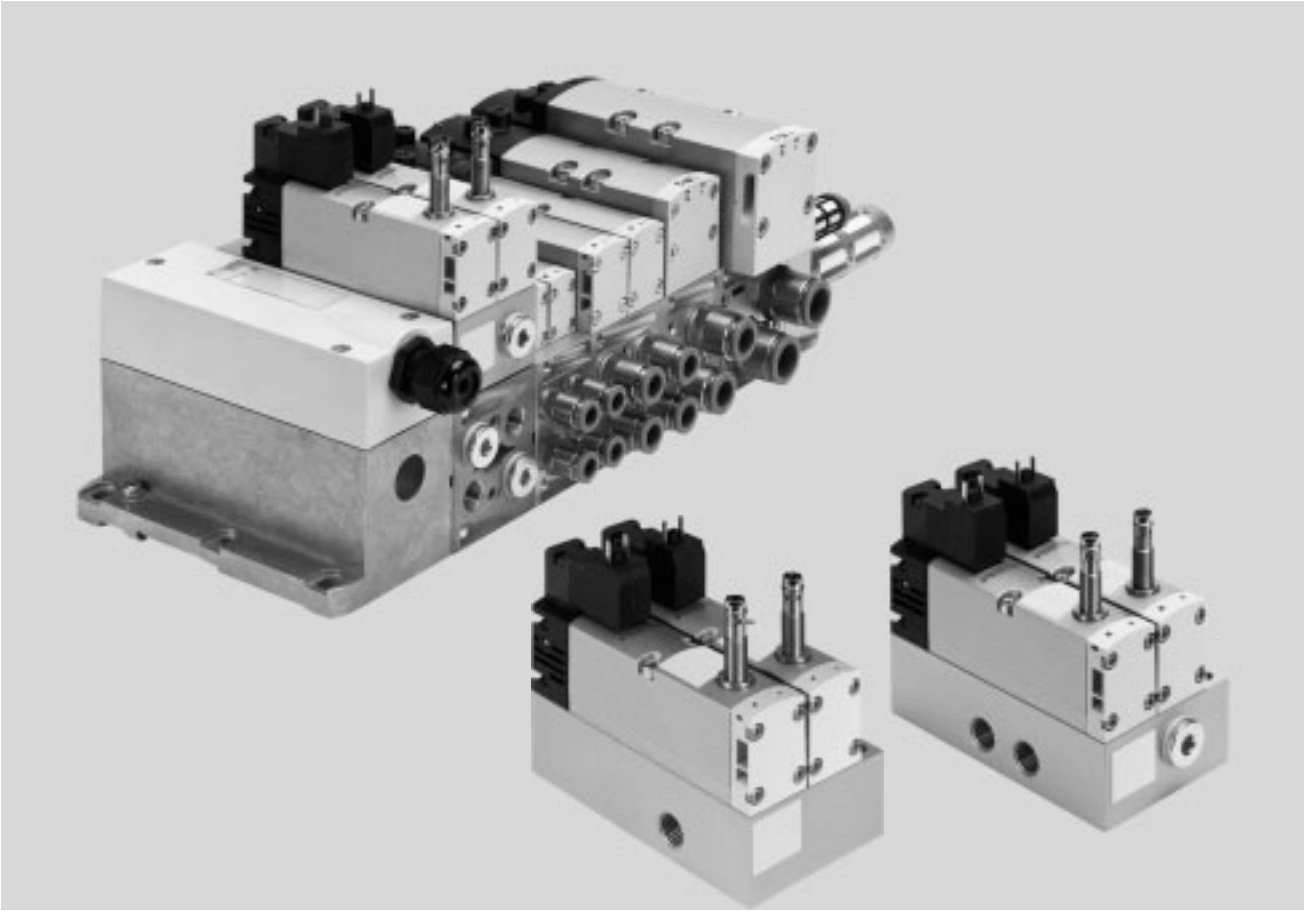
# Control block VOFA with safety function

FESTO

# Control block VOFA with safety function

Key features



**Innovative**

- Can be used for safe reversing of a hazardous movement (5/2-way solenoid valve)
- Can be used for safe venting (3/2-way solenoid valve function, not available as a variant for installation on a valve terminal)
- Purely mechanical solution as a press safety valve, without integrated diagnostics

**Versatile**

- Control block can be selected as version for valve terminal VTSA/ VTSA-F
- Control block can be selected as individual pneumatic connection
- High pressure range of 3 ... 10 bar
- Flow rates of up to 1,050 l/min

**Reliable**

- Sturdy and durable metal components
- Designed as a purely mechanical solution with regard to safety

**Easy to assemble**

- Unit assembled and inspected, ready for installation
- Reduced outlay on selection, ordering, installation and commissioning
- Mounting via through-hole (with individual pneumatic connection)
- Mounting as vertical stacking elements on manifold sub-base of the valve terminal

Note

The control block with safety function VOFA must not be modified by the customer without authorisation as this invalidates the IFA approval certificate.
The IFA certificate is linked to the checked safety function of the component.

