P53C-D1 | |
| | Normally closed | – | 106 | 320 | 151010 | VL-5/3G-D-1-C |
| | Mechanical spring return | ATEX category → page 118 | | 106 | 320 | 536019 |
|  | Normally exhausted | – | 345 | 8033642 | VSPA-B-P53E-D1 | |
| | Normally exhausted | – | 108 | 320 | 151011 | VL-5/3E-D-1-C |
| | Mechanical spring return | ATEX category → page 118 | | 108 | 320 | 536022 |
|  | Normally pressurised | – | 345 | 8033643 | VSPA-B-P53U-D1 | |
| | Normally pressurised | – | 107 | 320 | 151012 | VL-5/3B-D-1-C |
| | Mechanical spring return | ATEX category → page 118 | | 107 | 320 | 536025 |

Datasheet – Width 52 mm

-  - Flow rate
2300 l/min
1900 ... 4100 l/min



| General technical data | | | |
|--|---|---|--------------------------------|
| Type | VL- ... -C, J ... -C | VL- ... -EX, J ... -EX | VSPA |
| Design | Piston spool | Piston spool | Piston spool |
| Sealing principle | Soft | Soft | Soft |
| Actuation type | Pneumatic | Pneumatic | Pneumatic |
| Type of control | Direct | Direct | Direct |
| Pilot air supply | – | – | External |
| Flow direction | Reversible | Reversible | Reversible |
| | VL-5/2-D-2-C: non-reversible | VL-5/2-D-2-C-EX: non-reversible | 3/2-way valves: not reversible |
| Exhaust air function | Can be throttled | Can be throttled | Via individual sub-base |
| Suitable for vacuum | – | – | Yes |
| | | | Pneumatic spring return: none |
| Manual override | None | None | – |
| Type of mounting | On sub-base with through-hole and screw | On sub-base with through-hole and screw | On sub-base |
| Mounting position | Any | Any | Any |
| Max. tightening torque for valve mounting [Nm] | – | – | 2 |
| Nominal width [mm] | 11.5 | 11.5 | 11.5 |
| Overlap | Positive overlap | Positive overlap | Positive overlap |
| Width [mm] | 54 | 54 | 52 |
| Grid dimension [mm] | 56 | 56 | – |
| Pneumatic ports | Sub-base size 2 to ISO 5599-1 | Sub-base size 2 to ISO 5599-1 | Sub-base size 2 to ISO 5599-1 |
| Noise level [dB (A)] | 85 | 85 | 85 |
| Conforms to standard | ISO 5599-1 | ISO 5599-1 | – |

| Flow rates | | | | | | | |
|-------------|---|--|----------------------------|---|---------|------------------|------|
| | Standard nominal flow rate (standardised to DIN 1343) [l/min] | Nominal flow rate standardised according to ISO 8778 [l/min] | Flow rate of valve [l/min] | Flow rate of valve on individual sub-base [l/min] | b value | C value [l/sbar] | |
| VL- ... -C | 2300 | – | – | – | – | – | |
| J ... -C | 2300 | – | – | – | – | – | |
| VL- ... -EX | 2300 | – | – | – | – | – | |
| J ... -EX | 2300 | – | – | – | – | – | |
| VSPA | 2x 3/2-way valve, normally closed | – | 2100 | 1900 | 1700 | 0.569 | 3631 |
| | 2x 3/2-way valve, normally open | – | 2000 | 1800 | 1800 | 0.69 | 3167 |
| | 2x3/2-way valve, normally open/closed | – | 1900 | 1800 | 1800 | 0.65 | 3208 |
| | 5/2-way valve, monostable, pneumatic spring | – | 4100 | 3800 | 3100 | 0.31 | 8221 |
| | 5/2-way valve, monostable, mechanical spring | – | 4100 | 3800 | 3200 | 0.3 | 8167 |
| | 5/2-way valve, bistable | – | 4000 | 3700 | 3100 | 0.2 | 8577 |
| | 5/2-way valve, bistable, with dominant signal | – | 4000 | 3700 | 3100 | 0.26 | 8272 |
| | 5/3-way valve, normally closed | – | 3700 | 3500 | 2800 | 0.26 | 7695 |
| | 5/3-way valve, normally exhausted | – | 3600 | 3400 | 2700 | 0.23 | 7667 |
| | 5/3-way valve, normally pressurised | – | 3500 | 3300 | 2900 | 0.33 | 7069 |

Datasheet – Width 52 mm

| Switching times [ms] | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|---------------------------|--------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 2x3/2-way valve | VSPA | – | – | – | – |
| 5/2-way valve, monostable | VL-5/2-D-2-C | 23 | 39 | – | – |
| | VL-5/2-D-2-C-EX | 23 | 39 | – | – |
| | VL-5/2-D-2-FR-C | 11 | 39 | – | – |
| | VL-5/2-D-2-FR-C-EX | 11 | 39 | – | – |
| | VSPA | – | – | – | – |
| 5/2-way valve, bistable | J-5/2-D-2-C | – | – | 8 | – |
| | J-5/2-D-2-C-EX | – | – | 8 | – |
| | JD-5/2-D-2-C | – | – | 8 | 8 |
| | JD-5/2-D-2-C-EX | – | – | 8 | 8 |
| | VSPA | – | – | – | – |
| 5/3-way valve | VL-5/3G-D-2-C | 15 | 56 | – | – |
| | VL-5/3G-D-2-C-EX | 15 | 56 | – | – |
| | VL-5/3E-D-2-C | 16 | 59 | – | – |
| | VL-5/3E-D-2-C-EX | 16 | 59 | – | – |
| | VL-5/3B-D-2-C | 15 | 57 | – | – |
| | VL-5/3B-D-2-C-EX | 15 | 57 | – | – |
| | VSPA | – | – | – | – |

| ATEX | |
|--|---|
| Type | VL- ... -EX, J ... -EX |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T4 Gb |
| ATEX category for dust | II 2D |
| Type of ignition protection for dust | Ex h IIIC T130°C Db |
| Explosion-proof ambient temperature [°C] | -10 ≤ Ta ≤ +60 |
| Explosion protection certification outside EU | EPL Db (GB) |
| | EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) 1) | To UK explosion regulations |

1) More information www.festo.com/catalogue/... → Support/Downloads.

| Safety characteristics | | | |
|------------------------|--|--|--|
| Type | VL- ... -C, J ... -C | VL- ... -EX, J ... -EX | VSPA |
| Shock resistance | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 | | |
| Vibration resistant | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 | Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6 |

| Materials | | | |
|------------------------|----------------------|------------------------|--------------------|
| Type | VL- ... -C, J ... -C | VL- ... -EX, J ... -EX | VSPA |
| Housing | Die-cast aluminium | Die-cast aluminium | Die-cast aluminium |
| Seals | HNBR, NBR | HNBR, NBR | NBR |
| Screws | – | – | Galvanised steel |
| Note on materials | RoHS-compliant | RoHS-compliant | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L | VDMA24364-B1/B2-L | VDMA24364-B1/B2-L |

Datasheet – Width 52 mm

| Operating and ambient conditions – 2x3/2-way valves | | VSPA | |
|---|-------|--|--|
| Type | | | |
| 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 ... +1 | |
| | [bar] | -0.9 ... +10 | |
| Pilot pressure | [MPa] | 0.3 ... 1.6 | |
| | [bar] | 3 ... 16 | |
| Ambient temperature | [°C] | - | |
| Temperature of medium | [°C] | -10 ... +60 | |
| Corrosion resistance class CRC ¹⁾ | | 0 - no corrosion stress | |

1) More information www.festo.com/x/topic/crc

| Operating and ambient conditions – 5/2-way valves, monostable | | | | | |
|---|-------|--|-------------------------|--------------------------|-------------------------|
| Type | | VL | | VSPA | |
| | | Mechanical spring return | Pneumatic spring return | Mechanical spring return | Pneumatic spring return |
| 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 ... +1.6 | 0.2 ... 1.6 | -0.09 ... +1.6 | 0.3 ... 1.6 |
| | [bar] | -0.9 ... +16 | 2 ... 16 | -0.9 ... +16 | 3 ... 16 |
| Pilot pressure | [MPa] | - | - | 0.3 ... 1.6 | |
| | [bar] | 3 ... 16 | 2 ... 16 | 3 ... 16 | |
| Ambient temperature | [°C] | -10 ... +60 | | - | |
| Temperature of medium | [°C] | -10 ... +60 | | -10 ... +60 | |
| Corrosion resistance class CRC ¹⁾ | | - | | 0 - no corrosion stress | |

1) More information www.festo.com/x/topic/crc

| Operating and ambient conditions – 5/2-way valves, bistable | | | |
|---|-------|--|------|
| Type | | J | VSPA |
| 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 ... +1.6 | |
| | [bar] | -0.9 ... +16 | |
| Pilot pressure | [MPa] | - | |
| | [bar] | 2 ... 16 | |
| Ambient temperature | [°C] | -10 ... +60 | |
| Temperature of medium | [°C] | -10 ... +60 | |
| Corrosion resistance class CRC ¹⁾ | | - | |
| | | 0 - no corrosion stress | |

1) More information www.festo.com/x/topic/crc

| Operating and ambient conditions – 5/3-way valves | | | |
|---|-------|--|------|
| Type | | VL | VSPA |
| 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 ... +1.6 | |
| | [bar] | -0.9 ... +16 | |
| Pilot pressure | [MPa] | - | |
| | [bar] | 3 ... 16 | |
| Ambient temperature | [°C] | -10 ... +60 | |
| Temperature of medium | [°C] | -10 ... +60 | |
| Corrosion resistance class CRC ¹⁾ | | - | |
| | | 0 - no corrosion stress | |

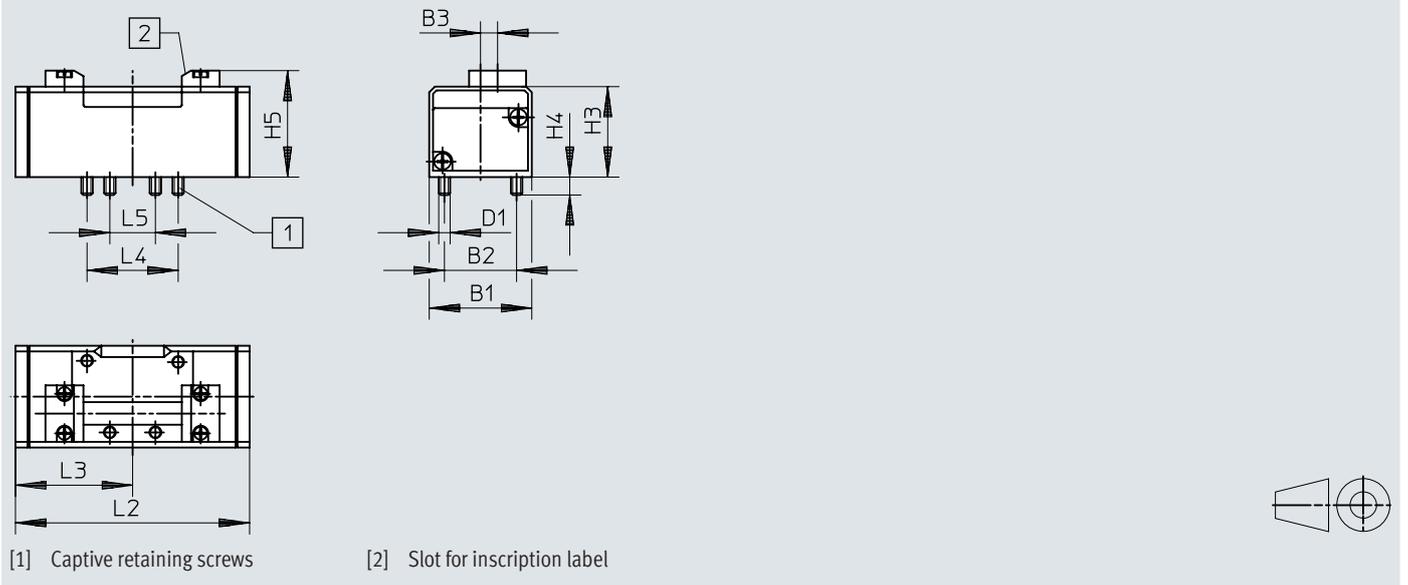
1) More information www.festo.com/x/topic/crc

Datasheet – Width 52 mm

Dimensions

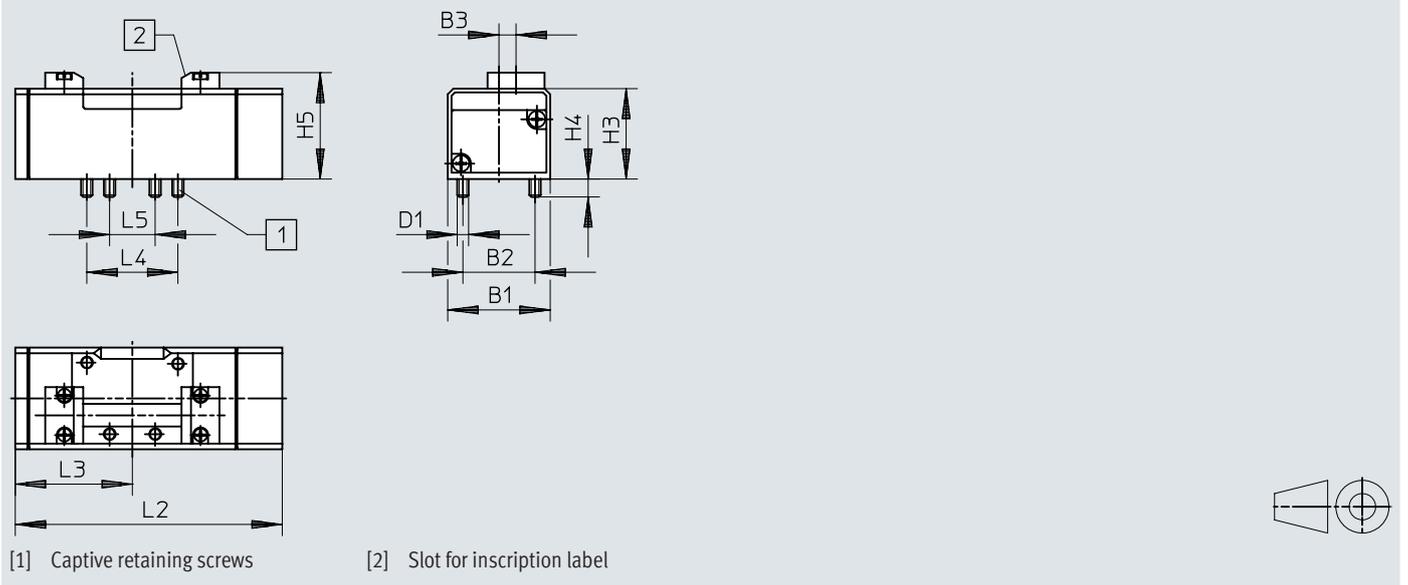
Download CAD data → www.festo.com

5/2-way valves, pneumatic spring return, 5/2-way valves, bistable



| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|-------------|----|----|----|----|----|-----|------|-------|------|----|----|
| VL-5/2- ... | 54 | 38 | 9 | M6 | 48 | 9.5 | 56.5 | 123.4 | 61.7 | 48 | 24 |
| J-5/2- ... | | | | | | | | | | | |
| JD-5/2- ... | | | | | | | | | | | |

5/2-way valves, mechanical spring return

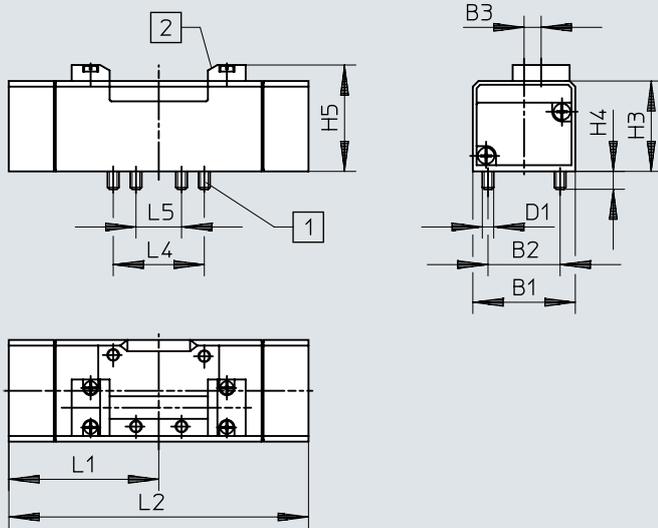


| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|----------------------|----|----|----|----|----|-----|------|-------|------|----|----|
| VL-5/2- ... -FR- ... | 54 | 38 | 9 | M6 | 48 | 9.5 | 56.5 | 140.7 | 61.7 | 48 | 24 |

Datasheet – Width 52 mm

Dimensions – 5/3-way valves

Download CAD data → www.festo.com

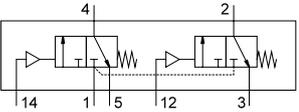
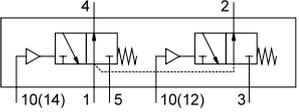
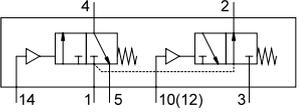
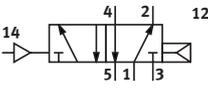
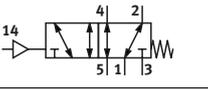
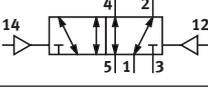
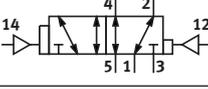
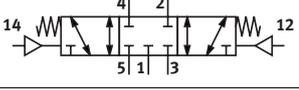
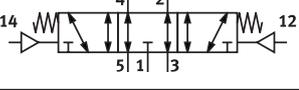
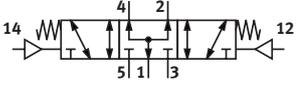


[1] Captive retaining screws

[2] Slot for inscription label

| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|-----------|----|----|----|----|----|-----|------|-----|----|----|----|
| VL-5/3... | 54 | 38 | 9 | M6 | 48 | 9.5 | 56.5 | 158 | 79 | 48 | 24 |

Datasheet – Width 52 mm

| Ordering data | Description | ISO code | Weight [g] | Part no. | Type |
|--|----------------------------|--------------------------------|------------|----------|----------------------------------|
| 2x3/2-way valve, monostable | | | | | |
|  | Mechanical spring return | Normally closed | – | 680 | 8033654 VSPA-B-T32C-M-D2 |
|  | Mechanical spring return | Normally open | – | 680 | 8033655 VSPA-B-T32U-M-D2 |
|  | Mechanical spring return | Normally open, normally closed | – | 680 | 8033656 VSPA-B-T32H-M-D2 |
| 5/2-way valve, monostable | | | | | |
|  | Pneumatic spring return | – | – | 600 | 8033649 VSPA-B-M52-A-D2 |
| | | UL – Recognized (OL) | 202 | 550 | 151845 VL-5/2-D-2-C |
| | | ATEX category → page 124 | 202 | 550 | 536008 VL-5/2-D-2-C-EX |
|  | Mechanical spring return | – | – | 600 | 8033650 VSPA-B-M52-M-D2 |
| | | UL – Recognized (OL) | 204 | 550 | 151844 VL-5/2-D-2-FR-C |
| | | ATEX category → page 124 | 204 | 550 | 536011 VL-5/2-D-2-FR-C-EX |
| 5/2-way valve, bistable | | | | | |
|  | – | – | – | 610 | 8033647 VSPA-B-B52-D2 |
| | | | 201 | 550 | 151846 J-5/2-D-2-C |
| | | ATEX category → page 124 | 201 | 550 | 536014 J-5/2-D-2-C-EX |
|  | With dominant signal at 14 | – | – | 610 | 8033648 VSPA-B-D52-D2 |
| | | UL – Recognized (OL) | 203 | 550 | 151847 JD-5/2-D-2-C |
| | | ATEX category → page 124 | 203 | 550 | 536017 JD-5/2-D-2-C-EX |
| 5/3-way valve | | | | | |
|  | Normally closed | – | – | 655 | 8033651 VSPA-B-P53C-D2 |
| | Normally closed | UL – Recognized (OL) | 206 | 825 | 151848 VL-5/3G-D-2-C |
| | Mechanical spring return | ATEX category → page 124 | 206 | 825 | 536020 VL-5/3G-D-2-C-EX |
|  | Normally exhausted | – | – | 655 | 8033652 VSPA-B-P53E-D2 |
| | Normally exhausted | UL – Recognized (OL) | 208 | 825 | 151849 VL-5/3E-D-2-C |
| | Mechanical spring return | ATEX category → page 124 | 208 | 825 | 536023 VL-5/3E-D-2-C-EX |
|  | Normally pressurised | – | – | 655 | 8033653 VSPA-B-P53U-D2 |
| | Normally pressurised | UL – Recognized (OL) | 207 | 825 | 151850 VL-5/3B-D-2-C |
| | Mechanical spring return | ATEX category → page 124 | 207 | 825 | 536026 VL-5/3B-D-2-C-EX |