# Control block VOFA with safety function

Key features

## Description

The control block is designed for two-channel actuation of pneumatic drive components such as double-acting cylinders, and can be used to realise the following safety measures:

- Protection against unexpected start-up (EN 1037)
- Reversing hazardous movements, provided the reversing movement will not lead to any further hazards (5/2-way valve, single solenoid)
- Safe venting (with 3/2-way valve function in normally closed position)

The control attributes of the control block enable Performance Level e (up to Category 4, corresponds to the highest risk level) to be achieved for the safety measures. The Performance Level (PL) is a measure of the reliability of a safety function.
The control block has been developed and manufactured in accordance with the basic and proven safety principles of EN ISO 13849-1 and EN ISO 13849-2.

The requirements of EN ISO 13849-1 and EN ISO 13849-2 (e.g. CCF, DC) must be taken into consideration for implementation and operation of the component and for use in higher categories (2 to 4).
When using this product in machines or systems subject to specific C standards, the requirements specified in these standards must be observed.

The control block with safety function is designed for installation in machines and automation systems and must only be used in industrial applications (high-demand mode).
The control block with safety function is suitable for use as a press safety valve to EN 692.

Further information and technical data in the Support Portal
➔ Internet: safety-related guidelines

## Pneumatic/electrical interlinking

Function

The safety function is achieved through two-channel pneumatic interlinking of two 5/2-way single solenoid valves, width 26 mm, within the control block:

- Port 4 is only pressurised if both solenoid valves are in switching position.
- Port 2 is always pressurised if at least one of the two solenoid valves is in normal position. The valve is reset via a mechanical spring.

The switching operation of the solenoid valves can be sensed by a proximity sensor on the solenoid valves (switching position sensing). This is done by comparing a logic operation of the control signal and the signal change of the proximity sensor to check whether the piston spools of the solenoid valves achieve the expected position.

The piston spools of the solenoid valves are designed so that pneumatic short circuits between ports 2 and 4 are ruled out (freedom from overlap).

The two solenoid valves must be actuated via two separate channels to achieve the desired Category 4 (Performance Level e, to EN ISO 13849-1).

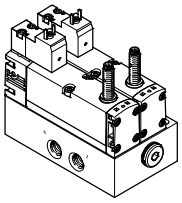
The valves used are always 5/2-way solenoid valves with switching position sensing.

# Control block VOFA with safety function

Key features

**Version**

Decentralised individual connection variant, VOFA-L26-T52-...

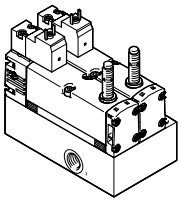


With the decentralised individual connection variant, the electrical connection for the control block is established as an individual connection to ISO 15407-1. The pneumatic connection is also established as an individual connection. With this variant, the two 5/2-way solenoid valves are pneumatically interlinked via two channels by means of the individual sub-base.

The electrical connection for the solenoid valves is established separately via a standardised square plug to EN 175301-803, type C.

The inductive sensor for switching position sensing is electrically connected using a push-in connector M8x1 to EN 61076-2-104.

Decentralised individual connection variant, VOFA-L26-T32C-...

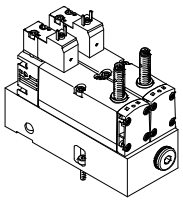


The function as a 3/2-way solenoid valve, normally closed, is intended for use for safe venting.

- Note

The 3/2-way solenoid valve function is only available as a decentralised individual connection variant (VOFA-L26-...).

Version for valve terminal VTSA/VTSA-F, VOFA-B26-T52-...



With the version of the control block for valve terminal VTSA/VTSA-F, the valves are actuated separately from the valve terminal via an individual electrical connection.
The pneumatic connection is established via the valve terminal VTSA/VTSA-F.

With the variant for valve terminals, the two 5/2-way solenoid valves are pneumatically interlinked via two channels by means of an intermediate plate as vertical stacking element.

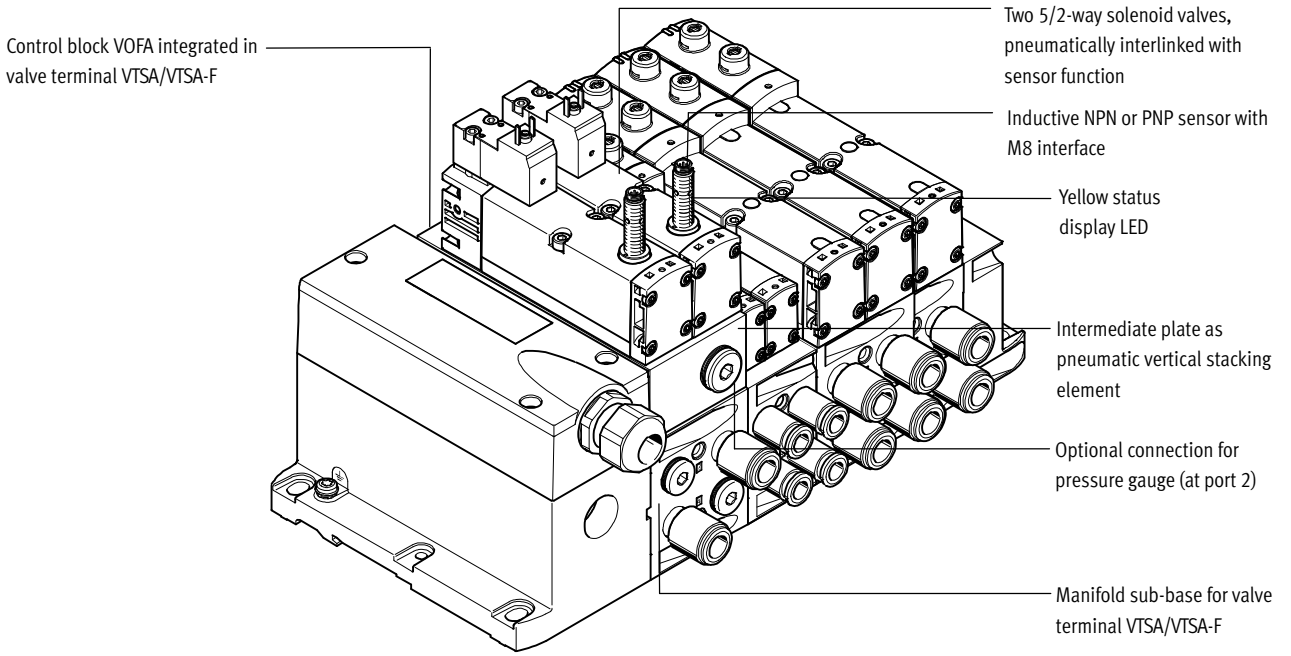
The electrical connection for the solenoid valves is established separately via a standardised square plug to EN 175301-803, type C.
The inductive sensor for switching position sensing is electrically connected using a push-in connector M8x1 to EN 61076-2-104.

- Note

The appropriate manifold sub-base VABV-S4- ..., which is required for integration into the valve terminal, is not part of the control block. It is automatically allocated by the configurator on selection of the control block.

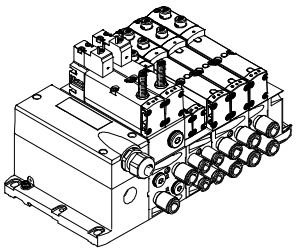
# Control block VOFA with safety function

Key features




**Equipment options**

Control block, version for valve terminal VTSA/VTSA-F, VOFA-B26-T52-...



Two 5/2-way solenoid valves, single solenoid, connected in series, interlinked via two channels
- Mechanical spring
- Switching position sensing via inductive sensors with PNP or NPN output

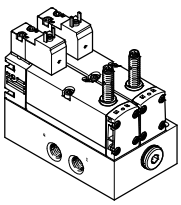
Application:
- Protection against unexpected start-up to EN 1037
- Safe reversing
- Drives in manually loaded devices

Note

The 3/2-way solenoid valve function is not suitable for vertical stacking (on valve terminals).

Control block as decentralised individual connection variant

VOFA-L26-T52-...



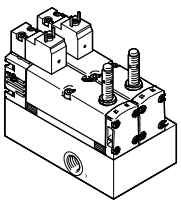
Two 5/2-way valves, single solenoid, connected in series, interlinked via two channels
- Mechanical spring
- Switching position sensing via inductive sensors with PNP or NPN output

Application:
- Protection against unexpected start-up to EN 1037
- Safe reversing (VOFA-L26-T52-... )
- Safe venting (VOFA-L26-T32C-... , 3/2-way solenoid valve function)
- Drives in manually loaded devices

Note

The control block with safety function VOFA must not be modified by the customer without authorisation as this invalidates the IFA approval certificate.
The IFA certificate is linked to the checked safety function of the component.

VOFA-L26-T32C-...



# Control block VOFA with safety function

Key features

## Special features

### Control block for valve terminal VTSA/VTSA-F

**Electrical connection**

- Electrical connection to EN 175301-803, type C (square plug)
- 3-pin sensor push-in connector M8

**Pneumatic connection**

- Via valve terminal VTSA/VTSA-F
- Pilot air supply via valve terminal
- Interlinked via two channels by way of vertical stacking as intermediate plate

### Control block as decentralised individual connection variant

**Electrical connection**

- Electrical connection to EN 175301-803, type C (square plug)
- 3-pin sensor push-in connector M8

**Pneumatic connection**

- Individual pneumatic connection
- Internal pilot air supply
- Interlinked via two channels by way of individual sub-base

### Applications

This control block is suitable for use as a press safety valve to EN 692.

This valve is a safety device in accordance with the Machinery Directive 2006/42/EC.

The 3/2 way solenoid valve version (VOFA-L26-T32C-...) is intended for safe venting.