Datasheet – Width 65 mm

-  - Flow rate
Up to 4600 l/min



| General technical data | | | |
|------------------------|---|---|--|
| Type | VL- ...-C, J ... -C | VL- ... -EX, J ... -EX | |
| Design | Piston spool | Piston spool | |
| Sealing principle | Soft | Soft | |
| Actuation type | Pneumatic | Pneumatic | |
| Type of control | Direct | Direct | |
| Flow direction | Reversible | Reversible | |
| | VL-5/2-D-3-C: non-reversible | VL-5/2-D-3-C-EX: non-reversible | |
| Exhaust air function | Can be throttled | Can be throttled | |
| Manual override | None | None | |
| Type of mounting | On sub-base with through-hole and screw | On sub-base with through-hole and screw | |
| Mounting position | Any | Any | |
| Nominal width [mm] | 14.5 | 14.5 | |
| Overlap | Positive overlap | Positive overlap | |
| Width [mm] | 65 | 65 | |
| Grid dimension [mm] | 71 | 71 | |
| Pneumatic ports | Sub-base size 3 to ISO 5599-1 | Sub-base size 3 to ISO 5599-1 | |
| Noise level [dB (A)] | 85 | 85 | |
| Conforms to standard | ISO 5599-1 | ISO 5599-1 | |

| Flow rates | | | | |
|------------------------------------|---------------|-----------------|--------------------|----------------------|
| Valve function | 5/2-way valve | 5/3-way valve | | |
| | | Normally closed | Normally exhausted | Normally pressurised |
| Standard nominal flow rate [l/min] | 4500 | 4100 | 4600 | 4100 |

Datasheet – Width 65 mm

| Switching times [ms] | | Switching time on | Switching time off | Switching time changeover | Switching time changeover (dominant) |
|---------------------------|--------------------|-------------------|--------------------|---------------------------|--------------------------------------|
| 5/2-way valve, monostable | VL-5/2-D-1-C | 29 | 36 | – | – |
| | VL-5/2-D-1-C-EX | 29 | 36 | – | – |
| | VL-5/2-D-1-FR-C | 13 | 43 | – | – |
| | VL-5/2-D-1-FR-C-EX | 13 | 43 | – | – |
| 5/2-way valve, bistable | J-5/2-D-1-C | – | – | 8 | – |
| | J-5/2-D-1-C-EX | – | – | 8 | – |
| | JD-5/2-D-1-C | – | – | 8 | 8 |
| | JD-5/2-D-1-C-EX | – | – | 8 | 8 |
| 5/3-way valve | VL-5/3G-D-1-C | 17 | 61 | – | – |
| | VL-5/3G-D-1-C-EX | 17 | 61 | – | – |
| | VL-5/3E-D-1-C | 18 | 63 | – | – |
| | VL-5/3E-D-1-C-EX | 18 | 63 | – | – |
| | VL-5/3B-D-1-C | 16 | 60 | – | – |
| | VL-5/3B-D-1-C-EX | 16 | 60 | – | – |

| ATEX | |
|--|---|
| Type | VL- ... -EX, J ... -EX |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T4 Gb |
| ATEX category for dust | II 2D |
| Type of ignition protection for dust | Ex h IIIC T130°C Db |
| Explosion-proof ambient temperature [°C] | -10 ≤ Ta ≤ +60 |
| Explosion protection certification outside EU | EPL Db (GB) EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) 1) | To UK explosion regulations |

1) More information www.festo.com/catalogue/... → Support/Downloads.

| Operating and environmental conditions | | 5/2-way valve | | | 5/3-way valve |
|--|-------|--|-------------------|----------------|----------------|
| Valve function | | Monostable | | Bistable | |
| | | Pneumatic spring | Mechanical spring | | |
| 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] | 0.2 ... 1.6 | -0.09 ... +1.6 | -0.09 ... +1.6 | -0.09 ... +1.6 |
| | [bar] | 2 ... 16 | -0.9 ... +16 | -0.9 ... +16 | -0.9 ... +16 |
| Pilot pressure | [bar] | 2 ... 16 | 3 ... 16 | 2 ... 16 | 3 ... 16 |
| Ambient temperature | [°C] | -10 ... +60 | | | |
| Temperature of medium | [°C] | -10 ... +60 | | | |

| Safety characteristics | |
|------------------------|--|
| Shock resistance | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 |
| Vibration resistant | Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6 |

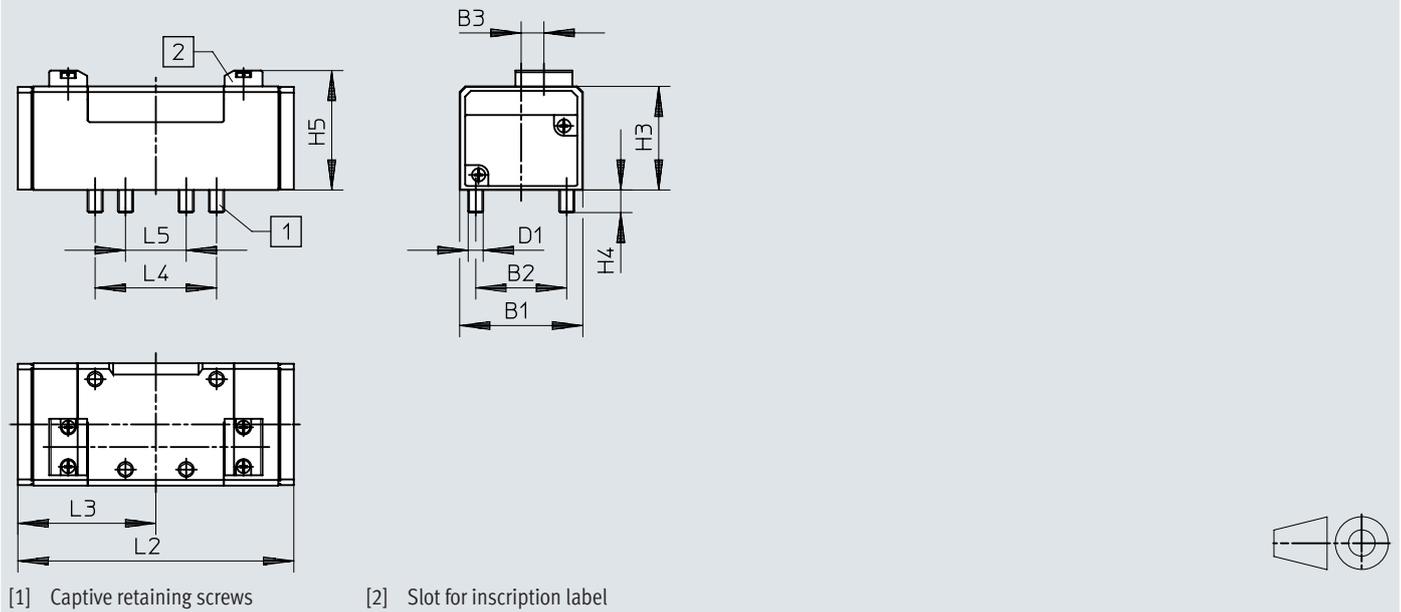
| Materials | |
|-------------------|--------------------|
| Housing | Die-cast aluminium |
| Seals | HNBR, NBR |
| Note on materials | RoHS-compliant |

Datasheet – Width 65 mm

Dimensions

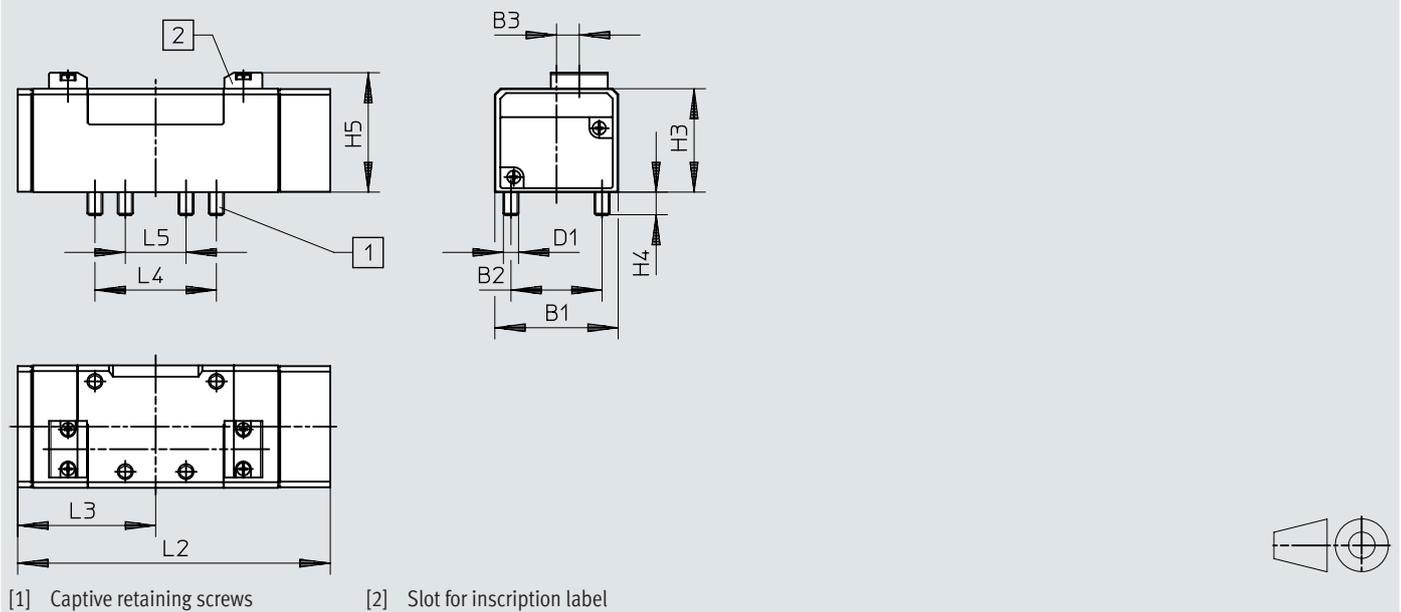
Download CAD data → www.festo.com

5/2-way valves, pneumatic spring return, 5/2-way valves, bistable



| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|-------------|----|----|----|----|----|----|------|-------|------|----|----|
| VL-5/2- ... | 65 | 48 | 12 | M8 | 55 | 12 | 63.5 | 145.4 | 72.7 | 64 | 32 |
| J-5/2- ... | | | | | | | | | | | |
| JD-5/2- ... | | | | | | | | | | | |

5/2-way valves, mechanical spring return

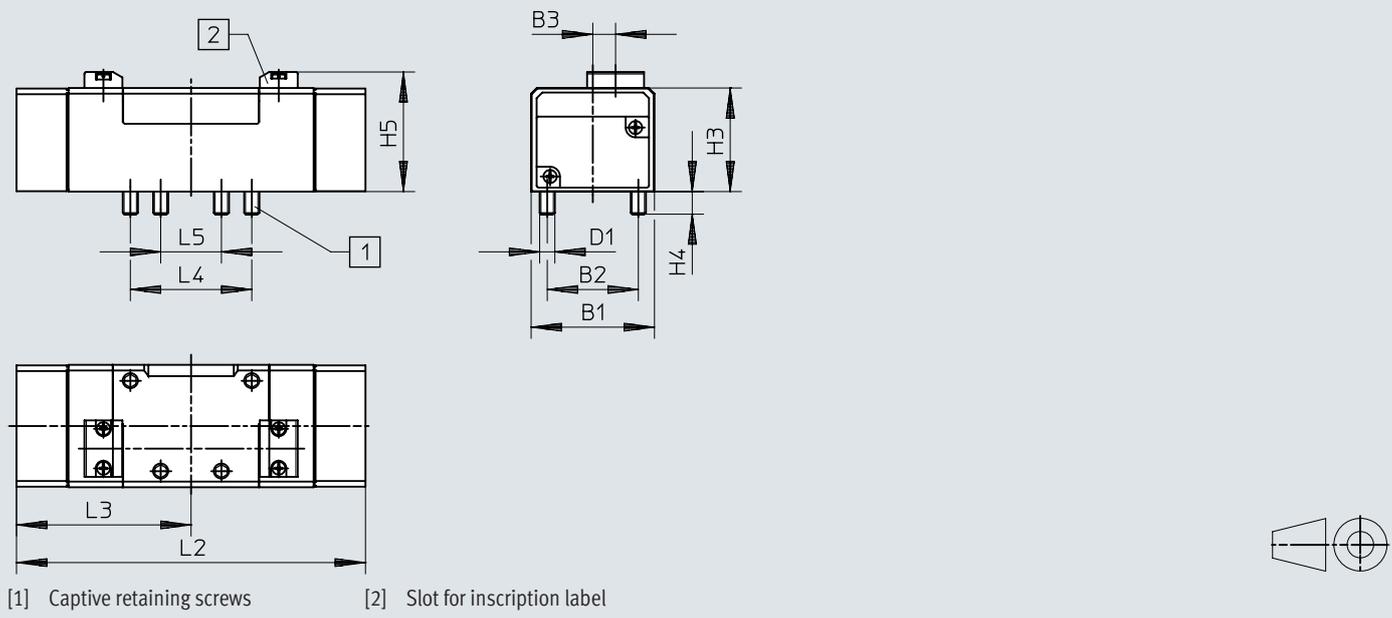


| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|----------------------|----|----|----|----|----|----|------|-------|------|----|----|
| VL-5/2- ... -FR- ... | 65 | 48 | 12 | M8 | 55 | 12 | 63.5 | 164.7 | 72.7 | 64 | 32 |

Datasheet – Width 65 mm

Dimensions – 5/3-way valves

Download CAD data → www.festo.com



| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|-----------|----|----|----|----|----|----|------|-----|----|----|----|
| VL-5/3... | 65 | 48 | 12 | M8 | 55 | 12 | 63.5 | 184 | 92 | 64 | 32 |

| Ordering data | | Description | Weight [g] | Part no. | Type |
|----------------------------------|--|---------------------------|------------|---------------|---------------------------|
| 5/2-way valve, monostable | | | | | |
| | Pneumatic spring return | c UL us - Recognized (OL) | 810 | 151864 | VL-5/2-D-3-C |
| | | ATEX category → page 130 | 810 | 536009 | VL-5/2-D-3-C-EX |
| | Mechanical spring return | c UL us - Recognized (OL) | 810 | 151863 | VL-5/2-D-3-FR-C |
| | | ATEX category → page 130 | 810 | 536012 | VL-5/2-D-3-FR-C-EX |
| 5/2-way valve, bistable | | | | | |
| | – | – | 810 | 151865 | J-5/2-D-3-C |
| | | ATEX category → page 130 | 810 | 536015 | J-5/2-D-3-C-EX |
| | With dominant signal at 14 | c UL us - Recognized (OL) | 810 | 151866 | JD-5/2-D-3-C |
| | | ATEX category → page 130 | 810 | 536018 | JD-5/2-D-3-C-EX |
| 5/3-way valve | | | | | |
| | Normally closed Mechanical spring return | c UL us - Recognized (OL) | 910 | 151867 | VL-5/3G-D-3-C |
| | | ATEX category → page 130 | 910 | 536021 | VL-5/3G-D-3-C-EX |
| | Normally exhausted Mechanical spring return | c UL us - Recognized (OL) | 910 | 151868 | VL-5/3E-D-3-C |
| | | ATEX category → page 130 | 910 | 536024 | VL-5/3E-D-3-C-EX |
| | Normally pressurised Mechanical spring return | – | 910 | 151869 | VL-5/3B-D-3-C |
| | | ATEX category → page 130 | 910 | 536027 | VL-5/3B-D-3-C-EX |

Datasheet – Width 76 mm

-  - Flow rate
Up to 6000 l/min

-  - Repair service

**General technical data**

| | |
|----------------------|---|
| Design | Piston spool |
| Sealing principle | Soft |
| Actuation type | Pneumatic |
| Type of control | Direct |
| Flow direction | Reversible |
| Exhaust air function | Can be throttled |
| Manual override | None |
| Type of mounting | On sub-base with through-hole and screw |
| Mounting position | Any |
| Nominal width [mm] | 18 |
| Overlap | Positive overlap |
| Width [mm] | 76 |
| Grid dimension [mm] | 82 |
| Pneumatic ports | Sub-base size 4 to ISO 5599-1 |
| Noise level [dB (A)] | 85 |
| Conforms to standard | ISO 5599-1 |

Flow rates

| | | |
|------------------------------------|---------------|---------------|
| Valve function | 5/2-way valve | 5/3-way valve |
| Standard nominal flow rate [l/min] | 6000 | 4800 |

Switching times [ms]

| | | Switching time on | Switching time off | Switching time changeover |
|---------------------------|-----------------|-------------------|--------------------|---------------------------|
| 5/2-way valve, monostable | VL-5/2-3/4-D-4 | 25 | 90 | – |
| 5/2-way valve, bistable | J-5/2-3/4-D-4 | – | – | 20 |
| 5/3-way valve | VL-5/3G-3/4-D-4 | 40 | 130 | – |
| | VL-5/3E-3/4-D-4 | 50 | 170 | – |

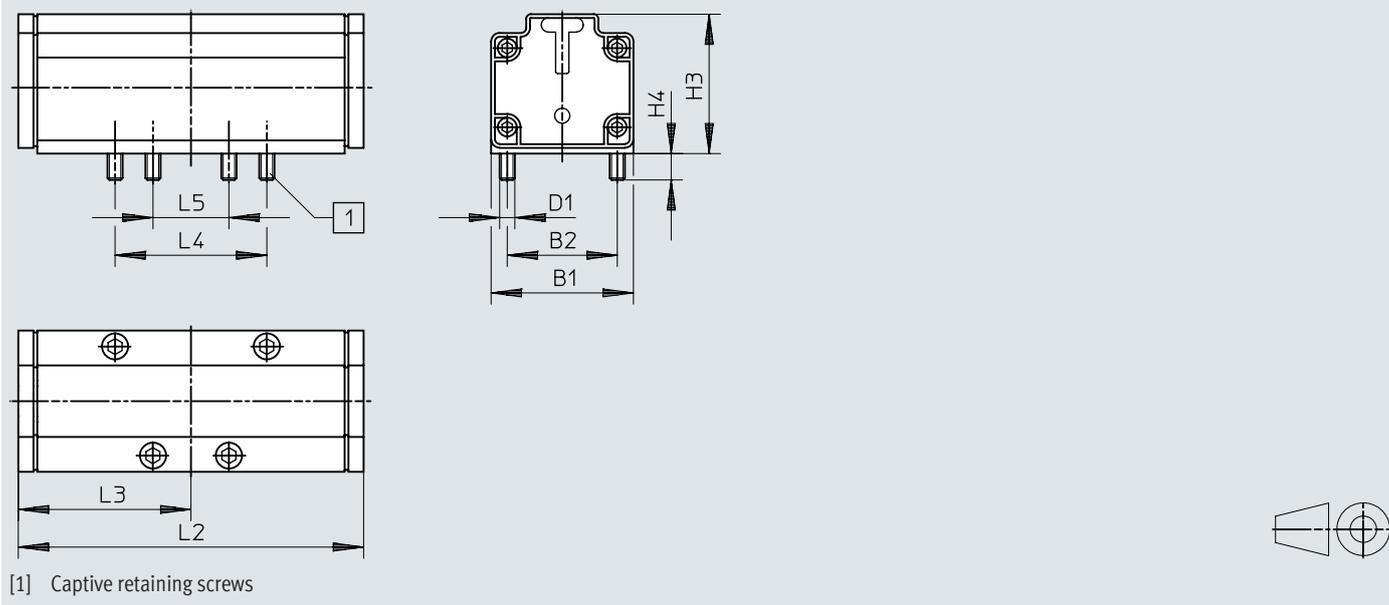
Datasheet – Width 76 mm

| Operating and environmental conditions | | 5/2-way valve | | 5/3-way valve |
|--|-------|--|--------------|---------------|
| | | Monostable | Bistable | |
| Valve function | | | | |
| 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 | [bar] | -0.9 ... +16 | -0.9 ... +16 | -0.9 ... +16 |
| Pilot pressure | [bar] | 3 ... 16 | 2 ... 16 | 3 ... 16 |
| Ambient temperature | [°C] | -10 ... +60 | | |
| Temperature of medium | [°C] | -10 ... +60 | | |

| Materials | |
|------------------------|-------------------|
| Housing | Aluminium |
| Seals | NBR |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Dimensions – 5/3-way valves

Download CAD data → www.festo.com



| Type | B1 | B2 | D1 | H3 | H4 | L2 | L3 | L4 | L5 |
|-----------------|----|----|----|----|----|-----|----|----|----|
| VL-5/2-3/4-D-4 | 76 | 58 | M8 | 74 | 14 | 182 | 91 | 80 | 40 |
| J-5/2-3/4-D-4 | | | | | | | | | |
| VL-5/3E-3/4-D-4 | | | | | | | | | |
| VL-5/3G-3/4-D-4 | | | | | | | | | |

Datasheet – Width 76 mm

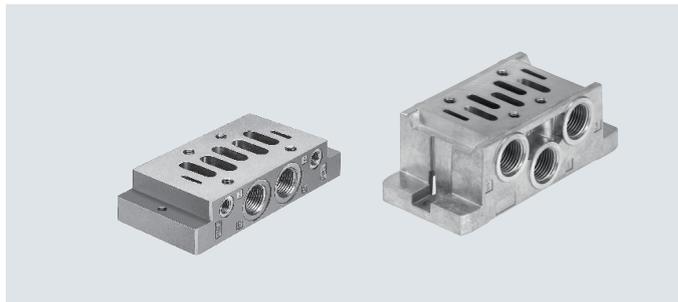
| Ordering data | | | | |
|----------------------------------|--|------------|----------|-----------------|
| Circuit symbol | Description | Weight [g] | Part no. | Type |
| 5/2-way valve, monostable | | | | |
| | Mechanical spring return | 1800 | 12461 | VL-5/2-3/4-D-4 |
| 5/2-way valve, bistable | | | | |
| | – | 1800 | 12462 | J-5/2-3/4-D-4 |
| 5/3-way valve | | | | |
| | Normally closed Mechanical spring return | 2000 | 12463 | VL-5/3G-3/4-D-4 |
| | Normally exhausted Mechanical spring return | 2000 | 12464 | VL-5/3E-3/4-D-4 |

Accessories

Individual sub-base NAS Sub-base VABS

Ports on the side

Materials:
Die-cast aluminium
Anodised aluminium



| General technical data | | | | | |
|-----------------------------------|-------------------|---------|---------|---------|--------------------------------|
| Type | NAS-1/4 | NAS-3/8 | NAS-1/2 | NAS-3/4 | VABS |
| Conforms to standard | ISO 5599-1 | | | | – |
| Based on standard | – | | | | ISO 5599-1 |
| Maximum number of valve positions | – | | | | 1 |
| Suitable for vacuum | – | | | | Yes |
| Exhaust air function | – | | | | Can be throttled |
| Type of mounting | With through-hole | | | | With through-hole for M5 screw |

| Materials | | | | | |
|------------------------|--------------------|---------|---------|--------------------|--------------------|
| Type | NAS-1/4 | NAS-3/8 | NAS-1/2 | NAS-3/4 | VABS |
| Sub-base | Die-cast aluminium | | | Anodised aluminium | Die-cast aluminium |
| Note on materials | – | | | – | RoHS-compliant |
| LABS (PWIS) conformity | – | | | – | VDMA24364-B1/B2-L |

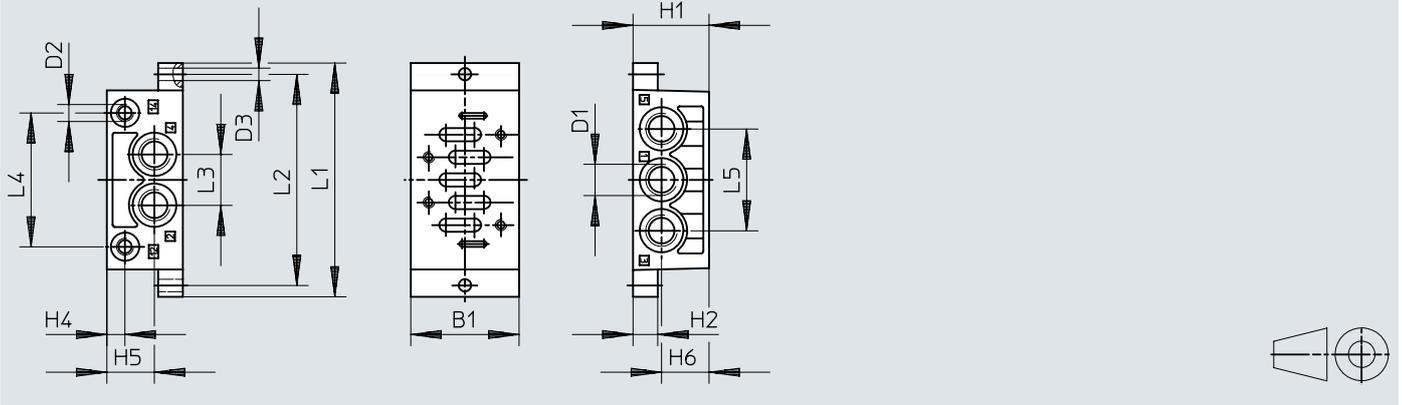
| Operating and environmental conditions | | | | | |
|--|------------------------|---------|---------|---------|--|
| Type | NAS-1/4 | NAS-3/8 | NAS-1/2 | NAS-3/4 | VABS |
| Operating medium | – | | | – | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Pilot medium | – | | | – | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on the operating/pilot medium | – | | | – | Lubricated operation possible (in which case lubricated operation will always be required) |
| Pilot pressure | [MPa] | – | | | 0 ... 1.6 |
| | [bar] | – | | | 0 ... 16 |
| Ambient temperature | [°C] | – | | | –10 ... +60 |
| Temperature of medium | [°C] | – | | | –10 ... +60 |
| Storage temperature | [°C] | – | | | –20 ... +60 |
| Corrosion resistance class CRC ¹⁾ | – | | | – | 0 - no corrosion stress |
| Certification | c UL - Recognized (OL) | | | – | – |

1) More information www.festo.com/x/topic/crc

Accessories

Dimensions – Individual sub-base NAS

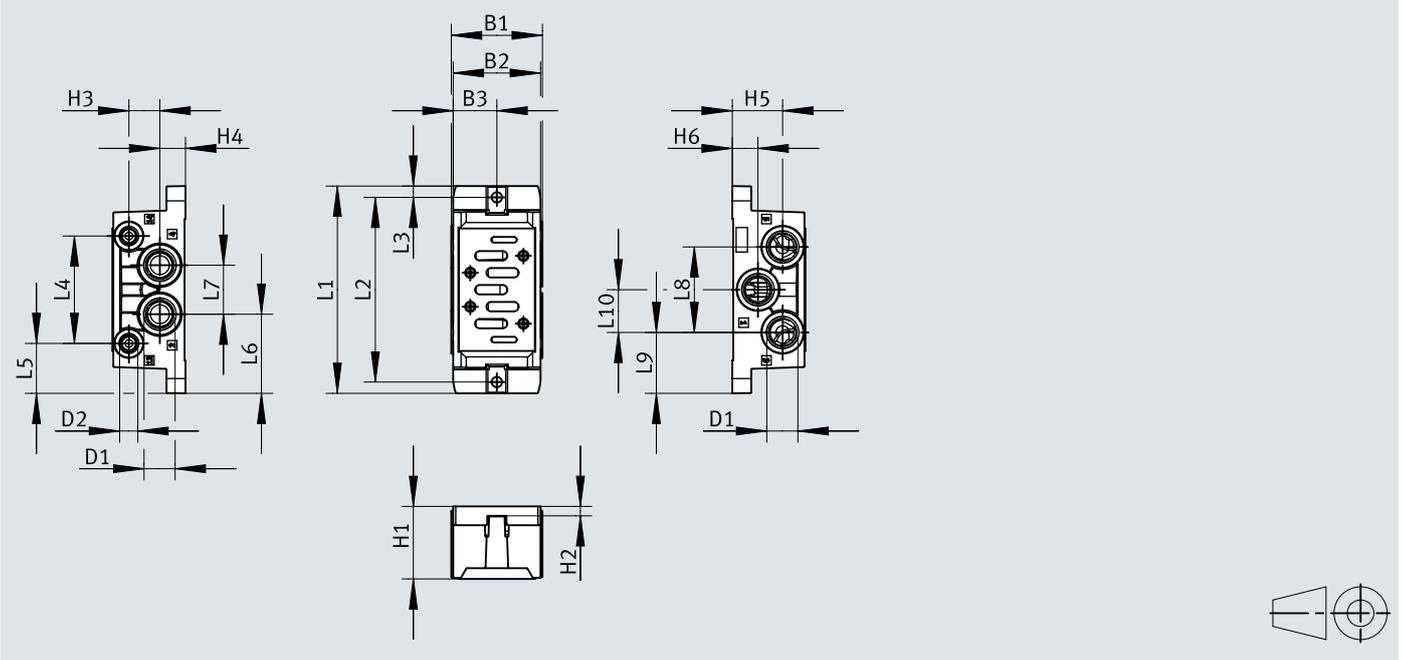
Download CAD data → www.festo.com



| Type | B1 | D1 | D2 | D3 | H1 | H2 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 |
|----------------|----|------|------|-----|----|----|----|------|------|-----|-----|----|-----|----|
| NAS-1/4-1A-ISO | 48 | G1/4 | G1/8 | 5.5 | 32 | 10 | 9 | 20.3 | 20.3 | 110 | 98 | 23 | 60 | 46 |
| NAS-3/8-2A-ISO | 57 | G3/8 | G1/8 | 6.6 | 40 | 13 | 9 | 25 | 25 | 124 | 112 | 27 | 71 | 54 |
| NAS-1/2-3A-ISO | 71 | G1/2 | G1/8 | 6.6 | 32 | 18 | 9 | 16 | 16 | 149 | 136 | 32 | 91 | 64 |
| NAS-3/4-4A-ISO | 85 | G3/4 | G1/8 | 9 | 42 | 19 | 9 | 21 | 21 | 186 | 170 | 42 | 111 | 84 |

Dimensions – Sub-base VABS

Download CAD data → www.festo.com



| Type | B1 | B2 | B3 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 |
|-----------------|----|----|----|---------|---------|------|----|------|------|------|------|
| VABS-S1-1S-G38 | 48 | 46 | 23 | G3/8 | G1/8 | 38.5 | 5 | 16.3 | 13.5 | 26.5 | 13.5 |
| VABS-S1-1HS-G38 | | | | | 1/8 NPT | | | | | | |
| VABS-S1-1S-N38 | | | | 3/8 NPT | 1/8 NPT | | | | | | |
| VABS-S1-1HS-N38 | | | | 1/8 NPT | 1/8 NPT | | | | | | |
| VABS-S1-2S-G12 | 58 | 56 | 28 | G1/2 | G1/8 | 45 | 10 | 18 | 16 | 29 | 16 |
| VABS-S1-2S-N12 | | | | 1/2 NPT | 1/8 NPT | | | | | | |

| Type | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 |
|-----------------|-----|-----|----|----|------|----|----|------|------|------|
| VABS-S1-1S-G38 | 110 | 98 | 6 | 57 | 26.5 | 42 | 26 | 45.4 | 32.3 | 22.7 |
| VABS-S1-1HS-G38 | | | | | | | | | | |
| VABS-S1-1S-N38 | | | | | | | | | | |
| VABS-S1-1HS-N38 | | | | | | | | | | |
| VABS-S1-2S-G12 | 124 | 112 | 6 | 72 | 26 | 46 | 32 | 55 | 34.5 | 27.5 |
| VABS-S1-2S-N12 | | | | | | | | | | |

Accessories

| Ordering data | | | | | | | | |
|---------------------|-------|----------------|---------|--------------------|--------------|------------|----------|-----------------|
| Designation to VDMA | Width | Pneumatic port | | Operating pressure | | Weight [g] | Part no. | Type |
| | | 1, 2, 3, 4, 5 | 12/14 | [MPa] | [bar] | | | |
| VDMA 24345-A-1 | – | G1/4 | G1/8 | – | – | 190 | 9484 | NAS-1/4-1A-ISO |
| – | 48 mm | G3/8 | G1/8 | –0.09 ... +1.6 | –0.9 ... +16 | 230 | 8032642 | VABS-S1-1S-G38 |
| | | | | –0.09 ... +1 | –0.9 ... +10 | | 8032646 | VABS-S1-1HS-G38 |
| | | 3/8 NPT | 1/8 NPT | –0.09 ... +1.6 | –0.9 ... +16 | 230 | 8032643 | VABS-S1-1S-N38 |
| | | | | –0.09 ... +1 | –0.9 ... +10 | | 8032647 | VABS-S1-1HS-N38 |
| VDMA 24345-A-2 | – | G3/8 | G1/8 | – | – | 300 | 11310 | NAS-3/8-2A-ISO |
| – | 58 mm | G1/2 | G1/8 | –0.09 ... +1.6 | –0.9 ... +16 | 380 | 8032644 | VABS-S1-2S-G12 |
| | | 1/2 NPT | 1/8 NPT | –0.09 ... +1.6 | –0.9 ... +16 | | 8032645 | VABS-S1-2S-N12 |
| VDMA 24345-A-3 | – | G1/2 | G1/8 | – | – | 360 | 10336 | NAS-1/2-3A-ISO |
| VDMA 24345-A-4 | – | G3/4 | G1/8 | – | – | 1260 | 152813 | NAS-3/4-4A-ISO |

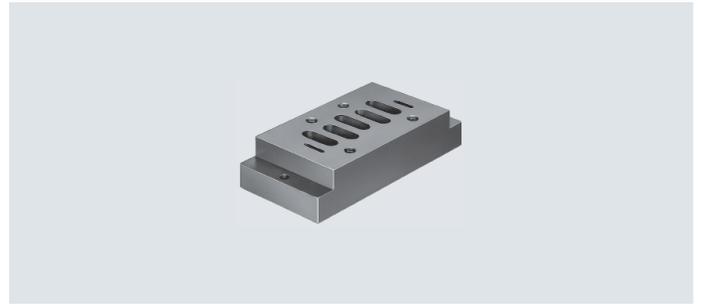
† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Accessories

Individual sub-base NAU

Connections underneath

Materials:
Die-cast aluminium
Anodised aluminium



General technical data

| | |
|----------------------|-------------------|
| Conforms to standard | ISO 5599-1 |
| Type of mounting | With through-hole |

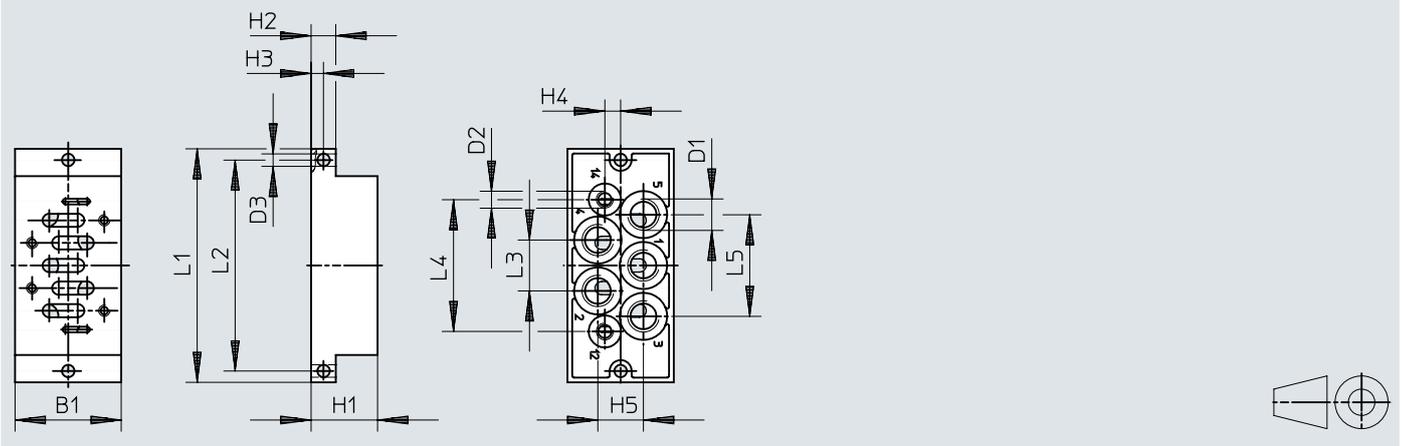
Materials

| | | | | |
|----------|--------------------|---------|---------|--------------------|
| Type | NAU-1/4 | NAU-3/8 | NAU-1/2 | NAU-3/4 |
| Sub-base | Die-cast aluminium | | | Anodised aluminium |

Operating and environmental conditions

| | | | | |
|---------------|------------------------|---------|---------|---------|
| Type | NAU-1/4 | NAU-3/8 | NAU-1/2 | NAU-3/4 |
| Certification | c UL - Recognized (OL) | | - | - |

Dimensions – Individual sub-base NAU

Download CAD data → www.festo.com

| Type | B1 | D1 | D2 | D3 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 |
|----------------|----|------|------|-----|----|----|-----|-----|----|-----|-----|----|------|----|
| NAU-1/4-1B-ISO | 46 | G1/4 | G1/8 | 5.5 | 30 | 10 | 5 | 7.5 | 20 | 110 | 98 | 23 | 60.7 | 46 |
| NAU-3/8-2B-ISO | 56 | G3/8 | G1/8 | 6.6 | 35 | 13 | 6.5 | 8.3 | 24 | 124 | 112 | 27 | 70 | 54 |
| NAU-1/2-3B-ISO | 71 | G1/2 | G1/8 | 6.6 | 32 | 18 | 9 | 10 | 30 | 149 | 136 | 33 | 90 | 66 |
| NAU-3/4-4B-ISO | 85 | G3/4 | G1/8 | 9 | 28 | 19 | 9.5 | 12 | 37 | 186 | 170 | 42 | 111 | 84 |

Accessories

| Ordering data Designation to VDMA | Pneumatic port | | Weight [g] | Part no. | Type |
|--------------------------------------|----------------|--------|---------------|---------------|-----------------------|
| | 1, 2, 3, 4, 5 | 12, 14 | | | |
| VDMA 24345-B-1 | G1/4 | G1/8 | – | 9485 | NAU-1/4-1B-ISO |
| VDMA 24345-B-2 | G3/8 | G1/8 | 450 | 11416 | NAU-3/8-2B-ISO |
| VDMA 24345-B-3 | G1/2 | G1/8 | 660 | 10337 | NAU-1/2-3B-ISO |
| VDMA 24345-B-4 | G3/4 | G1/8 | 1080 | 152814 | NAU-3/4-4B-ISO |