The version for valve terminal VTSA/VTSA-F and the version as individual connection variant VOFA-L26-T52-... are intended for safe reversing of a hazardous movement.

## Valve terminal configurator

➔ Internet: www.festo.com

A valve terminal configurator is available to help you select a suitable valve terminal VTSA/VTSA-F.
The control block VOFA for the valve terminal is ordered using this valve terminal configurator.
This makes it much easier to order the right product.

The valve terminals are fully assembled according to your order specification and are individually checked. This reduces assembly and installation time to a minimum.

You can order a control block VOFA for the valve terminal VTSA using the order code:

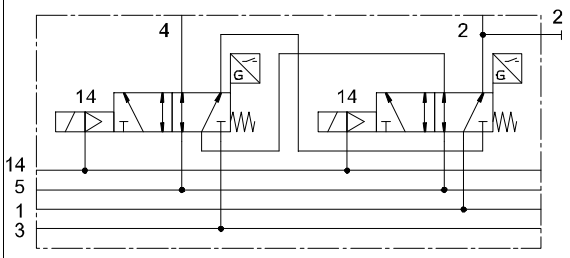
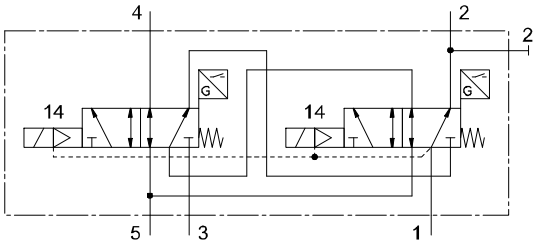
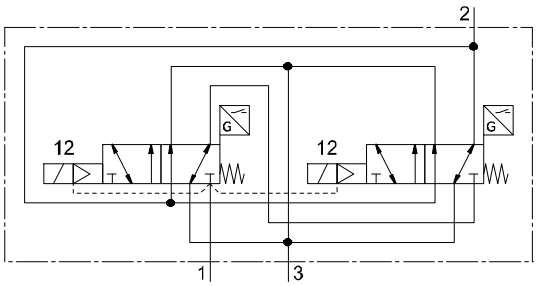
Ordering system for VTSA
➔ Internet: vtsa

You can order a control block VOFA for the valve terminal VTSA-F using the order code:

Ordering system for VTSA-F
➔ Internet: vtsa-f

# Control block VOFA with safety function

Key features

| Valve function | |
|---|---|
| Circuit symbol[1)] | Description |
|  | Control block VOFA-B26-T52-...<br>As version for valve terminal VTSA/VTSA-F with 2x 5/2-way valve, single solenoid<br>• Pneumatic connection via valve terminal<br>• Mechanical spring return<br>• With NPN sensor (code SN) or PNP sensor (code SP)<br>• Fulfils the safety function<br>– Safe reversing<br>– Protection against unexpected start-up (EN 1037) |
|  | Control block VOFA-L26-T52-...<br>As decentralised individual connection variant with 2x 5/2-way valve, single solenoid<br>• As individual pneumatic connection<br>• Mechanical spring return<br>• With NPN or PNP sensor<br>• Fulfils the safety function<br>– Safe reversing<br>– Protection against unexpected start-up (EN 1037) |
|  | Control block VOFA-L26-T32C-...<br>As decentralised individual connection variant with 3/2-way solenoid valve function, normally closed (the two valves are pneumatically interlinked by means of the individual sub-base)<br>• As individual pneumatic connection<br>• Mechanical spring return<br>• With NPN or PNP sensor<br>• Fulfils the safety function<br>– Safe venting<br>– Protection against unexpected start-up (EN 1037) |

1) The symbol represents a valve with a proximity sensor with a switching output signal, in the illustration an N/O contact. In accordance with ISO 1219-1, this symbol applies to both N/O contacts and N/C contacts. The switching element function of all sensors used here is an N/C contact.

Note

- The 2x 5/2-way solenoid valves each have their own electrical connection.
- The 2x 5/2-way solenoid valves are pneumatically interlinked via two channels by means of an individual sub-base/ intermediate plate.
- The output of the interlinked 2x 5/2-way solenoid valves is only switched if both valves are in switching position.

# Control block VOFA with safety function

Technical data

| Safety-related characteristics | | | | |
|---|---|---|---|---|
| Control block | | VOFA-L26-T52-... | VOFA-L26-T32C-... | VOFA-B26-T52-... on valve terminal |
| Conforms to | | EN 13849-1 | | |
| Safety function | | Security against manipulation, protection against unexpected start-up | | |
| | | Reversing of a movement | Exhausting | Reversing of a movement |
| Performance Level (PL) | | Security against manipulation, protection against unexpected start-up (up to Category 4, Performance Level e) | | |
| | | Reversing of a movement (up to Category 4, Performance Level e) | Exhausting (up to Category 4, Performance Level e) | Reversing of a movement (up to Category 4, Performance Level e) |
| Note on forced checking procedure | | Switching frequency at least 1/week | | |
| Certificate issuing authority | | IFA 1001179 | IFA 1204006 | IFA 1001179 |
| CE marking (see declaration of conformity) | | To EU Machinery Directive | | |
| | | To EU EMC Directive[1)] | | |
| Max. positive test pulse with 0 signal[2)] | [µs] | 1,000 | | |
| Max. negative test pulse with 1 signal[2)] | [µs] | 800 | | |
| Shock resistance[2)] | | Shock test with severity level 2, to EN 60068-2-27 | | |
| Vibration resistance[2)] | | Transport application test with severity level 2, to EN 60068-2-6 | | |