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Accessories

Manifold sub-base

NAV

VABV

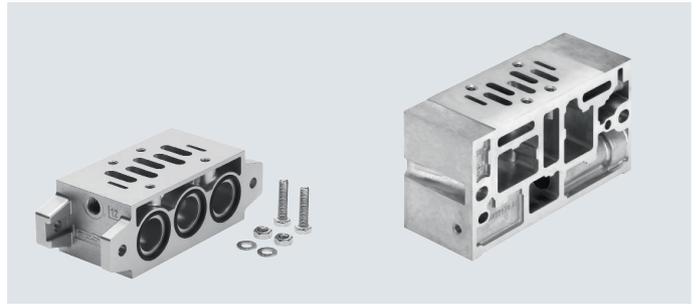
Connections underneath

Materials:

Die-cast aluminium

Anodised aluminium

Dimensions NAV → page155



General technical data

| Type | NAV-1/4 | NAV-3/8 | NAV-1/2 | NAV-3/4 | VABV |
|-----------------------------------|------------|---------|---------|---------|------------------|
| Conforms to standard | ISO 5599-1 | | | | – |
| Based on standard | – | – | – | – | ISO 5599-1 |
| Maximum number of valve positions | – | – | – | – | 1 |
| Suitable for vacuum | – | – | – | – | Yes |
| Exhaust air function | – | – | – | – | Can be throttled |

Materials

| Type | NAV-1/4 | NAV-3/8 | NAV-1/2 | NAV-3/4 | VABV |
|------------------------|--------------------|---------|---------|--------------------|--------------------|
| Sub-base | Die-cast aluminium | | | Anodised aluminium | Die-cast aluminium |
| Note on materials | – | – | – | – | RoHS-compliant |
| LABS (PWIS) conformity | – | – | – | – | VDMA24364-B1/B2-L |

Operating and environmental conditions

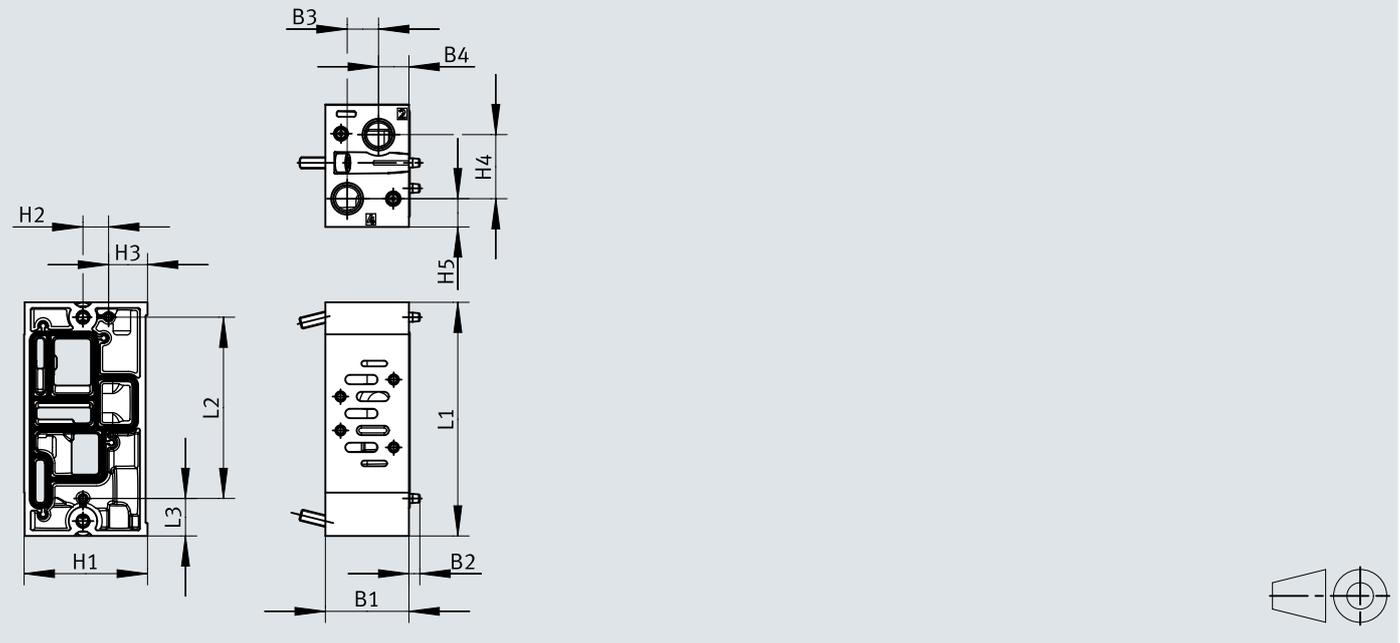
| Type | NAV-1/4 | NAV-3/8 | NAV-1/2 | NAV-3/4 | VABV |
|--|---------|----------------------|---------|---------|--|
| Operating medium | – | – | – | – | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Pilot medium | – | – | – | – | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on the operating/pilot medium | – | – | – | – | Lubricated operation possible (in which case lubricated operation will always be required) |
| Ambient temperature [°C] | – | – | – | – | –10 ... +50 |
| Temperature of medium [°C] | – | – | – | – | –10 ... +50 |
| Storage temperature [°C] | – | – | – | – | –20 ... +60 |
| Corrosion resistance class CRC ¹⁾ | – | – | – | – | 0 - no corrosion stress |
| Certification | – | UL – Recognized (OL) | | – | – |

1) More information www.festo.com/x/topic/crc

Accessories

Dimensions – Manifold sub-base VABV

Download CAD data → www.festo.com



| Type | B1 | B2 | B3 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 |
|------------------|----|------|----|----|------|------|------|------|-----|------|------|
| VABV-S1-1SB-G38 | 44 | 16.5 | 16 | 65 | 13.5 | 20.5 | 34 | 15 | 124 | 96.2 | 19.9 |
| VABV-S1-1HSB-G38 | | | | | | | 34.5 | | | | |
| VABV-S1-1SB-N38 | | | | | | | 34 | | | | |
| VABV-S1-1HSB-N38 | | | | | | | 34.5 | | | | |
| VABV-S1-2SB-G12 | 59 | 19.5 | 22 | | | | 35.5 | 14.5 | | | |
| VABV-S1-2SB-N12 | | | | | | | | | | | |

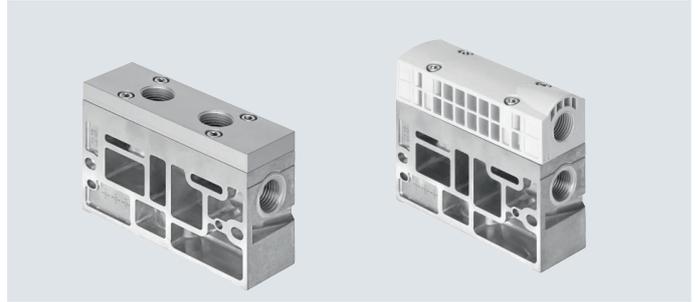
Ordering data

| Designation to VDMA | Width | Pneumatic port | | Operating pressure | | Weight [g] | Part no. | Type |
|---------------------|-------|----------------|----------------|--------------------|--------------|------------|------------------|-----------------|
| | | 2, 4 | 12/14 | [MPa] | [bar] | | | |
| VDMA 24345-C-1 | – | G1/4 | G1/8 | – | – | 240 | 10173 | NAV-1/4-1C-ISO |
| – | 44 mm | G3/8 | – | –0.09 ... +1.6 | –0.9 ... +16 | 490 | 8029812 | VABV-S1-1SB-G38 |
| –0.09 ... +1 | | | | –0.9 ... +10 | 8030650 | | VABV-S1-1HSB-G38 | |
| 3/8 NPT | | – | –0.09 ... +1.6 | –0.9 ... +16 | 490 | 8029813 | VABV-S1-1SB-N38 | |
| | | | –0.09 ... +1 | –0.9 ... +10 | | 8030651 | VABV-S1-1HSB-N38 | |
| VDMA 24345-C-2 | – | G3/8 | G1/8 | – | – | 400 | 11305 | NAV-3/8-2C-ISO |
| – | 59 mm | G1/2 | – | –0.09 ... +1.6 | –0.9 ... +16 | 670 | 8029814 | VABV-S1-2SB-G12 |
| 1/2 NPT | | – | –0.09 ... +1.6 | –0.9 ... +16 | 670 | 8029815 | VABV-S1-2SB-N12 | |
| VDMA 24345-C-3 | – | G1/2 | G1/8 | – | – | 700 | 10175 | NAV-1/2-3C-ISO |
| VDMA 24345-C-4 | – | G3/4 | G1/8 | – | – | 1400 | 11139 | NAV-3/4-4C-ISO |

Accessories

Supply plate VABF

Materials:
Die-cast aluminium
Wrought aluminium alloy
PA



| General technical data | |
|-----------------------------------|------------------|
| Based on standard | ISO 5599-1 |
| Maximum number of valve positions | 1 |
| Suitable for vacuum | Yes |
| Exhaust air function | Can be throttled |

| Materials | | |
|------------------------|-------------------------|--------------------|
| Type | VABF-S1-1-P1A11 | VABF-S1-1-P1A12 |
| Exhaust air plate | Wrought aluminium alloy | PA |
| Supply plate | Anodised aluminium | Die-cast aluminium |
| Note on materials | RoHS-compliant | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L | VDMA24364-B1/B2-L |

| Operating and environmental conditions | |
|--|--|
| 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 ... +1.6 |
| | [bar] -0.9 ... +16 |
| Ambient temperature | [°C] -10 ... +50 |
| Temperature of medium | [°C] -10 ... +50 |
| Storage temperature | [°C] -20 ... +60 |
| Corrosion resistance class CRC ¹⁾ | 0 - no corrosion stress |

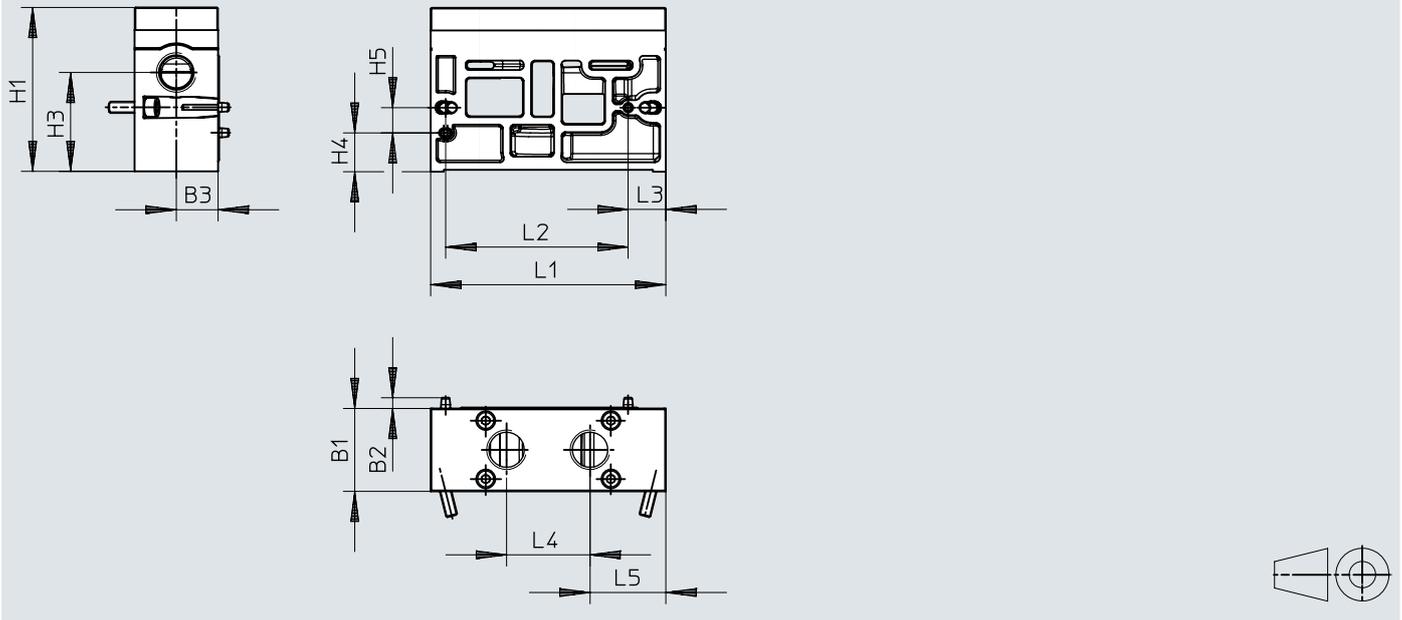
1) More information www.festo.com/x/topic/crc

Accessories

Dimensions

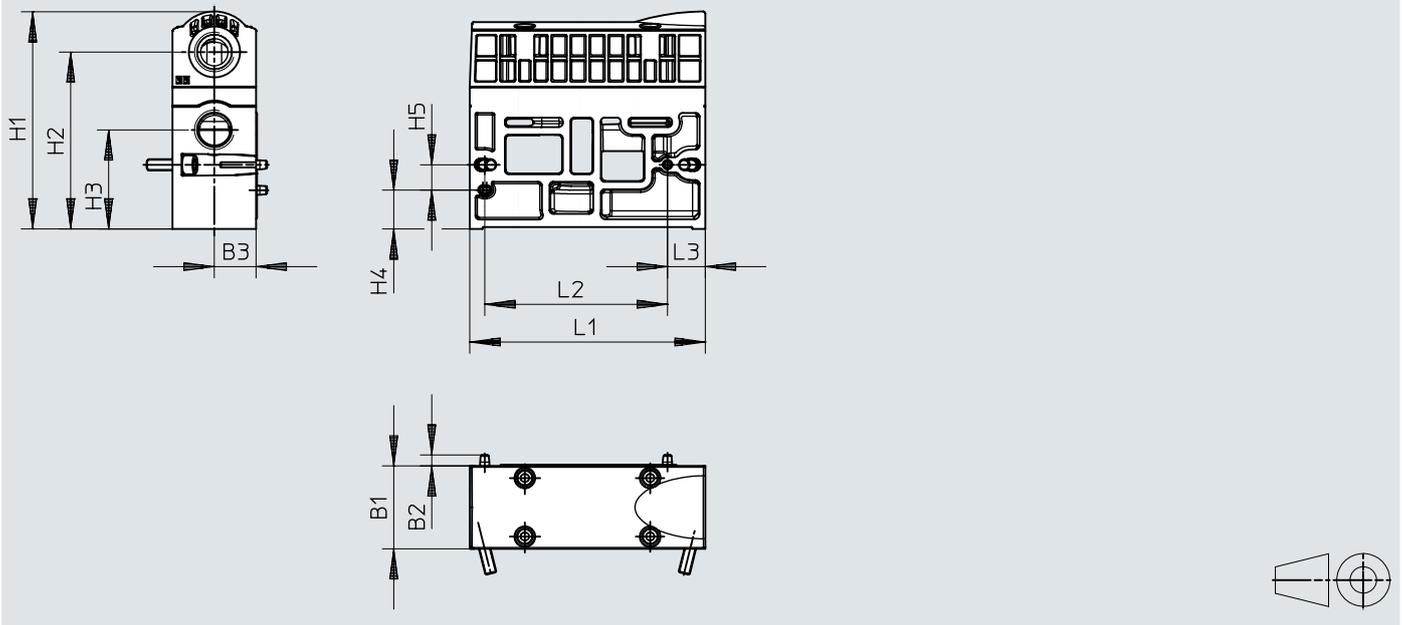
Download CAD data → www.festo.com

Port 3 and 5 separated



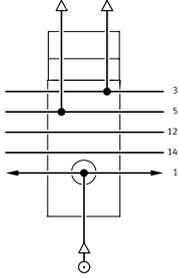
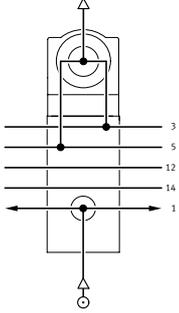
| Type | B1 | B2 | B3 | H1 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 |
|-----------------|----|-----|----|----|------|------|------|-----|------|------|----|----|
| VABF-S1-1-P1A11 | 44 | 5.5 | 22 | 87 | 52.5 | 20.5 | 13.5 | 124 | 96.2 | 19.9 | 44 | 40 |

Port 3 and 5 combined



| Type | B1 | B2 | B3 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 |
|-----------------|----|-----|----|-------|------|------|------|------|-----|------|------|
| VABF-S1-1-P1A12 | 44 | 5.8 | 22 | 115.2 | 93.8 | 52.5 | 20.5 | 13.5 | 124 | 96.2 | 19.9 |

Accessories

| Ordering data | | Pneumatic port | Weight [g] | Part no. | Type | |
|---------------|---|------------------------|------------|----------|----------------|----------------------------|
| Width | Description | | | | | |
| 44 mm |  | Port 3 and 5 separated | G1/2 | 660 | 8037655 | VABF-S1-1-P1A11-G12 |
| | | | 1/2 NPT | 660 | 8037656 | VABF-S1-1-P1A11-N12 |
| |  | Port 3 and 5 combined | G1/2 | 650 | 8037653 | VABF-S1-1-P1A12-G12 |
| | | | 1/2 NPT | 650 | 8037654 | VABF-S1-1-P1A12-N12 |

Accessories

Angled connection plate NAW

Ports on the side and on top

Materials:
Die-cast aluminium
Anodised aluminium

Dimensions → page 155



General technical data

Conforms to standard ISO 5599-1

Operating and environmental conditions

Type NAW-1/4 NAW-3/8 NAW-1/2 NAW-3/4

Sub-base material Die-cast aluminium Anodised aluminium

Ordering data

| Designation to VDMA | Pneumatic port | | Weight [g] | Part no. | Type |
|---------------------|----------------|------|---------------|--------------|-----------------------|
| | 2 | 4 | | | |
| VDMA 24345-E-1 | G1/4 | G1/4 | 360 | 11304 | NAW-1/4-1E-ISO |
| VDMA 24345-E-2 | G3/8 | G3/8 | 600 | 11307 | NAW-3/8-2E-ISO |
| VDMA 24345-E-3 | G1/2 | G1/2 | 920 | 11309 | NAW-1/2-3E-ISO |
| VDMA 24345-E-4 | G3/4 | G3/4 | 1550 | 11141 | NAW-3/4-4E-ISO |

Angled manifold sub-base NAVW

Ports on the side and underneath

Materials:
Die-cast aluminium

Dimensions → page 155



General technical data

Conforms to standard ISO 5599-1

Operating and environmental conditions

Operating medium Compressed air to ISO 8573-1:2010 [7:-:-]

Ordering data

| Pneumatic port | | Weight [g] | Part no. | Type |
|----------------|------|---------------|---------------|-----------------------|
| | | | | |
| G1/4 | G1/8 | 320 | 152789 | NAVW-1/4-1-ISO |
| G3/8 | G1/8 | 550 | 152790 | NAVW-3/8-2-ISO |
| G1/2 | G1/8 | 1020 | 152791 | NAVW-1/2-3-ISO |

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Accessories

End plate kit NEV

Materials:
Die-cast aluminium
Anodised aluminium

Dimensions NEV → page 155



General technical data

| | |
|----------------------|------------|
| Conforms to standard | ISO 5599-1 |
|----------------------|------------|

Ordering data

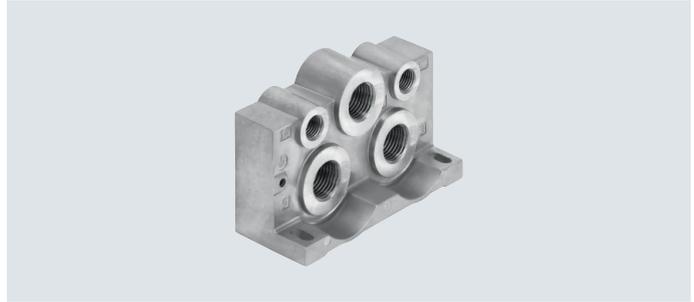
| Designation to VDMA | Pneumatic port | Weight [g] | Part no. | Type |
|---------------------|----------------|---------------|--------------|-----------------------|
| | 1, 3, 5 | | | |
| VDMA 24345-D-1 | G3/8 | 280 | 10174 | NEV-1DA/DB-ISO |
| VDMA 24345-D-2 | G1/2 | 450 | 11306 | NEV-2DA/DB-ISO |
| VDMA 24345-D-3 | G1 | 760 | 10176 | NEV-3DA/DB-ISO |
| VDMA 24345-D-4 | G1 | 1390 | 11140 | NEV-4DA/DB-ISO |