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

| General technical data | | | | |
|---|---|---|---|---|
| Control block | | VOFA-L26-T52-... | VOFA-L26-T32C-... | VOFA-B26-T52-... on valve terminal |
| Design | | Piston spool valve | | |
| Standard nominal flow rate | [l/min] | 950 | 1,050 | 830 |
| Standard flow rate Exhaust from 6 ⇢ 0 bar[1)] | [l/min] | – | 2,650 | – |
| Standard flow rate Exhaust 6 ⇢ 0 bar in a fault situation[1),2)] | [l/min] | – | 1,050 | – |
| Reset method | | Mechanical spring | | |
| Sealing principle | | Soft | | |
| Exhaust function | | With flow control | | |
| Actuation type | | Electric | | |
| Non-overlapping | | Yes | | |
| Type of control | | Piloted | | |
| Direction of flow | | Non-reversible | | |
| Exhaust function | | With flow control | | |
| Suitability for vacuum | | – | | |
| Pilot air supply | | Internal | | Via valve terminal |
| Type of mounting | | Via through-hole, on manifold sub-base | | |
| Mounting position | | Any | | |
| Manual override | | – | | |
| Valve signal status display | | Via accessories | | |
| | | | | |
| Pneumatic connections | | | | |
| Supply | 1 | G¼ | G¼ | Via the manifold sub-base of the valve terminal |
| Exhaust | 3/5 | G¼ | G¼ (only 3) | |
| Working lines | 2/4 | G¼ | G¼ (only 2) | |
| Pilot air supply | 14 | – | – | |
| Pressure gauge | | G¼ | – | G¼ |

1) Measured in the exhaust direction (2➝3), P= 6 bar measured with respect to atmosphere using a silencer UO-1/4.
2) A fault situation means: one of the two directional control valves does not completely switch back.

# Control block VOFA with safety function

Technical data

| Operating and environmental conditions | | | | | |
|---|---|---|---|---|---|
| Control block | | | VOFA-L26-T52-... | VOFA-L26-T32C-... | VOFA-B26-T52-... on valve terminal |
| 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 about the operating/pilot medium | | | Lubricated operation possible (required during subsequent operation) | | |
| Operating pressure | | [bar] | 3 ... 10 | | 0 ... 10 |
| Operating pressure for valve terminal with internal pilot air supply | | [bar] | – | | 3 ... 10 |
| Pilot pressure | | [bar] | 3 ... 10 | | |
| Noise level LpA | | [dB(A)] | 85 | | |
| Ambient temperature | | [°C] | –5 ... +50 | | |
| Temperature of medium | | [°C] | –5 ... +50 | | |
| Corrosion resistance class CRC | | | 0 | | |

| Electrical data – Control block | | | | | |
|---|---|---|---|---|---|
| Control block | | | VOFA-L26-T52-... | VOFA-L26-T32C-... | VOFA-B26-T52-... on valve terminal |
| Electrical connection | | | Plug to EN 175301-803, type C, without protective earth conductor | | |
| Nominal operating voltage | | [V DC] | 24 | | |
| Permissible voltage fluctuations | | [%] | –15/+10 | | |
| Surge resistance | | [kV] | 2.5 | | |
| Degree of contamination | | | 3 | | |
| Power consumption | | [W] | 1.8 | | |
| Max. magnetic disruption field | | [mT] | 60 | | |
| Piston position sensing | | | Normal position via sensor | | |
| Switching position display | | | With accessories | | |
| Duty cycle | | [%] | 100 | | |
| Protection class to EN 60529 | | | IP65, NEMA 4 (for all types of signal transmission in assembled state) | | |
| Protection against direct and indirect contact | | | PELV (Protective Extra-Low Voltage)<br>Protected to EN 60950/IEC 950 | | |
| Valve switching time | On | [ms] | 22 | 24 | 22 |
| | Off | [ms] | 56 | 54 | 59 |
| Valve sensor switching time[1)] | On | [ms] | 60 | 58 | 60 |
| | Off | [ms] | 11 | 11 | 11 |

1) Valve sensor switching time off: period of time from coil being energised to sensor being switched off when using a PNP sensor.
Valve sensor switching time on: period of time from coil being de-energised to 0-L edge at the sensor when using a PNP sensor.