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Accessories

End plate VABE

Materials:
Die-cast aluminium



General technical data

| | |
|----------------------|--------------------------------|
| Based on standard | ISO 5599-1 |
| Suitable for vacuum | Yes |
| Exhaust air function | Can be throttled |
| Type of mounting | With through-hole for M6 screw |

Materials

| | |
|------------------------|--------------------|
| End plate | Die-cast aluminium |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Operating and environmental conditions

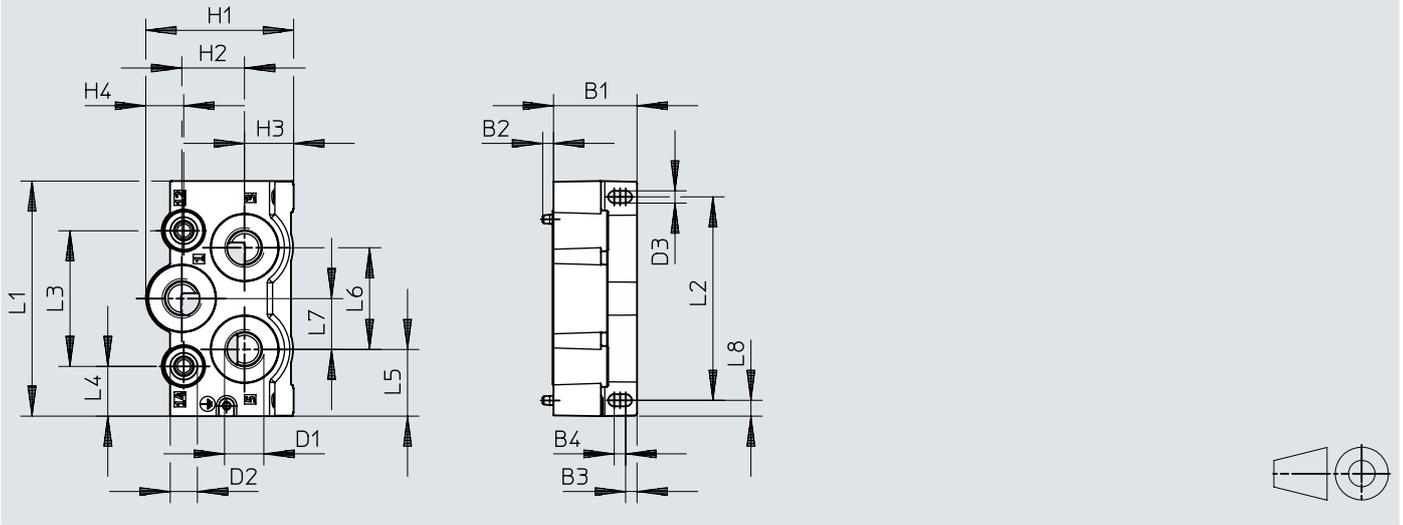
| | |
|--|--|
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Pilot medium | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on the operating/pilot medium | Lubricated operation possible (in which case lubricated operation will always be required) |
| Operating pressure | [MPa] -0.09 ... +1.6 [bar] -0.9 ... +16 |
| Ambient temperature | [°C] -10 ... +50 |
| Temperature of medium | [°C] -10 ... +50 |
| Storage temperature | [°C] -20 ... +60 |
| Corrosion resistance class CRC ¹⁾ | 0 - no corrosion stress |

1) More information www.festo.com/x/topic/crc

Accessories

Dimensions – End plate left

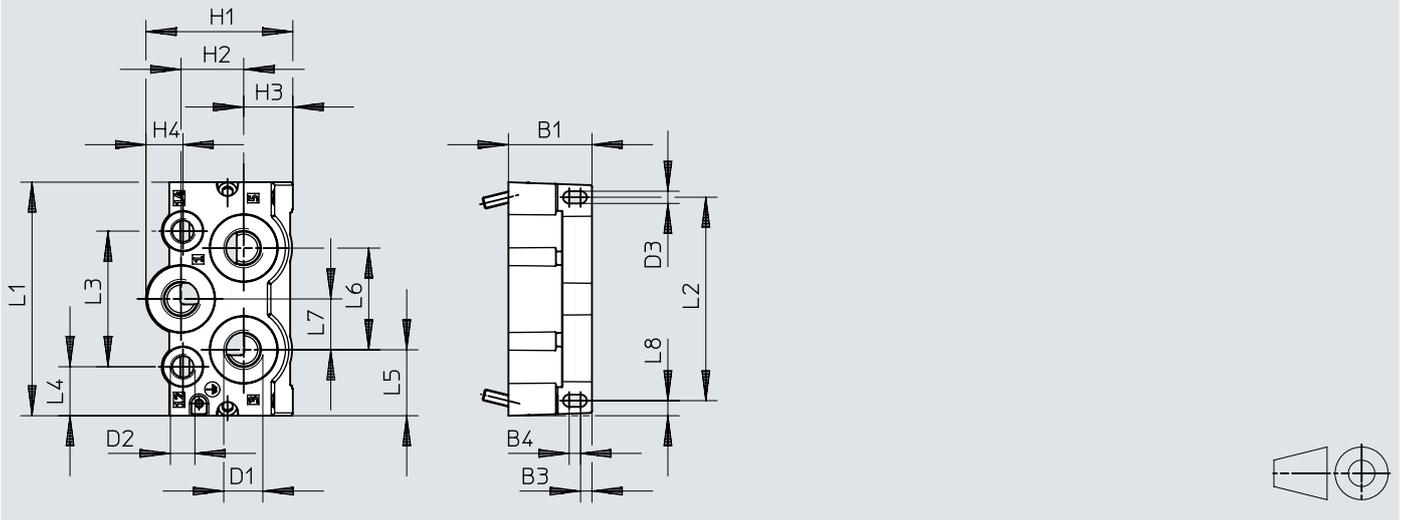
Download CAD data → www.festo.com



| Type | B1 | B2 | B3 | B4 | D1 | D2 | D3 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 |
|-----------------|----|-----|----|----|---------|---------|-----|------|----|------|----|-------|-----|----|------|------|----|----|-----|
| VABE-S1-1L-G12 | 44 | 5.8 | 6 | 6 | G1/2 | - | 6.5 | 77.9 | 33 | 25.9 | 20 | 124.9 | 108 | 72 | 26.4 | 35.4 | 54 | 27 | 8.4 |
| VABE-S1-1LZ-G12 | | | | | G1/2 | G1/4 | | | | | | | | | | | | | |
| VABE-S1-1L-N12 | | | | | 1/2 NPT | - | | | | | | | | | | | | | |
| VABE-S1-1LZ-N12 | | | | | 1/2 NPT | 1/4 NPT | | | | | | | | | | | | | |
| VABE-S1-2L-G34 | | | | | G3/4 | - | | | | | | | | | | | | | |
| VABE-S1-2LZ-G34 | | | | | G3/4 | G1/4 | | | | | | | | | | | | | |
| VABE-S1-2L-N34 | | | | | 3/4 NPT | - | | | | | | | | | | | | | |
| VABE-S1-2LZ-N34 | | | | | 3/4 NPT | 1/4 NPT | | | | | | | | | | | | | |

Dimensions – End plate right

Download CAD data → www.festo.com



| Type | B1 | B3 | B4 | D1 | D2 | D3 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 |
|-----------------|----|----|----|---------|---------|-----|------|----|------|------|-----|-----|----|----|----|----|----|----|
| VABE-S1-1R-G12 | 44 | 6 | 6 | G1/2 | - | 6.5 | 77.4 | 33 | 25.9 | 19.5 | 124 | 108 | 72 | 26 | 35 | 54 | 27 | 8 |
| VABE-S1-1RZ-G12 | | | | G1/2 | G1/4 | | | | | | | | | | | | | |
| VABE-S1-1R-N12 | | | | 1/2 NPT | - | | | | | | | | | | | | | |
| VABE-S1-1RZ-N12 | | | | 1/2 NPT | 1/4 NPT | | | | | | | | | | | | | |
| VABE-S1-2R-G34 | | | | G3/4 | - | | | | | | | | | | | | | |
| VABE-S1-2RZ-G34 | | | | G3/4 | G1/4 | | | | | | | | | | | | | |
| VABE-S1-2R-N34 | | | | 3/4 NPT | - | | | | | | | | | | | | | |
| VABE-S1-2RZ-N34 | | | | 3/4 NPT | 1/4 NPT | | | | | | | | | | | | | |

Accessories

| Ordering data | | | | | | | |
|-----------------------|------------------------|---------|---------------|------------------|----------|-----------------|----------------|
| Width | Pneumatic port | | Weight [g] | Pilot air supply | Part no. | Type | |
| | 1, 3, 5 | 12, 14 | | | | | |
| End plate left | | | | | | | |
| 44 mm | G1/2 | – | 400 | Internal | 8032662 | VABE-S1-1L-G12 | |
| | | G1/4 | | External | 8032660 | VABE-S1-1LZ-G12 | |
| | 1/2 NPT | – | 400 | Internal | 8032663 | VABE-S1-1L-N12 | |
| | | 1/4 NPT | | External | 8032661 | VABE-S1-1LZ-N12 | |
| | G3/4 | – | 360 | Internal | 8032666 | VABE-S1-2L-G34 | |
| | | G1/4 | | External | 8032664 | VABE-S1-2LZ-G34 | |
| | 3/4 NPT | – | 360 | Internal | 8032667 | VABE-S1-2L-N34 | |
| | | 1/4 NPT | | External | 8032665 | VABE-S1-2LZ-N34 | |
| | End plate right | | | | | | |
| | 44 mm | G1/2 | – | 410 | Internal | 8032670 | VABE-S1-1R-G12 |
| G1/4 | | | External | | 8032668 | VABE-S1-1RZ-G12 | |
| 1/2 NPT | | – | 410 | Internal | 8032671 | VABE-S1-1R-N12 | |
| | | 1/4 NPT | | External | 8032669 | VABE-S1-1RZ-N12 | |
| G3/4 | | – | 370 | Internal | 8032674 | VABE-S1-2R-G34 | |
| | | G1/4 | | External | 8032672 | VABE-S1-2RZ-G34 | |
| 3/4 NPT | | – | 370 | Internal | 8032675 | VABE-S1-2R-N34 | |
| | | 1/4 NPT | | External | 8032673 | VABE-S1-2RZ-N34 | |

Accessories

Cover plate NDV

Materials:
Width 42 mm, 52 mm, 65 mm:
Steel

Width 76 mm:
Wrought aluminium alloy

Dimensions → page 155



General technical data

| | |
|----------------------|------------|
| Conforms to standard | ISO 5599-1 |
|----------------------|------------|

Operating and environmental conditions

| | |
|------------------------------------|--|
| Operating medium | Compressed air to ISO 8573-1:2010 [7:-:-] |
| Note on the operating/pilot medium | Lubricated operation possible (in which case lubricated operation will always be required) |

Ordering data

| Width | Weight [g] | Part no. | Type |
|-------|------------|----------|-----------|
| 42 mm | 113 | 9489 | NDV-1-ISO |
| 52 mm | 166 | 11308 | NDV-2-ISO |
| 65 mm | 314 | 10340 | NDV-3-ISO |
| 76 mm | 1480 | 11142 | NDV-4-ISO |

Isolating disc NSC

Materials:
Wrought aluminium alloy

Dimensions → page 155



General technical data

| | |
|----------------------|------------|
| Conforms to standard | ISO 5599-1 |
|----------------------|------------|

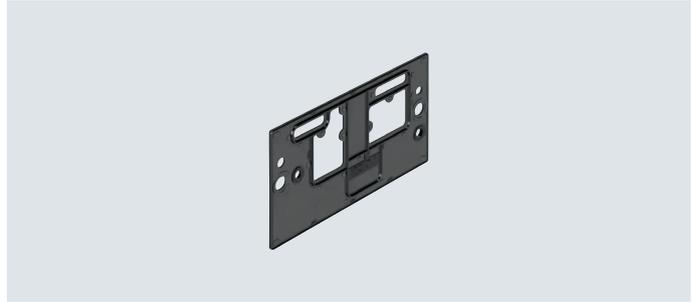
Ordering data

| Width | Pneumatic port | Weight [g] | Part no. | Type |
|-------|----------------|------------|----------|---------------|
| 42 mm | G1/4 | 6 | 11550 | NSC-1/4-1-ISO |
| 52 mm | G3/8 | 9.2 | 11908 | NSC-3/8-2-ISO |
| 65 mm | G1/2 | 20 | 11551 | NSC-1/2-3-ISO |
| 76 mm | G3/4 | 24 | 11699 | NSC-3/4-4-ISO |

Accessories

Duct separation VABD

Materials:
Steel, NBR



General technical data

| | |
|---------------------|--------------------------------|
| Based on standard | ISO 5599-1 |
| Suitable for vacuum | Yes |
| Type of mounting | With through-hole for M6 screw |

Materials

| | |
|------------------------|-------------------|
| Separator plate | Steel NBR |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Operating and environmental conditions

| | |
|--|--|
| 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 ... +1 [bar] -0.9 ... +10 |
| Ambient temperature | [°C] -10 ... +50 |
| Temperature of medium | [°C] -10 ... +50 |
| Storage temperature | [°C] -20 ... +60 |
| Corrosion resistance class CRC ¹⁾ | 0 - no corrosion stress |

1) More information www.festo.com/x/topic/crc

Ordering data

| Duct separation | Weight [g] | Part no. | Type |
|--------------------------|------------|----------------|-----------------------|
| Duct 1 | 60 | 8029438 | VABD-S1-1-P1-C |
| Duct 3 and duct 5 | 70 | 8029439 | VABD-S1-1-P2-C |
| Ducts 1, 3 and 5 | 75 | 8029440 | VABD-S1-1-P3-C |
| Ducts 1, 3, 5, 12 and 14 | 75 | 8029441 | VABD-S1-1-P6-C |
| Duct 12 and duct 14 | 60 | 8036068 | VABD-S1-1-P7-C |

Accessories

Intermediate plate NZV

For connecting manifold sub-bases of different sizes

Materials:
Die-cast aluminium, anodised



General technical data

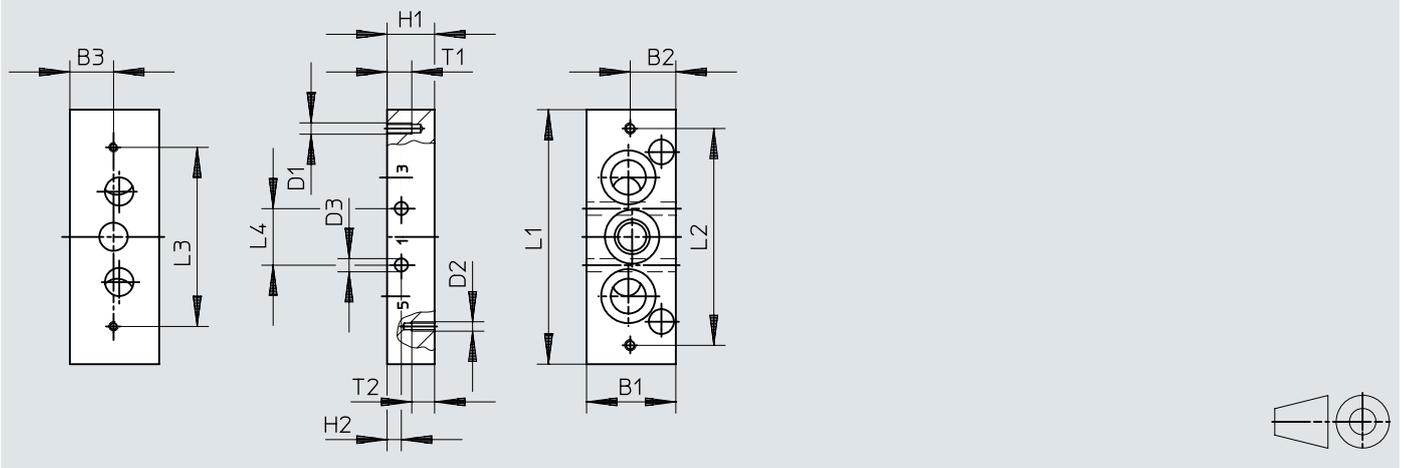
Based on standard

ISO 5599-1

Dimensions

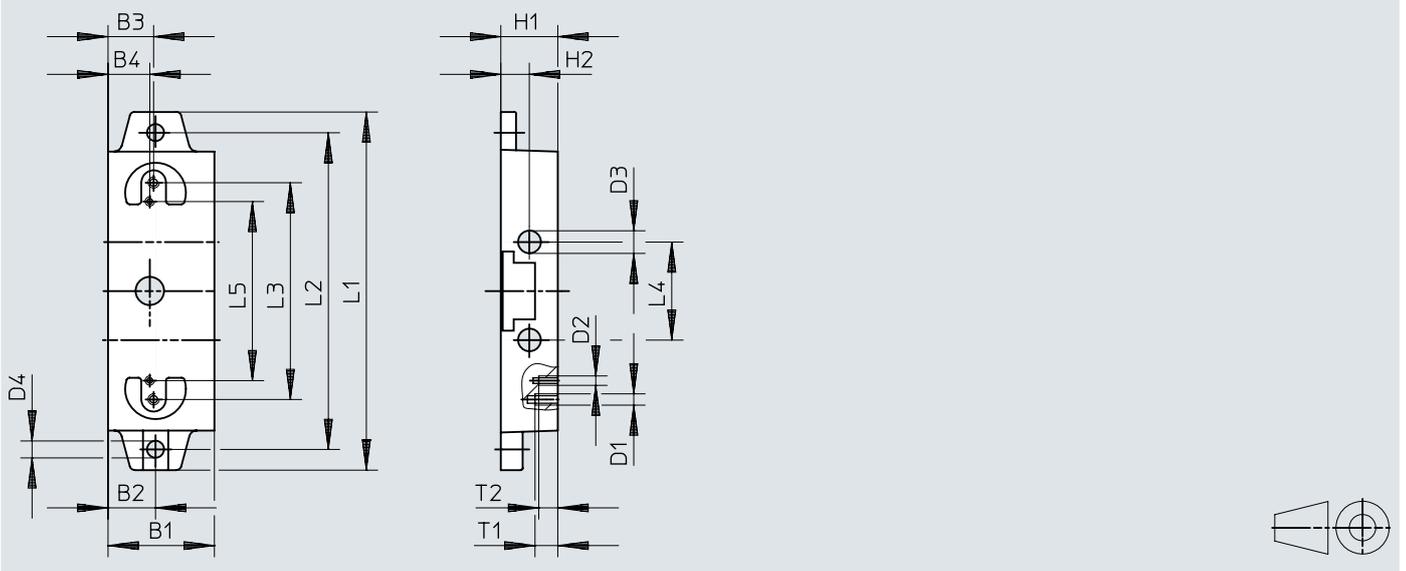
Download CAD data → www.festo.com

For manifold sub-bases of width 42 mm, 52 mm



| | B1 | B2 | B3 | D1 | D2 | D3 | H1 | H2 | L1 | L2 | L3 | L4 | T1 | T2 |
|---------|----|----|----|----|----|----|----|-----|-----|-----|----|----|----|----|
| NZV-1-2 | 47 | 24 | 23 | M6 | M5 | 7 | 25 | 7.5 | 135 | 115 | 95 | 30 | 13 | 12 |

For manifold sub-bases of width 42 mm and 65 mm or 52 mm and 65 mm



| | B1 | B2 | B3 | B4 | D1 | D2 | D3 | D4 | H1 | H2 | L1 | L2 | L3 | L4 | L5 | T1 | T2 |
|-----------|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|----|----|----|----|
| NZV-3-2/1 | 56 | 25 | 24 | 22 | M6 | M5 | 12 | 9 | 30 | 15 | 190 | 168 | 115 | 52 | 95 | 12 | 10 |