- Note

With a duty cycle of 100%, the control block must be de-energised once a week.

| Electrical data – Sensor (to EN-60947-5-2) | | |
|---|---|---|
| Electrical connection | | Cable, 3-wire |
| | | Plug M8x1, 3-pin |
| Cable length | [m] | 2.5 |
| Switching output | | PNP or NPN |
| Switching element function | | N/C contact |
| Signal status display | | Yellow LED |
| Operating voltage range | [V DC] | 10 … 30 |
| Residual ripple | [%] | ±10 |
| Sensor idle current | [mA] | Max. 10 |
| Max. output current | [mA] | 200 |
| Voltage drop | [V] | Max. 2 |
| Max. switching frequency | [Hz] | 5,000 |
| Protection against short circuit | | Pulsed |
| Protection against polarity reversal for sensor | | For all electrical connections |
| Measuring principle | | Inductive |

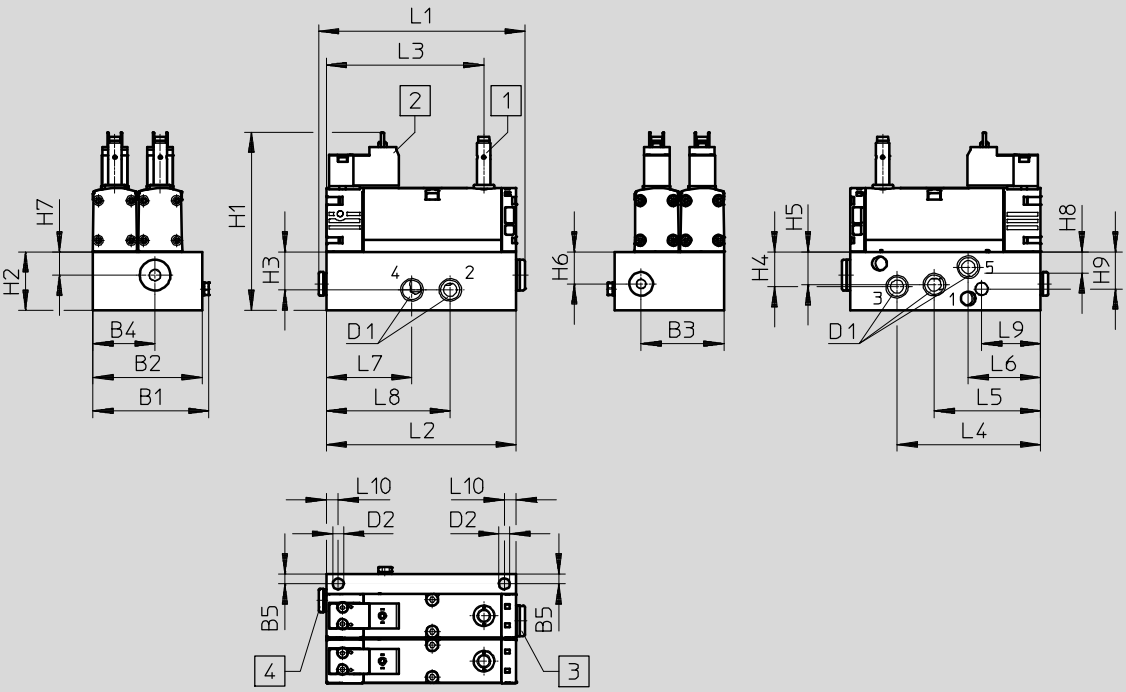
| Materials | |
|---|---|
| Sub-base/manifold sub-base | Wrought aluminium alloy |
| Housing | Die-cast aluminium, PA |
| Seals | NBR, FPM, HNBR |
| Screws | Galvanised steel |
| Sensor housing | High-alloy stainless steel |
| Sensor cable sheath | PUR |
| Note on materials | RoHS-compliant |

# Control block VOFA with safety function

Technical data

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

Decentralised individual connection variant VOFA-L26-T52-...




1 Proximity sensor PNP or NPN, size M8x1, plug connection to EN 61076-2-104

2 Electrical connection to EN 175301-803, type C

3 Pneumatic connection G¼ sealed with blanking plug

4 Pneumatic connection G⅛ sealed with blanking plug

| Type | B1 | B2 | B3 | B4 | B5 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VOFA-L26-T52-M-G14-1C1-APP | 69 | 65 | 49.3 | 37 | 6 | G¼ | 6.5 | 105.8 | 34.6 | 22.6 | 20.7 | 19.5 | 19.1 | 13.8 | 9.1 | 22 |
| VOFA-L26-T52-M-G14-1C1-ANP | | | | | | | | | | | | | | | | |