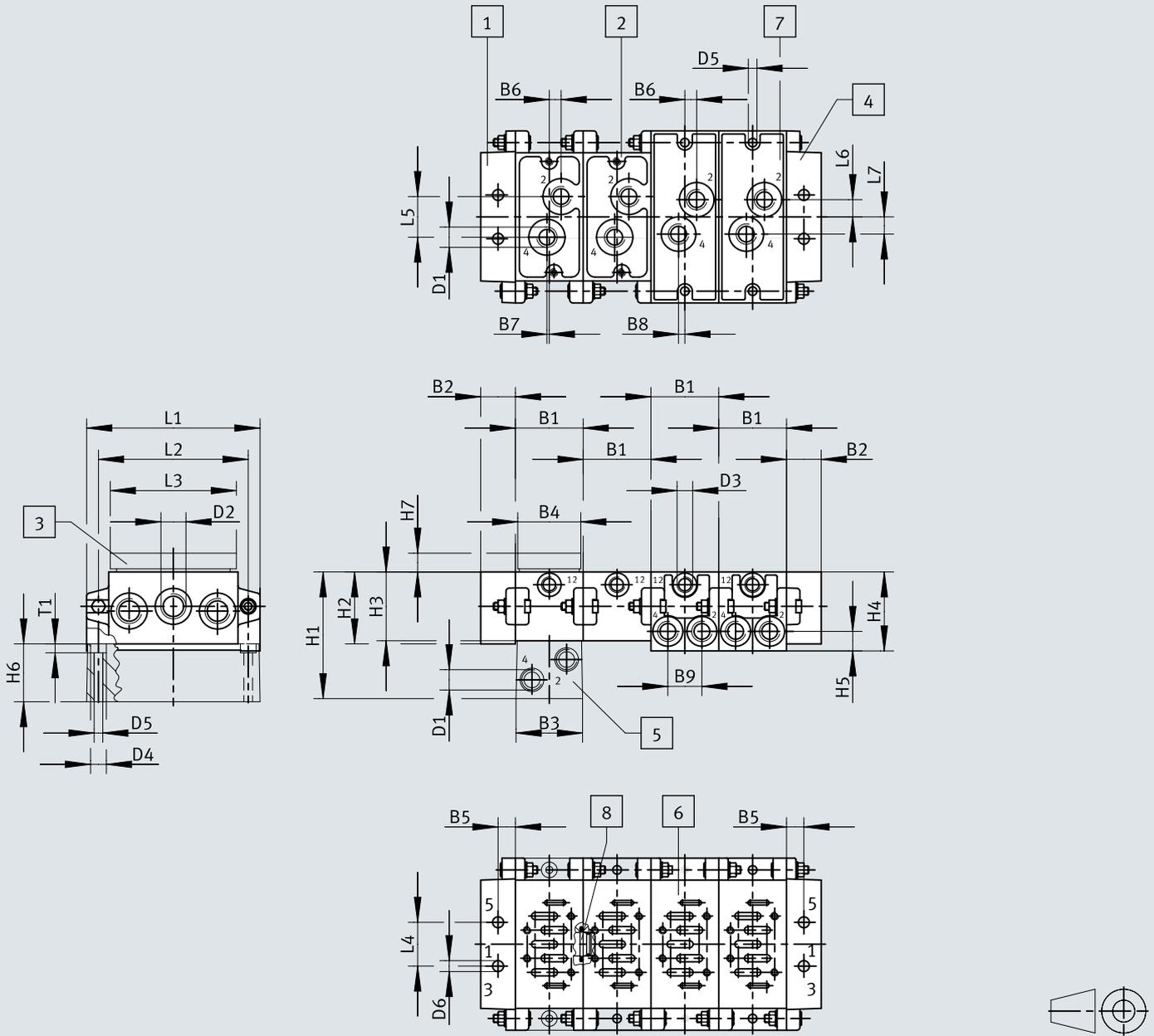
Accessories

| Ordering data | Weight [g] | Part no. | Type |
|--|---------------|---------------|------------------|
| For manifold sub-bases of width 42 mm, 52 mm | 393 | 164940 | NZV-1-2 |
| For manifold sub-bases of width 42 mm and 65 mm or 52 mm and 65 mm | 473 | 12911 | NZV-3-2/1 |

Accessories

Dimensions – Manifold assembly

Download CAD data → www.festo.com



[1] Left end plate, end plate kit NEV
 [2] Manifold sub-base NAV

[3] Cover plate NDV
 [4] Right end plate, end plate kit NEV

[5] Angled sub-base NAW
 [6] Hole pattern to ISO 5599-1

[7] Angled manifold sub-base NAW
 [8] Isolating disc NSC

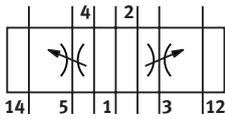
Accessories

| Width | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | D1 | D2 | D3 | D4 ∅ | D5 ∅ | D6 ∅ |
|-------|----|----|----|----|----|-----|-----|----|------|------|------|------|---------|---------|---------|
| 42 mm | 43 | 22 | 42 | 40 | 11 | 7.5 | 1.5 | 4 | 21.6 | G1/4 | G3/8 | G1/8 | 10 | 5.5 | 7 |
| 52 mm | 56 | 26 | 55 | 50 | 13 | 6 | 5 | 6 | 27 | G3/8 | G1/2 | G1/8 | 11 | 6.6 | 9 |
| 65 mm | 71 | 30 | 70 | 70 | 15 | 8 | 6 | 6 | 35.5 | G1/2 | G1 | G1/8 | 15 | 9 | 12 |
| 76 mm | 82 | 30 | 80 | 80 | 15 | 9 | 8 | – | – | G3/4 | G1 | G1/8 | 15 | 9 | 12 |

| Width | H1 | H2 | H3 | H4 | H5 | H6 | H7 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | T1 |
|-------|-----|----|----|------|------|----|----|-----|-----|-----|----|----|----|----|-----|
| 42 mm | 81 | 46 | 44 | 50.5 | 12.5 | 37 | 5 | 110 | 95 | 80 | 28 | 26 | 11 | 11 | 5.7 |
| 52 mm | 85 | 47 | 45 | 60 | 15 | 40 | 5 | 135 | 115 | 96 | 35 | 30 | 15 | 14 | 6.8 |
| 65 mm | 99 | 56 | 54 | 66 | 17.5 | 45 | 5 | 190 | 168 | 120 | 52 | 38 | 19 | 19 | 9 |
| 76 mm | 120 | 58 | 55 | – | – | 65 | 5 | 215 | 184 | – | 56 | 52 | – | – | 9 |

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Accessories



Exhaust air flow control for 3 and 5.

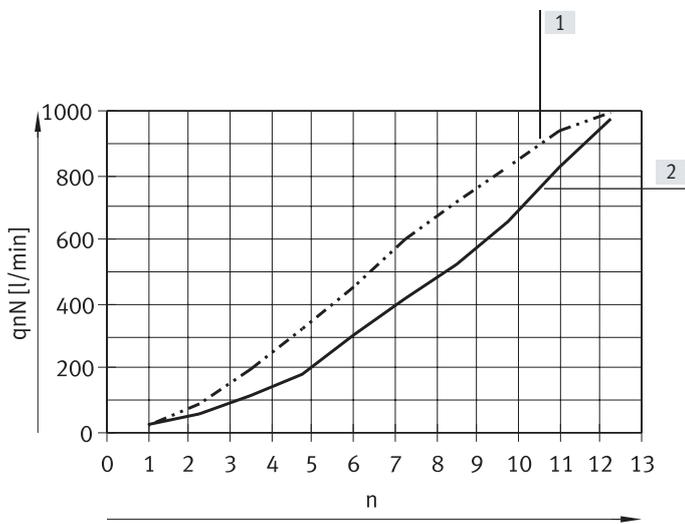


| General technical data | | | | |
|--|---------|--|------------------|--|
| Type | | VABF-S1-1-F1B1-C | VABF-S1-2-F1B1-C | GRO-ZP-3-ISO |
| Based on standard | | ISO 5599-1 | | |
| Pneumatic vertical stacking | | Throttle plate, exhaust air flow control | | |
| Mounting position | | Any | | |
| Type of mounting | | With through-hole | | |
| Standard nominal flow rate | [l/min] | 1100 | – | 1500 |
| Degree of protection | | IP65 | IP65 | – |
| | | NEMA4 | NEMA4 | – |
| Materials | | | | |
| Housing | | Die-cast aluminium | | |
| Note on materials | | RoHS-compliant | | |
| Operating and environmental conditions | | | | |
| Type | | VABF-S1-1-F1B1-C | VABF-S1-2-F1B1-C | GRO-ZP-3-ISO |
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | | Compressed air to ISO 8573-1:2010 [7:-:-] |
| Note on the operating/pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) | | Lubricated operation possible (in which case lubricated operation will always be required) |
| Operating pressure | [MPa] | –0.09 ... +1 | –0.09 ... +1 | – |
| | [bar] | –0.9 ... +10 | –0.9 ... +10 | 0 ... +16 |
| Input pressure 1 | [MPa] | – | +0.05 ... +1 | – |
| | [bar] | – | +0.5 ... +10 | – |
| | [psi] | – | 7.25 ... 145 | – |
| Ambient temperature | [°C] | –5 ... +50 | –5 ... +50 | –20 ... +80 |
| Temperature of medium | [°C] | – | – | –20 ... +80 |

Accessories

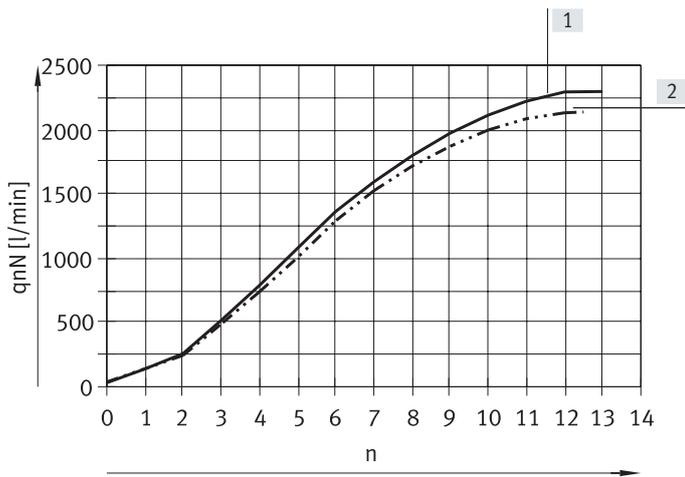
Standard nominal flow rate q_{nN} as a function of the turns n of the regulating screw

VABF-S1-1-F1B1-C



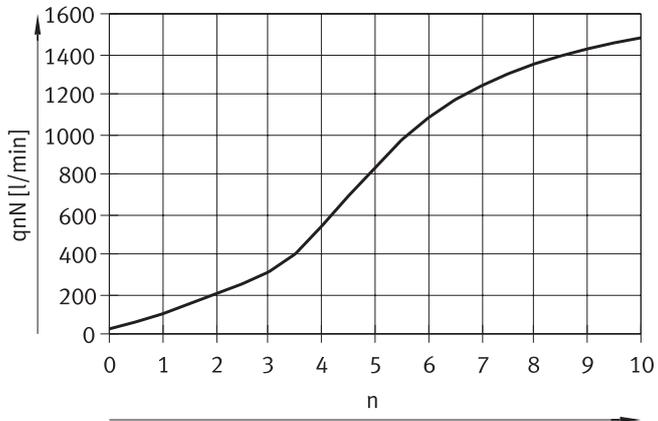
- [1] Flow control screw from 4 to 5
- [2] Flow control screw from 2 to 3

VABF-S1-2-F1B1-C



- [1] Flow control screw from 2 to 3
- [2] Flow control screw from 4 to 5

GRO-ZP-3-ISO

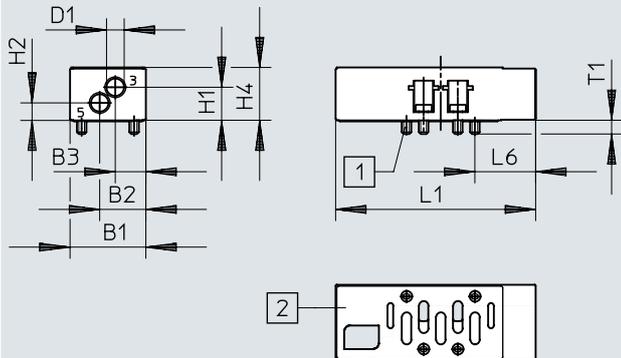


Accessories

Dimensions

Download CAD data → www.festo.com

Throttle plate VABF-S1-...



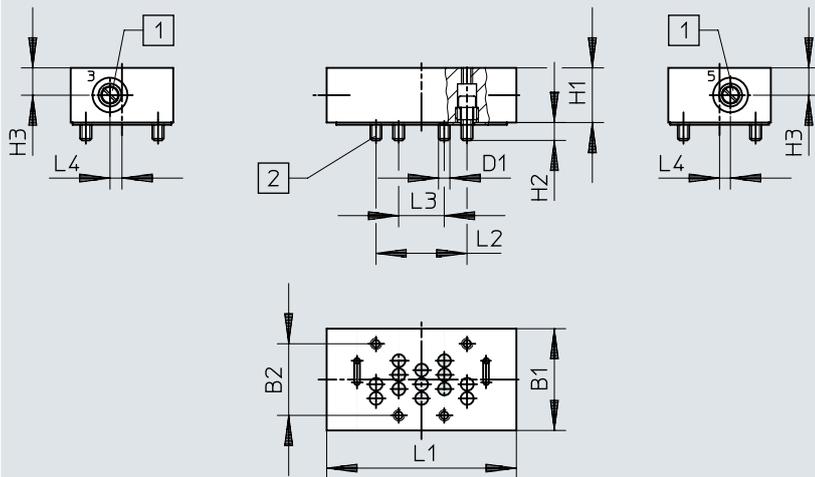
[1] Captive retaining screws

[2] Port pattern to ISO 5599-1



| Width | B1 | B2 | B3 | D1 | H1 | H2 | H4 | L1 | L6 | T1 |
|-------|------|------|------|------|------|------|----|-------|------|-----|
| 42 mm | 39.9 | 24.3 | 16.1 | 9.3 | 17.5 | 9.2 | 28 | 105.3 | 32 | 7.3 |
| 52 mm | 52 | 32.5 | 22.5 | 13.4 | 29.5 | 13.5 | 45 | 131 | 40.9 | 10 |

Throttle plate GRO-ZP-3-ISO



[1] Adjusting screw for flow control

[2] Captive retaining screws

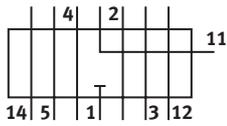


| Width | B1 | B2 | D1 | H1 | H2 | H3 | L1 | L2 | L3 | L5 |
|-------|----|----|----|----|----|------|-----|----|----|----|
| 65 mm | 70 | 48 | M8 | 33 | 12 | 16.5 | 132 | 64 | 32 | 7 |

Ordering data

| Circuit symbol | Description | Width | Weight [g] | Part no. | Type |
|----------------|--------------------------|-------|------------|---------------|-------------------------|
| | Exhaust air flow control | 42 mm | 220 | 549102 | VABF-S1-1-F1B1-C |
| | | 52 mm | 565 | 555788 | VABF-S1-2-F1B1-C |
| | | 65 mm | 850 | 119674 | GRO-ZP-3-ISO |

Accessories



Alternative compressed air supply for port 1 of the mounted valve.



| General technical data | | |
|-----------------------------|--|-------------------|
| Type | VABFS1-1-P1A3-G38 | VABFS1-2-P1A3-G12 |
| Based on standard | ISO 5599-1 | |
| Pneumatic vertical stacking | Alternative compressed air supply for 1 | |
| Mounting position | Any | |
| Type of mounting | On individual sub-base, on manifold sub-base | |
| Standard nominal flow rate | [l/min] | 1300 |
| Pneumatic port 1 | G3/8 | G1/2 |
| Degree of protection | IP65 | IP65 |
| | NEMA4 | NEMA4 |

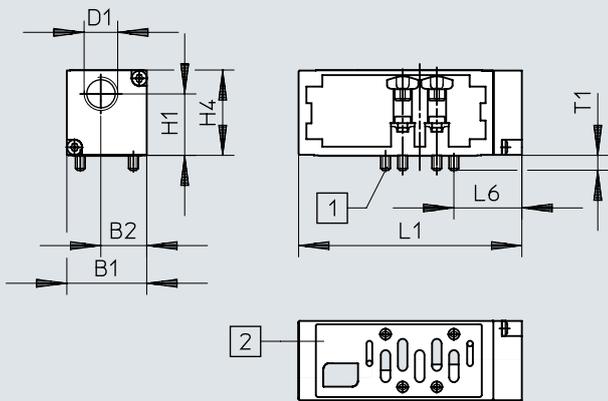
| Materials | |
|-------------------|--------------------|
| Housing | Die-cast aluminium |
| Note on materials | RoHS-compliant |

| Operating and environmental conditions | | | |
|--|-------|--|-------------------|
| Type | | VABFS1-1-P1A3-G38 | VABFS1-2-P1A3-G12 |
| 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 | [MPa] | -0.09 ... +1 | -0.09 ... +1 |
| | [bar] | -0.9 ... +10 | -0.9 ... +10 |
| Input pressure 1 | [MPa] | - | +0.05 ... +1 |
| | [bar] | - | +0.5 ... +10 |
| | [psi] | - | 7.25 ... 145 |
| Ambient temperature | [°C] | -5 ... +50 | -5 ... +50 |

Accessories

Dimensions

Download CAD data → www.festo.com



[1] Captive retaining screws

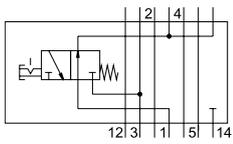
[2] Port pattern to ISO 5599-1

| Type | B1 | B2 | D1 | H1 | H4 | L1 | L6 | T1 |
|--------------------|------|------|------|------|------|-------|------|-----|
| VABF-S1-1-P1A3-G38 | 42.1 | 24.2 | G3/8 | 32.7 | 45.3 | 117.6 | 35.8 | 7.9 |
| VABF-S1-2-P1A3-G12 | 54 | 31 | G1/2 | 42.4 | 58.9 | 136 | 38 | 10 |

Ordering data

| Circuit symbol | Description | Width | Standard nominal flow rate [l/min] | Weight [g] | Part no. | Type |
|----------------|-----------------------|-------|------------------------------------|------------|---------------|---------------------------|
| | Vertical supply plate | 42 mm | 1300 | 340 | 549100 | VABF-S1-1-P1A3-G38 |
| | | 52 mm | 2800 | 605 | 555785 | VABF-S1-2-P1A3-G12 |

Accessories



Vertical pressure shut-off plate for blocking duct 1 and duct 14 upstream of a valve.



| General technical data | | |
|-----------------------------|--|---|
| Type | VABFS1-1-L1D1-C | VABFS1-2-L1D1-C |
| Based on standard | ISO 5599-1 | |
| Pneumatic vertical stacking | Shut-off for 1 | Alternative compressed air supply for 1 |
| Mounting position | Any | |
| Type of mounting | On individual sub-base, on manifold sub-base | |
| Standard nominal flow rate | [l/min] | |
| | 1200 | 1950 |
| Pneumatic port 1 | G3/8 | G1/2 |
| Degree of protection | IP65 | IP65 |
| | NEMA4 | NEMA4 |