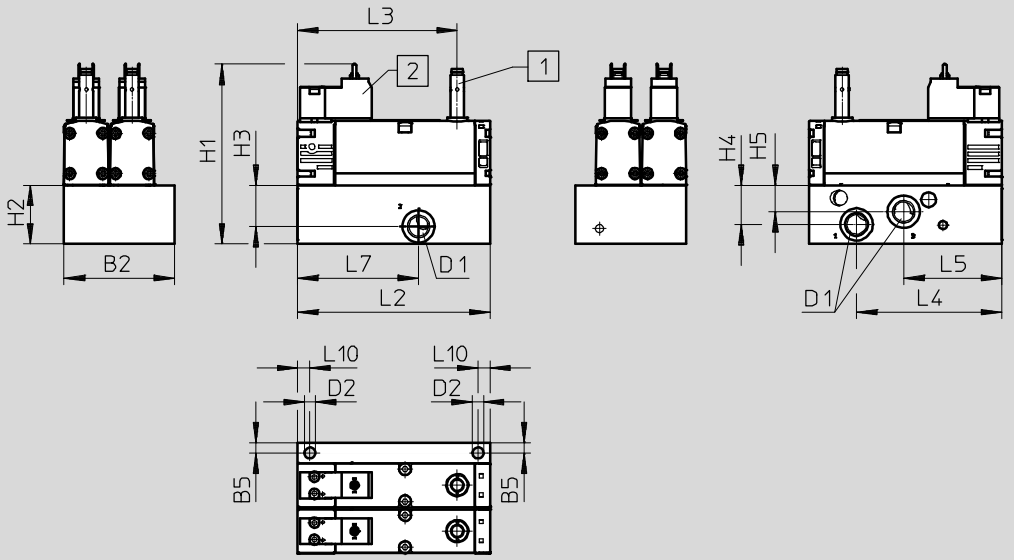
| Type | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 |
|---|---|---|---|---|---|---|---|---|---|---|
| VOFA-L26-T52-M-G14-1C1-APP | 122.9 | 113.1 | 93.8 | 85.3 | 63.1 | 42.9 | 51 | 73.8 | 35 | 7.1 |
| VOFA-L26-T52-M-G14-1C1-ANP | | | | | | | | | | |

# Control block VOFA with safety function

Technical data

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

Decentralised individual connection variant VOFA-L26-T32C-...

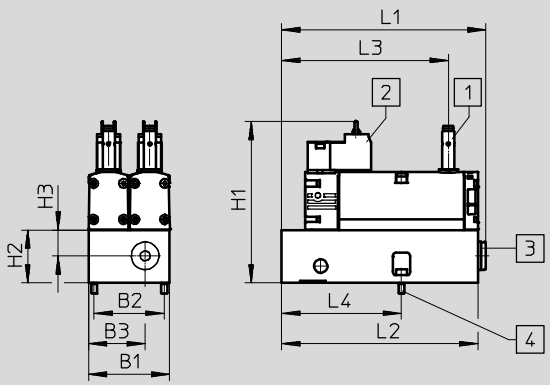



1 Proximity sensor PNP or NPN, size M8x1, plug connection to EN 61076-2-104

2 Electrical connection to EN 175301-803, type C

| Type | B2 | B5 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | L2 | L3 | L4 | L5 | L7 | L10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VOFA-L26-T32C-M-G14-1C1-APP | 65 | 6 | G¼ | 6.5 | 105.8 | 34.6 | 24.3 | 23.1 | 15.6 | 113.1 | 93.8 | 85.3 | 57.6 | 71 | 7.1 |
| VOFA-L26-T32C-M-G14-1C1-ANP | | | | | | | | | | | | | | | |

Version for valve terminal VTSA/VTSA-F, VOFA-B26-T52-...




1 Proximity sensor PNP or NPN, size M8x1, plug connection to EN 61076-2-104

2 Electrical connection to EN 175301-803, type C

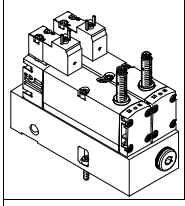
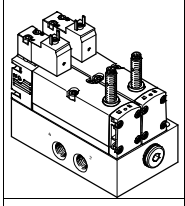
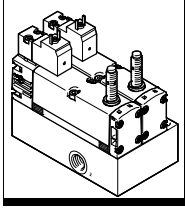
3 Pneumatic connection G¼ sealed with blanking plug

4 2x screw with internal hex (2.5 A/F), M4x12 (included in the scope of delivery)

| Type | B1 | B2 | B3 | H1 | H2 | H3 | L1 | L2 | L3 | L4 |
|---|---|---|---|---|---|---|---|---|---|---|
| VOFA-B26-T52-M-1C1-APP | 53 | 46 | 37 | 105.8 | 34.6 | 17 | 133.7 | 128.5 | 109.2 | 78.5 |
| VOFA-B26-T52-M-1C1-ANP | | | | | | | | | | |