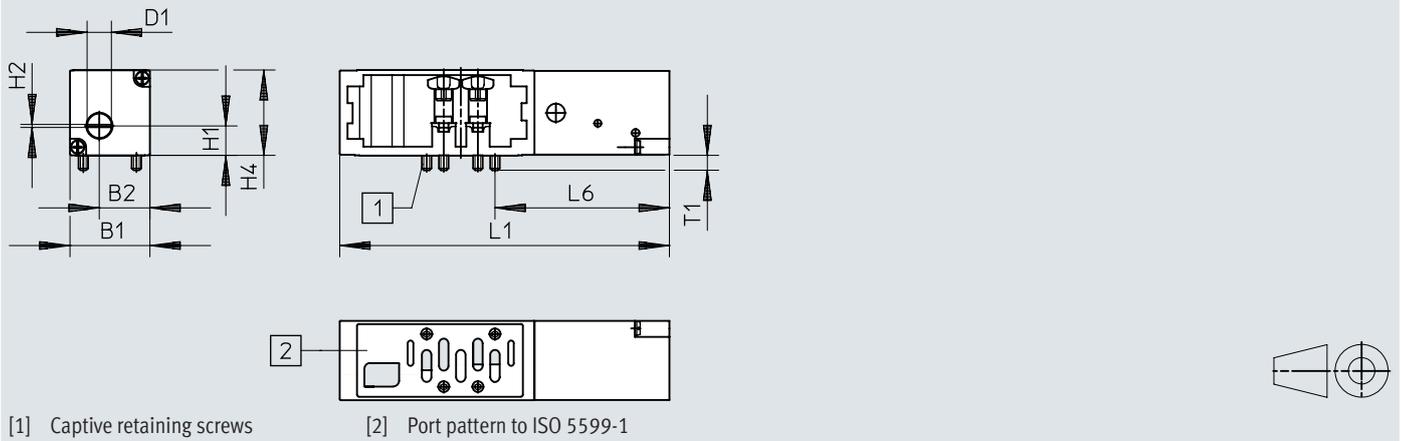
| Materials | |
|-------------------|--------------------|
| Housing | Die-cast aluminium |
| Note on materials | RoHS-compliant |

| Operating and environmental conditions | | |
|--|--|-----------------|
| Type | VABFS1-1-L1D1-C | VABFS1-2-L1D1-C |
| 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 | [MPa] | -0.09 ... +1 |
| | [bar] | -0.9 ... +10 |
| Input pressure 1 | [MPa] | - |
| | [bar] | - |
| | [psi] | 7.25 ... 145 |
| Ambient temperature | [°C] | -5 ... +50 |

Accessories

Dimensions

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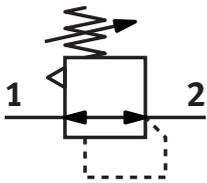


| Type | B1 | B2 | D1 | H1 | H2 | H4 | L1 | L6 | T1 |
|------------------|------|------|------|------|-----|------|-------|------|-----|
| VABF-S1-1-L1D1-C | 42.1 | 26.7 | 12.8 | 15.6 | 1.6 | 45.3 | 173.8 | 92 | 7.9 |
| VABF-S1-2-L1D1-C | 54 | 32.6 | 14 | 21.3 | 1.6 | 58.7 | 191.2 | 93.2 | 10 |

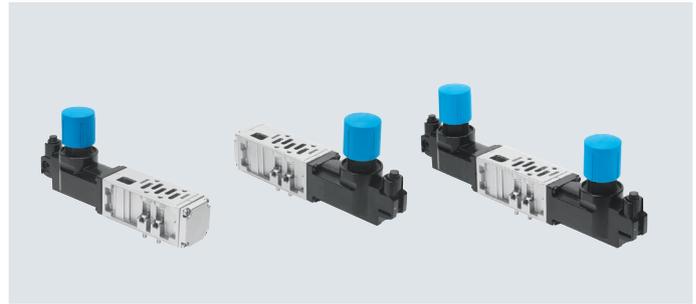
Ordering data

| Circuit symbol | Description | Width | Standard nominal flow rate [l/min] | Weight [g] | Part no. | Type |
|----------------|----------------------------------|-------|------------------------------------|------------|---------------|-------------------------|
| | Vertical pressure shut-off plate | 42 mm | 1200 | 600 | 549103 | VABF-S1-1-L1D1-C |
| | | 52 mm | 1950 | 1030 | 555790 | VABF-S1-2-L1D1-C |

Accessories



The pressure regulator enables a particular pressure in the regulated port to be set manually upstream or downstream of the valve.



| General technical data | | | | |
|-----------------------------|------|---------------------------|---------------------------|--------------------|
| Type | | VABFS1-1-R... | VABFS1-2-R... | LR-ZP-...-3 |
| Width | [mm] | 42 | 52 | 65 |
| Based on standard | | ISO 5599-1 | ISO 5599-1 | ISO 5599-1 |
| Pneumatic vertical stacking | | Pressure regulator | Pressure regulator | Pressure regulator |
| Design | | – | – | Piston |
| Regulator function | | Output pressure constant | Output pressure constant | – |
| | | With secondary exhausting | With secondary exhausting | – |
| Mounting position | | Any | Any | – |
| Type of mounting | | On individual sub-base | On individual sub-base | – |
| | | On manifold sub-base | On manifold sub-base | – |
| Optional pressure gauge | | Possible | Possible | – |
| Pressure gauge connection | | With retaining clamp | With retaining clamp | – |
| Degree of protection | | IP65 | IP65 | – |
| | | NEMA4 | NEMA4 | – |

| Materials | | | | |
|-------------------|--|---|---|--|
| Type | | VABFS1-1-R... | VABFS1-2-R... | LR-ZP-...-3 |
| Regulator housing | | Die-cast aluminium | Die-cast aluminium | Die-cast aluminium, steel |
| Control section | | PA | PA | – |
| Seals | | – | – | NBR |
| Note on materials | | RoHs-compliant | RoHs-compliant | RoHs-compliant |
| | | Free of paint-wetting impairment substances | Free of paint-wetting impairment substances | Contains paint-wetting impairment substances |

| Operating and environmental conditions | | | | |
|--|-------|--|---------------|----------------------|
| Type | | VABFS1-1-R... | VABFS1-2-R... | LR-ZP-...-3 |
| 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) | | – |
| Input pressure 1 | [MPa] | 0.05 ... 1 | 0.05 ... 1 | – |
| | [bar] | +0.5 ... +10 | +0.5 ... +10 | Max. 14 |
| | [psi] | 7.25 ... 145 | 7.25 ... 145 | – |
| Ambient temperature | [°C] | –5 ... +50 | –5 ... +50 | – |
| Certification | | – | – | UL – Recognized (OL) |

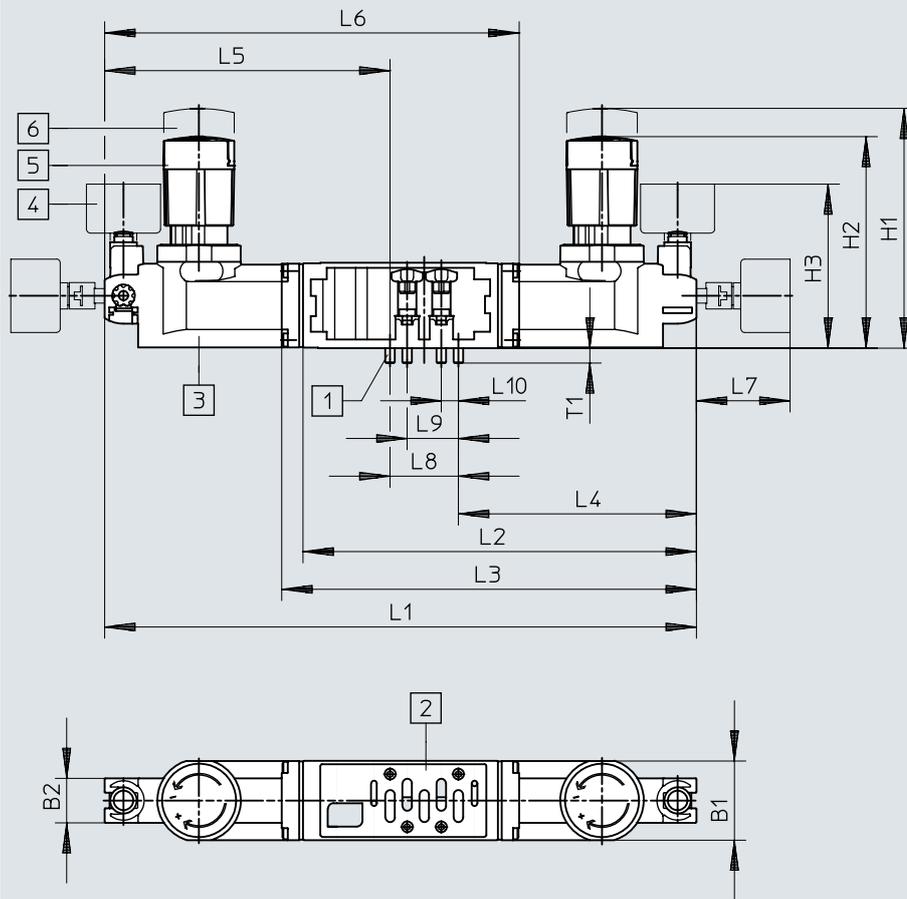
| Product weight | | | | |
|----------------|---------|---------------|---------------|-------------|
| Type | | VABFS1-1-R... | VABFS1-2-R... | LR-ZP-...-3 |
| Regulated port | 1 | 640 g | 1190 g | 1220 g |
| | 2 | 640 g | 1230 g | 1220 g |
| | 4 | 640 g | 1230 g | 1220 g |
| | 2 and 4 | 920 g | 1990 g | 1770 g |

Accessories

Dimensions

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VABF-S1-1-..., VABF-S1-2-...



- [1] Captive retaining screws
- [2] Port pattern to ISO 5599-1
- [3] Regulator housing
- [4] Pressure gauge
- [5] Regulator knob, locked
- [6] Regulator knob during pressure adjustment

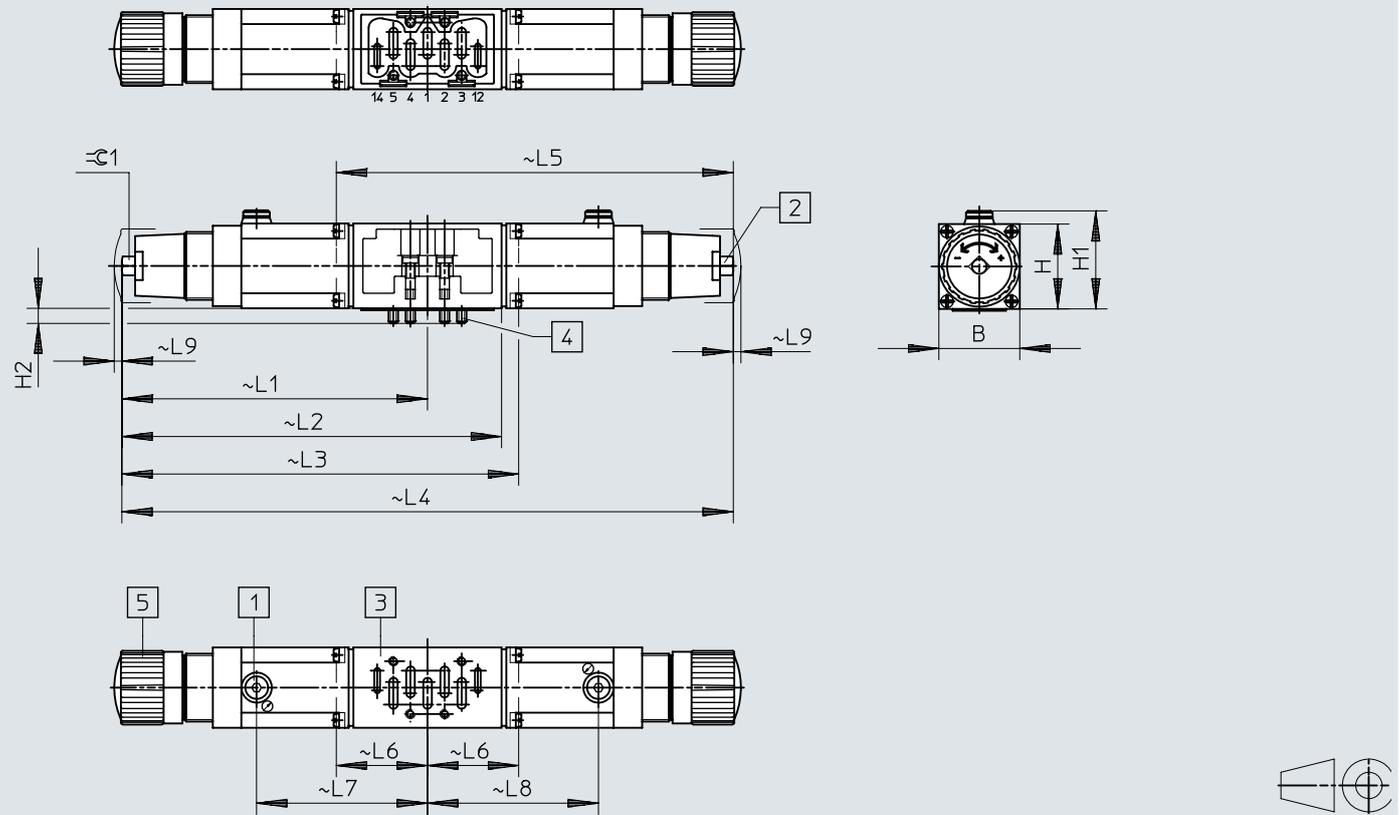
| Type | B1 | B2 | H1 | H2 | H3 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 | T1 |
|-------------------------------------|------|------|-----|-----|------|-------|-------|-------|-------|-------|-------|------|----|----|-----|-----|
| Regulator plate, width 42 mm | | | | | | | | | | | | | | | | |
| VABF-S1-1-R1... | 42.1 | 23.6 | 115 | 112 | 87.1 | - | 207.1 | - | 125.3 | - | - | 49.4 | 36 | 27 | 9 | 7.9 |
| VABF-S1-1-R2... | | | | | | - | - | 216.2 | 125.3 | - | - | | | | | |
| VABF-S1-1-R3... | | | | | | - | - | - | 125.3 | 150.3 | 216.1 | | | | | |
| VABF-S1-1-R4... | | | | | | 311.6 | - | - | - | - | - | | | | | |
| VABF-S1-1-R5... | | | | | | 311.6 | - | - | - | - | - | | | | | |
| VABF-S1-1-R6... | | | | | | - | - | 216.2 | 125.3 | - | - | | | | | |
| VABF-S1-1-R7... | | | | | | - | - | - | 125.3 | 150.3 | 216.1 | | | | | |
| Regulator plate, width 52 mm | | | | | | | | | | | | | | | | |
| VABF-S1-2-R1... | 54 | 23.6 | 182 | 167 | 94.4 | - | 250.2 | - | 152.2 | - | - | 49.4 | 48 | 38 | 12 | 10 |
| VABF-S1-2-R2... | | | | | | - | - | 264.2 | 152.2 | - | - | | | | | |
| VABF-S1-2-R3... | | | | | | - | - | - | 152.2 | 180.2 | 264.2 | | | | | |
| VABF-S1-2-R4... | | | | | | 380.4 | - | - | - | - | - | | | | | |
| VABF-S1-2-R5... | | | | | | 380.4 | - | - | - | - | - | | | | | |
| VABF-S1-2-R6... | | | | | | - | - | 264.2 | 152.2 | - | - | | | | | |
| VABF-S1-2-R7... | | | | | | - | - | - | 152.2 | 180.2 | 264.2 | | | | | |

Accessories

Dimensions

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LR-ZP-...-3



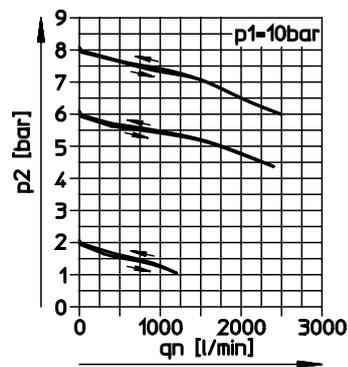
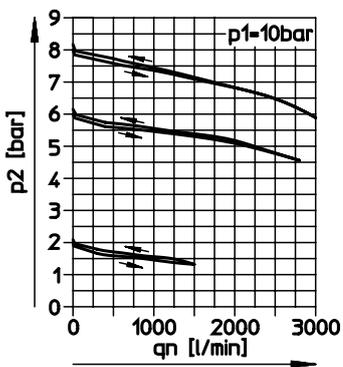
- [1] Pressure gauge connection G1/8
- [2] Adjusting screw
- [3] Hole pattern to ISO 5599-1
- [4] Captive retaining screws
- [5] Rotary knob

| Type | B | H | H1 | H2 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 |
|-------------------------------------|----|----|----|----|-------|-----|-----|-----|-----|------|-----|-----|
| Regulator plate, width 65 mm | | | | | | | | | | | | |
| LR-ZP-P-D-3 | 70 | 63 | 65 | 14 | 201.5 | - | 274 | - | - | - | 119 | - |
| LR-ZP-B-D-3 | | | | | 201.5 | - | - | - | 274 | 72.5 | - | 119 |
| LR-ZP-A-D-3 | | | | | 201.5 | - | - | 403 | - | - | 119 | 119 |
| LR-ZP-A/B-D-3 | | | | | 201.5 | 260 | - | - | - | - | 119 | - |

Flow rate q_n as a function of output pressure p_2

LR-ZP-A-D-3, LR-ZP-B-D-3, LR-ZP-A/B-D-3

LR-ZP-P-D-3



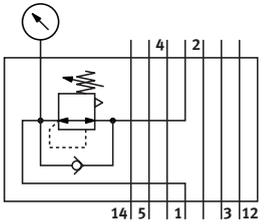
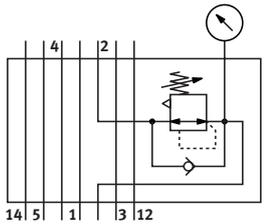
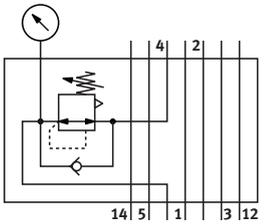
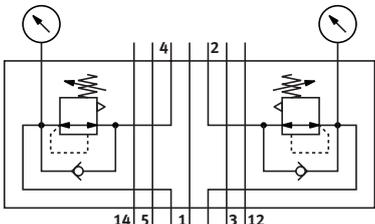
Accessories

| Ordering data | Regulated port | Regulator | Control range | Part no. | Type |
|-------------------------------------|---------------------|-----------|--|----------|---------------------|
| Regulator plate, width 42 mm | | | | | |
| | 1 | P | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 546817 | VABF-S1-1-R1C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 546818 | VABF-S1-1-R1C2-C-10 |
| | 2 | B | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 546821 | VABF-S1-1-R2C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 546822 | VABF-S1-1-R2C2-C-10 |
| | 2, reversible | B | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 546827 | VABF-S1-1-R6C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 546828 | VABF-S1-1-R6C2-C-10 |
| | 4 | A | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 546819 | VABF-S1-1-R3C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 546820 | VABF-S1-1-R3C2-C-10 |
| | 4, reversible | A | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 546829 | VABF-S1-1-R7C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 546830 | VABF-S1-1-R7C2-C-10 |
| | 2 and 4 | AB | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 546823 | VABF-S1-1-R4C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 546824 | VABF-S1-1-R4C2-C-10 |
| | 2 and 4, reversible | AB | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 546825 | VABF-S1-1-R5C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 546826 | VABF-S1-1-R5C2-C-10 |

Accessories

| Ordering data | Regulated port | Regulator | Control range | Part no. | Type |
|-------------------------------------|---------------------|-----------|--|----------|---------------------|
| Regulator plate, width 52 mm | | | | | |
| | 1 | P | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 555757 | VABF-S1-2-R1C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 555758 | VABF-S1-2-R1C2-C-10 |
| | 2 | B | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 555759 | VABF-S1-2-R2C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 555760 | VABF-S1-2-R2C2-C-10 |
| | 2, reversible | B | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 555767 | VABF-S1-2-R6C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 555768 | VABF-S1-2-R6C2-C-10 |
| | 4 | A | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 555761 | VABF-S1-2-R3C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 555762 | VABF-S1-2-R3C2-C-10 |
| | 4, reversible | A | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 555769 | VABF-S1-2-R7C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 555770 | VABF-S1-2-R7C2-C-10 |
| | 2 and 4 | AB | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 555763 | VABF-S1-2-R4C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 555764 | VABF-S1-2-R4C2-C-10 |
| | 2 and 4, reversible | AB | 0.05 ... 0.6 MPa 0.5 ... 6 bar 7.25 ... 87 psi | 555765 | VABF-S1-2-R5C2-C-6 |
| | | | 0.05 ... 1 MPa 0.5 ... 10 bar 7.25 ... 145 psi | 555766 | VABF-S1-2-R5C2-C-10 |

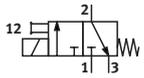
Accessories

| Ordering data | Regulated port | Regulator | Control range | Part no. | Type |
|---|----------------|-----------|----------------|----------|---------------|
| Regulator plate, width 65 mm | | | | | |
|  | 1 | P | 0 ... 12 bar | 35968 | LR-ZP-P-D-3 |
|  | 2 | B | 0.5 ... 12 bar | 35426 | LR-ZP-B-D-3 |
|  | 4 | A | 0.5 ... 12 bar | 35971 | LR-ZP-A-D-3 |
|  | 2, 4 | AB | 0.5 ... 12 bar | 35429 | LR-ZP-A/B-D-3 |

Ordering data – Accessories

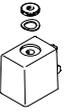
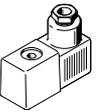
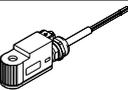
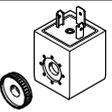
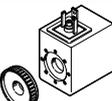
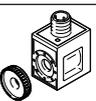
| | Width | Weight [g] | Part no. | Type |
|---|-------|------------|----------|--------------|
| Pressure gauge for intermediate pressure regulator plates LR-ZP | 65 mm | 64.5 | 345395 | MA-40-16-1/8 |

Ordering data

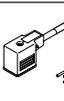
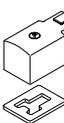
| Description | Cable length [m] | Part no. | Type |
|---|---|----------|------------------------------|
| Pilot valve for valves with 8 mm armature tube | | | |
|  Conforms to ISO 15218 | Manual override detenting, non-detenting | – | 8028540 VSCS-B-M32C-MD-WB-F8 |
| | Manual override with accessory detenting, non-detenting | – | 8028541 VSCS-B-M32C-MT-WB-F8 |
| | Manual override non-detenting | – | 8028539 VSCS-B-M32C-MH-WB-F8 |
| | Manual override concealed | – | 8028542 VSCS-B-M32C-M-WB-F8 |

– Note: This product conforms to ISO 1179-1 and ISO 228-1.