# Control block VOFA with safety function

Ordering data – Control block

| Ordering data | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Valve function | Code | Switching output | Width [mm] | Weight [g] | Part No. | Type |
| Control block, version for valve terminal VTSA/VTSA-F | | | | | | | |
|  | 5/2-way valve, single solenoid, mechanical spring return, with switching position sensing via inductive sensor and 3-pin sensor push-in connector M8, mounted on intermediate plate for pneumatic interlinking | SP [2] | PNP | 53 | 1,112 | – [1] | **VOFA-B26-T52-M-1C1-APP** |
| | | SN [2] | NPN | 53 | 1,112 | – [1] | **VOFA-B26-T52-M-1C1-ANP** |
| Control block, as decentralised individual connection variant | | | | | | | |
|  | 5/2-way valve, single solenoid, mechanical spring return, with switching position sensing via inductive sensor and 3-pin sensor push-in connector M8, mounted on individual sub-base | – | PNP | 65 | 1,138 | **569819** | **VOFA-L26-T52-M-G14-1C1-APP** |
| | | – | NPN | 65 | 1,138 | **569820** | **VOFA-L26-T52-M-G14-1C1-ANP** |
|  | 3/2-way valve, mechanical spring return, with switching position sensing via inductive sensor and 3-pin sensor push-in connector M8, mounted on individual sub-base | – | PNP | 65 | 1,134 | **574011** | **VOFA-L26-T32C-M-G14-1C1-APP** |
| | | – | NPN | 65 | 1,134 | **574012** | **VOFA-L26-T32C-M-G14-1C1-ANP** |

1) The control block with safety function can only be ordered via the valve terminal configurator and therefore does not have a separate part number.
2) Code letter within the order code for a valve terminal configuration.

**Note**

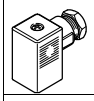
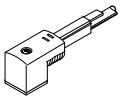
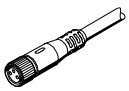
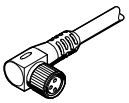
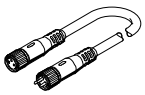
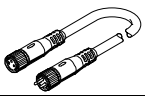
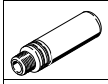
Silencer – Loss of safety function (VOFA -L26-T32C-...)
The addition of commercially available silencers can cause errors ranging from a reduction in exhaust performance to complete failure of the safety function.
In order to avoid such errors, proceed as follows:

- Use a silencer of type UO-1/4 or equivalent type
- Do not use sintered metal silencers
- When using a silencer, make sure the exhaust is unobstructed (exhaust outlet should have a minimum axial clearance of 15 mm)
- The silencer and exhaust (port 3) must not be blocked

**Note**

Sensors
The sensors contained in the valves must not be replaced by the customer. Incorrect assembly can result in malfunctions or damage to the valve.

Please contact Festo in the event of a malfunction.

| Ordering data | | | | | |
|---|---|---|---|---|---|
| | Description | | | Part No. | Type |
| Plug socket for electrical connection of individual valves | | | | | |
|  | Angled socket, 3-pin, screw terminal, cable connector | | PG7 | **151687** | **MSSD-EB** |
| | | | M12 | **539712** | **MSSD-EB-M12** |
| | | | | | |
| Illuminating seal for plug pattern to EN 175301-803, type C | | | | | Technical data ➔ Internet: meb-ld |
|  | For plug socket MSSD | | | **151717** | **MEB-LD-12-24DC** |
| | | | | | |
| Connecting cable for electrical connection of individual valves | | | | | |
|  | Angled socket, 3-pin, with signal status display via LED | | 2.5 m | **151688** | **KMEB-1-24-2,5-LED** |
| | | | 5 m | **151689** | **KMEB-1-24-5-LED** |
| | | | 10 m | **193457** | **KMEB-1-24-10-LED** |
| | | | | | |
| Connecting cable for electrical connection of sensors for switching position sensing | | | | | |
|  | • Straight socket, 3-pin, plug M8<br>• Open end, 3-wire | | 2.5 m | **541333** | **NEBU-M8G3-K-2,5-LE3** |
| | • Straight socket, 3-pin, plug M8<br>• Open end, 3-wire | | 5 m | **541334** | **NEBU-M8G3-K-5-LE3** |
|  | • Angled socket, rotatable, 3-pin, plug M8<br>• Open end, 3-wire | | 2.5 m | **8001660** | **NEBU-M8R3-K-2.5-LE3** |
| | • Angled socket, rotatable, 3-pin, plug M8<br>• Open end, 3-wire | | 5 m | **8001661** | **NEBU-M8R3-K-5-LE3** |
|  | Straight socket, straight plug, 3-pin, 4-pin plug M8 | | 2.5 m | **554037** | **NEBU-M8G3-K-2,5-M8G4** |
|  | Modular system for connecting cables | | – | **–** | **NEBU-...**<br>➔ Internet: nebu |
| | | | | | |
| Silencer | | | | | |
|  | Connecting thread | | G¼ | **197584** | **UO-¼** |
| | | | | | |
| Push-in fitting | | | | | |
|  | Connecting thread G¼ for tubing O.D. | 12 mm | 10 pieces | **186350** | **QS-G¼-12** |
| | | 10 mm | 10 pieces | **186101** | **QS-G¼-10** |
| | | 8 mm | 10 pieces | **186099** | **QS-G¼-8** |
| | | | | | |
| Blanking plug | | | | | |
|  | Connecting thread | G¼ | 10 pieces | **3569** | **B-¼** |