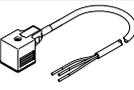
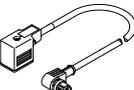
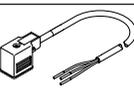
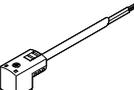
Accessories

| Ordering data | | Description | Cable length [m] | Part no. | Type |
|--|--|--|------------------|----------|-----------------------|
| Solenoid coil MSF | | | | | |
|  | Solenoid coil | 12 V DC | – | 34410 | MSFG-12-OD |
| | | 24 V DC and 42 V AC, 50 ... 60 Hz | – | 34411 | MSFG-24/42-50/60-OD |
| | | 42 V DC | – | 34413 | MSFG-42-OD |
| | | 24 V AC | – | 34415 | MSFW-24-5 0/60-OD |
| | | 48 V AC, 50 ... 60 Hz | – | 34418 | MSFW-48-5 0/60-OD |
| | | 110 V AC, 50 ... 60 Hz and 120 V AC, 60 Hz | – | 34420 | MSFW-110-5 0/60-OD |
| | | 230 V AC, 50 ... 60 Hz and 240 V AC, 60 Hz | – | 34422 | MSFW-230-5 0/60-OD |
| | | 240 V AC, 50 ... 60 Hz | – | 34424 | MSFW-240-5 0/60-OD |
|  | Solenoid coil with socket MSSD | 12 V DC | – | 4526 | MSFG-12 |
| | | 24 V DC and 42 V AC, 50 ... 60 Hz | – | 4527 | MSFG-2 4/42-5 0/60 |
| | | 24 V AC | – | 4534 | MSFW-24-5 0/60 |
| | | 110 V AC, 50 ... 60 Hz and 120 V AC, 60 Hz | – | 6720 | MSFW-110-5 0/60 |
| | | 230 V AC, 50 ... 60 Hz and 240 V AC, 60 Hz | – | 4540 | MSFW-230-5 0/60 |
|  | Solenoid coil for ATEX environment | 24 V DC | 1 | 8059804 | VACF-B-K1-1-1-EX4-M |
| | | | 5 | 8059805 | VACF-B-K1-1-5-EX4-M |
| | | 24 V AC, 50 ... 60 Hz | 1 | 8059808 | VACF-B-K1-1A-1-EX4-M |
| | | | 5 | 8059812 | VACF-B-K1-16B-5-EX4-M |
| | | 110 V AC, 50 ... 60 Hz | 1 | 8059811 | VACF-B-K1-16B-1-EX4-M |
| | | | 5 | 8059812 | VACF-B-K1-16B-5-EX4-M |
| | | 230 V AC, 50 ... 60 Hz | 1 | 8059809 | VACF-B-K1-3A-1-EX4-M |
| 5 | 8059810 | VACF-B-K1-3A-5-EX4-M | | | |
| Solenoid coil MSN1 | | | | | |
|  | Solenoid coil | 24 V DC | – | 123060 | MSN1G-24DC-OD |
| | | 12 V DC and 24 V AC, 50 ... 60 Hz | – | 170152 | MSN1W-24AC/12DC |
| | | 110 V AC, 50 ... 60 Hz | – | 123061 | MSN1W-110AC-OD |
| | | 230 V AC, 50 ... 60 Hz | – | 123062 | MSN1W-230AC-OD |
| Solenoid coils for valves with armature tube 8 mm | | | | | |
|  | Plug pattern to EN 175301-803, type A | 12 V DC | – | 8030821 | VACF-A-A1-5 |
| | | 24 V DC | – | 8030822 | VACF-A-A1-1 |
| | | 48 V DC | – | 8030823 | VACF-A-A1-7 |
| | | 24 V AC | – | 8030824 | VACF-A-A1-1A |
| | | 48 V AC | – | 8030825 | VACF-A-A1-7A |
| | | 110/120 V AC | – | 8030826 | VACF-A-A1-16B |
| | | 230/240 V AC | – | 8030828 | VACF-A-A1-3W |
|  | Plug pattern to industry standard type B (11 mm) | 12 V DC | – | 8030801 | VACF-B-B2-5 |
| | | 24 V DC | – | 8030802 | VACF-B-B2-1 |
| | | 48 V DC | – | 8030803 | VACF-B-B2-7 |
| | | 24 V AC | – | 8030804 | VACF-B-B2-1A |
| | | 48 V AC | – | 8030805 | VACF-B-B2-7A |
| | | 110/120 V AC | – | 8030806 | VACF-B-B2-16B |
| | | 230/240 V AC | – | 8030808 | VACF-B-B2-3W |
|  | Plug pattern to EN 175301-803, type C | 12 V DC | – | 8030810 | VACF-B-C1-5 |
| | | 24 V DC | – | 8030811 | VACF-B-C1-1 |
| | | 48 V DC | – | 8030812 | VACF-B-C1-7 |
| | | 24 V AC | – | 8030813 | VACF-B-C1-1A |
| | | 48 V AC | – | 8030814 | VACF-B-C1-7A |
| | | 110/120 V AC | – | 8030815 | VACF-B-C1-16B |
| | | 230/240 V AC | – | 8030817 | VACF-B-C1-3W |
|  | Plug M12x1, A-coded to EN 61076-2-101, 2-pin | 24 V DC: 3.4 W | – | 8150876 | VACF-B-R3-1L |
| | | 24VDC: LV1.2: HV3.3 | – | 8150873 | VACF-B-R3-1RAL |
| | Plug M12x1 A-coded according to EN 61076-2-101 4-pin, assignment according to DESINA | 24 V DC: 3.4 W | – | 8150877 | VACF-B-R4-1L |
| | | 24VDC: LV1.2: HV3.3 | – | 8150880 | VACF-B-R4-1RAL |

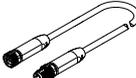
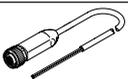
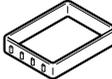
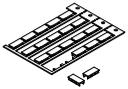
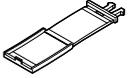
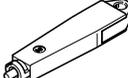
Accessories

| Ordering data | | | | | | |
|---|---|----------------------|----------------------------|------------------|---------------|----------------------------|
| | Description | | | Cable length [m] | Part no. | Type |
| Electrical accessories for solenoid coil MSF | | | | | | |
|  | Angled socket | Screw terminal | Cable fitting Pg9 | – | 34431 | MSSD-F |
| | | | Cable connector M16 | – | 59710 | MSSD-F-M16 |
|  | PUR cable sheath, connection technology M12x1 A-coded | 24 AC/DC | • Signal status indication | 0.3 | 3679773 | NEBV-B2W3F-P-K-0.3-N-M12W3 |
| | | | • Protective circuit | 0.6 | 3679774 | NEBV-B2W3F-P-K-0.6-N-M12W3 |
| | | 110 AC/DC | – | 0.3 | 3579463 | NEBV-B2W3-K-0.3-N-M12W3 |
| | | | – | 0.6 | 3579464 | NEBV-B2W3-K-0.6-N-M12W3 |
|  | PUR cable sheath | 24 AC/DC | • Signal status indication | 0.6 | 3679778 | NEBV-B2W3F-P-K-0.6-N-LE3 |
| | | 230 AC/DC | – | | | |
| | PVC cable sheath | 24 V DC | Signal status indication | 2.5 | 30935 | KMF-1-24DC-2.5-LED |
| | | | | 5 | 30937 | KMF-1-24DC-5-LED |
| | | | | 10 | 193458 | KMF-1-24DC-10-LED |
| | | 230 V AC | – | 2.5 | 30936 | KMF-1-230AC-2.5 |
| | | | 5 | 30938 | KMF-1-230AC-5 | |
|  | Illuminating seal | 12 ... 24 V DC | Signal status indication | – | 19143 | MF-LD-12-24DC |
| | | 230 V DC/V AC | Signal status indication | – | 19144 | MF-LD-230AC |
| Electrical accessories for solenoid coils MSN1 and MD | | | | | | |
|  | Angled socket | Screw terminal | Cable fitting Pg9 | – | 34583 | MSSD-C |
| | | | Cable connector M16 | – | 539709 | MSSD-C-M16 |
|  | PUR cable sheath, connection technology M12x1 A-coded | 24 AC/DC | • Signal status indication | 0.3 | 3679771 | NEBV-A1W3F-P-K-0.3-N-M12W3 |
| | | | • Protective circuit | 0.6 | 3679772 | NEBV-A1W3F-P-K-0.6-N-M12W3 |
| | | 110 AC/DC | – | 0.3 | 3579461 | NEBV-A1W3-K-0.3-N-M12W3 |
| | | | – | 0.6 | 3579462 | NEBV-A1W3-K-0.6-N-M12W3 |
|  | PUR cable sheath | 24 AC/DC | • Signal status indication | 0.6 | 3679776 | NEBV-A1W3F-P-K-0.6-N-LE3 |
| | | 230 AC/DC | – | | | |
| | PVC cable sheath | 24 V DC | Signal status indication | 2.5 | 30931 | KMC-1-24DC-2.5-LED |
| | | | | 5 | 30933 | KMC-1-24DC-5-LED |
| | | | | 10 | 193459 | KMC-1-24DC-10-LED |
| | | 230 V AC | – | 2.5 | 30932 | KMC-1-230AC-2.5 |
| | | | 5 | 30934 | KMC-1-230AC-5 | |
|  | Illuminating seal | 12 ... 24 V DC | Signal status indication | – | 19145 | MC-LD-12-24DC |
| | | 230 V DC/V AC | Signal status indication | – | 19146 | MC-LD-230AC |
| Electrical accessories for valves with square plug type B to industry standard | | | | | | |
|  | Angled socket | With screw terminals | Cable fitting Pg9 | – | 34431 | MSSD-F |
| | | | Cable connector M16 | – | 539710 | MSSD-F-M16 |
|  | PVC cable sheath | 24 V DC | Signal status indication | 2.5 m | 30935 | KMF-1-24DC-2.5-LED |
| | | | | 5 m | 30937 | KMF-1-24DC-5-LED |
| | | | | 10 m | 193458 | KMF-1-24-10-LED |
|  | Illuminating seal | 24 V DC | Signal status indication | – | 19143 | MF-LD-12-24DC |

Accessories

| Ordering data | | | | | | |
|---|---|----------------|--|------------------|-------------------|------------------------------|
| | Description | | | Cable length [m] | Part no. | Type |
| Electrical accessories for electrical connection Type A according to EN 175301-803 | | | | | | |
|  | Angled socket | Screw terminal | Cable fitting Pg9 | – | 34583 | MSSD-C |
| | | | Cable connector M16 | – | 539709 | MSSD-C-M16 |
| | | | Cable connector M20x1.5 | – | 550067 | MSSD-N |
|  | PUR cable sheath, connection technology M12x1 A-coded | 24 AC/DC | • Signal status indication | 0.3 | 3679771 | NEBV-A1W3F-P-K-0.3-N-M12W3 |
| | | | • Protective circuit | 0.6 | 3679772 | NEBV-A1W3F-P-K-0.6-N-M12W3 |
| | | 110 AC/DC | – | 0.3 | 3579461 | NEBV-A1W3-K-0.3-N-M12W3 |
| | | | – | 0.6 | 3579462 | NEBV-A1W3-K-0.6-N-M12W3 |
|  | PUR cable sheath | 24 AC/DC | • Signal status indication | 0.6 | 3679776 | NEBV-A1W3F-P-K-0.6-N-LE3 |
| | | | • Protective circuit | | | |
| | PVC cable sheath | 24 V DC | – | 0.6 | 3579466 | NEBV-A1W3-K-0.6-N-LE3 |
| | | | Signal status indication | 2.5 | 30931 | KMC-1-24DC-2.5-LED |
| | | | – | 5 | 30933 | KMC-1-24DC-5-LED |
| | | – | 10 | 193459 | KMC-1-24DC-10-LED | |
| | | 230 V AC | – | 2.5 | 30932 | KMC-1-230AC-2.5 |
| – | 5 | | 30934 | KMC-1-230AC-5 | | |
|  | Illuminating seal | 12 ... 24 V DC | Signal status indication | – | 19145 | MC-LD-12-24DC |
| | | 230 V DC/V AC | Signal status indication | – | 19146 | MC-LD-230AC |
| Electrical accessories for electrical connection Type B | | | | | | |
|  | Angled socket | Screw terminal | Cable fitting Pg9 | – | 34431 | MSSD-F |
| | | | Cable connector M16 | – | 59710 | MSSD-F-M16 |
|  | PUR cable sheath, connection technology M12x1 A-coded | 24 AC/DC | • Signal status indication | 0.3 | 3679773 | NEBV-B2W3F-P-K-0.3-N-M12W3 |
| | | | • Protective circuit | 0.6 | 3679774 | NEBV-B2W3F-P-K-0.6-N-M12W3 |
| | | 110 AC/DC | – | 0.3 | 3579463 | NEBV-B2W3-K-0.3-N-M12W3 |
| | | | – | 0.6 | 3579464 | NEBV-B2W3-K-0.6-N-M12W3 |
|  | PUR cable sheath | 24 AC/DC | • Signal status indication | 0.6 | 3679778 | NEBV-B2W3F-P-K-0.6-N-LE3 |
| | | | • Protective circuit | | | |
| | PVC cable sheath | 24 V DC | – | 0.6 | 3579468 | NEBV-B2W3-K-0.6-N-LE3 |
| | | | Signal status indication | 2.5 | 30935 | KMF-1-24DC-2.5-LED |
| | | | – | 5 | 30937 | KMF-1-24DC-5-LED |
| | | – | 10 | 193458 | KMF-1-24DC-10-LED | |
| | | 230 V AC | – | 2.5 | 30936 | KMF-1-230AC-2.5 |
| – | 5 | | 30938 | KMF-1-230AC-5 | | |
|  | Illuminating seal | 12 ... 24 V DC | Signal status indication | – | 19143 | MF-LD-12-24DC |
| | | 230 V DC/V AC | Signal status indication | – | 19144 | MF-LD-230AC |
| Electrical accessories for electrical connection Type C according to EN 175301-803 | | | | | | |
|  | Angled socket | 0 ... 30 V DC | Cable connector M12 | – | 570367 | MSSD-EB-M12-24VDC-SD-EX |
| | | 0 ... 300 V DC | Cable connector Pg7 | – | 151687 | MSSD-EB |
| | | – | Cable connector M12 | – | 539712 | MSSD-EB-M12 |
|  | PVC cable sheath | 24 V DC | • Signal status indication • Protective circuit | 2.5 m | 8032623 | NEBV-C1SW2L-P-K-2.5-N-LE2-S9 |
| | | | | 5 m | 8032626 | NEBV-C1SW2L-P-K-5-N-LE2-S9 |
| | | | | 10 m | 8032627 | NEBV-C1SW2L-P-K-10-N-LE2-S9 |
| | | 230 V DC/V AC | Signal status indication | 2.5 m | 8032628 | NEBV-C1SW3-K-2.5-N-LE3-S9 |
| | | | | 5 m | 8032629 | NEBV-C1SW3-K-5-N-LE3-S9 |

Accessories

| Ordering data | | Description | Part no. | Type | |
|---|--|---|--------------|------------------------|----------------|
| Electrical accessories for valves with central plug | | | | | |
|  | Angled socket, M12x1 A-coded according to EN 61076-2-101, 4-pin, screw terminal | | 8162292 | NECB-M12W4-C2 | |
|  | Modular system for a choice of connecting cables → Internet: neba | 0.1 ... 20 m | 8078221 | NEBA-... | |
|  | Straight socket, M12x1, 5-pin Open end, 4-core | 2.5 m | 8078239 | NEBA-M12G5-U-2.5-N-LE4 | |
| | | 5 m | 8078240 | NEBA-M12G5-U-5-N-LE4 | |
|  | Angled socket, M12x1, 5-pin Open end, 4-core | 2.5 m | 8078248 | NEBA-M12W5-U-2.5-N-LE4 | |
| | | 5 m | 8078249 | NEBA-M12W5-U-5-N-LE4 | |
| Pressure gauge | | | | | |
|  | With cartridge connector, for pressure regulator | Display range 0 ... 16 bar | 543487 | PAGN-26-16-P10 | |
| | | Display range 0 ... 10 bar | 543488 | PAGN-26-10-P10 | |
| Seal | | | | | |
|  | Enables the valves with central plug M12, 3-pin, to be mounted on the sub-bases of the valve terminal VTS/VTSA-F | | 571343 | VABD-S2-1-S-C | |
| Inscription label | | | | | |
|  | Inscription labels | 6x10 mm | Labelling 64 | 18576 | IBS-6X10 |
| | Inscription label for valves | 17x9 mm | Labelling 24 | 161937 | IBS-9x17 |
|  | Inscription label for manifold sub-bases | | Pack size 5 | 8037164 | ASCF-M-S1 |
|  | Clip-on inscription label holder for valve cap, for valves with central plug M12, 3-pin | | | 540888 | ASCF-T-S6 |
|  | Inscription label holders for inscription labels 6x10 mm, for valves | | Pack size 10 | 561109 | VMPAL-ST-AP-10 |
| Manual override | | | | | |
|  | For manual override, non-detenting or covered | For valves with square plug type B to industry standard | 8049538 | VAMC-B10-20-CH2-S | |
|  | Cover cap for manual override, non-detenting | For valves with central plug M12, 3-pin | 541010 | VAMC-S6-CH | |
|  | Cover cap for manual override, concealed | For valves with central plug M12, 3-pin | 541011 | VAMC-S6-CS | |
|  | Heavy-duty cover cap for manual override, non-detenting, detenting via accessory | For valves with central plug M12, 3-pin | 4105147 | VAMC-B-S6-CTR | |
|  | Tool for manual override | For MN1H/MFH valves | 157651 | AHB-MD/MF/MV | |
| | | For heavy-duty cover cap, detenting position | 1662543 | AHB-MEB-B | |