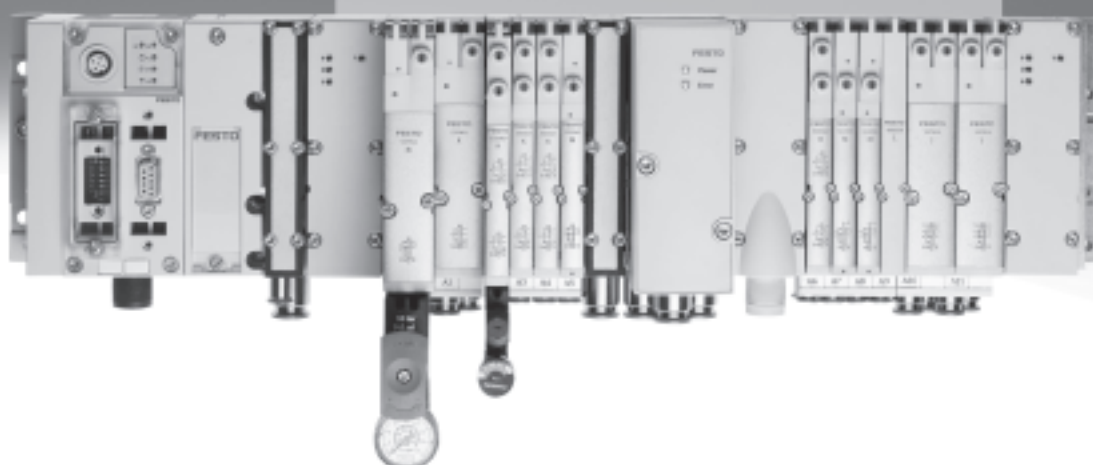


Valve terminal type 32 MPA

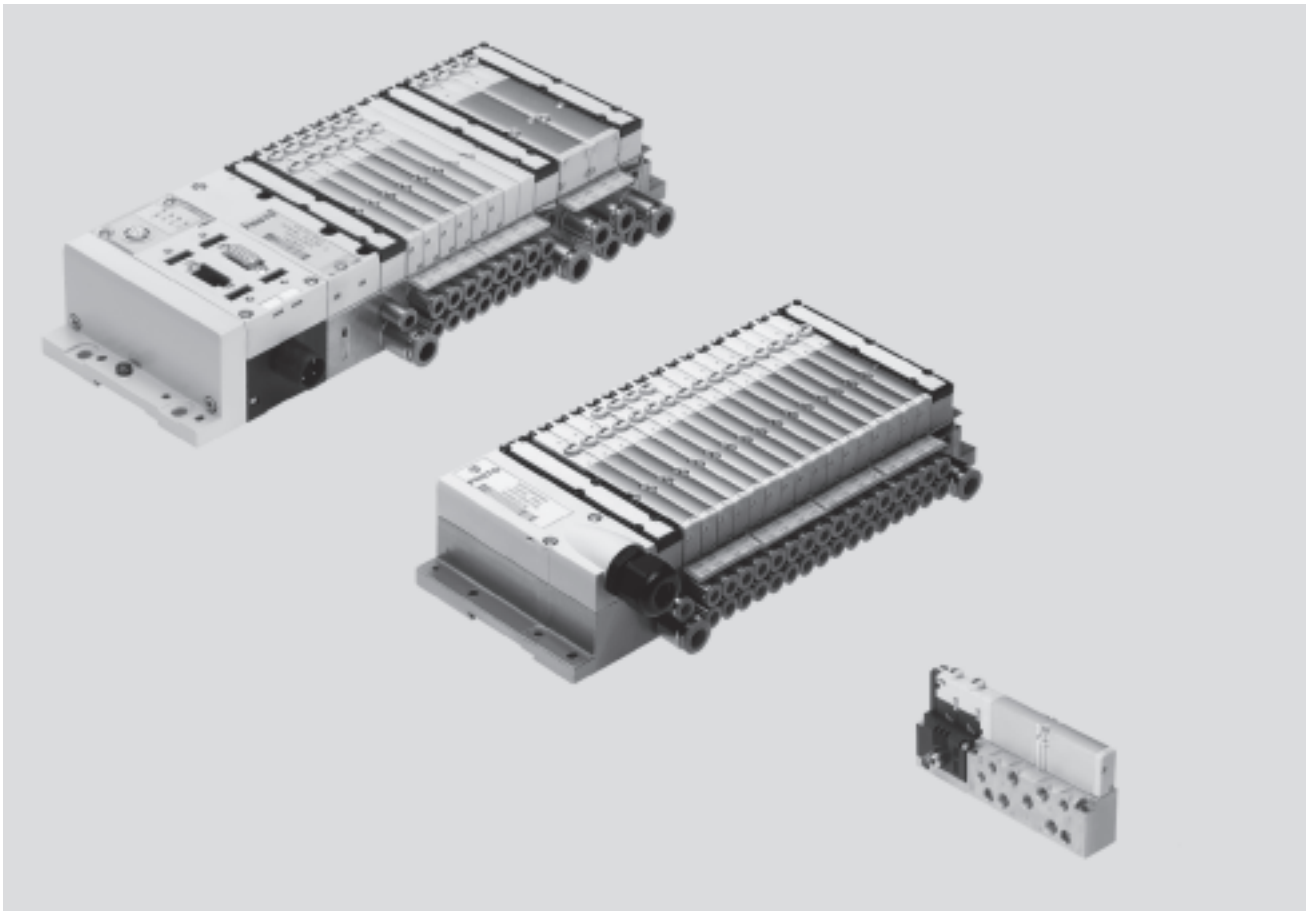
FESTO



Valve terminals type 32 MPA

Features

FESTO



Innovative

- Slim high-performance valves in sturdy metal housing
- MPA1 flow rates of up to 360 l/min
- MPA2 flow rates of up to 700 l/min
- From individual valve to a valve terminal with multi-pin plug and fieldbus connections and control block
- Dream team: fieldbus valve terminal suitable for CPX electrical peripherals. This means:
 - Forward-looking internal communication system for activation of the valves and CPX modules
 - Diagnosis down to the individual valve
 - Valves can either be activated via separate voltage supply or without (standard)

Versatile

- Modular system offering a range of configuration options
- Expandable up to 128 solenoid coils
- Can be converted and expanded at a later date
- Further manifold blocks can be assembled using just three screws, sturdy separating seals on metal separator plates
- Integration of innovative function modules possible
- Manual controller, rotatable pressure gauge
- Additional air supply via pressure zones using supply plates
- Wide range of pressures –0.9 ... 10 bar
- Wide range of valve functions

Reliable

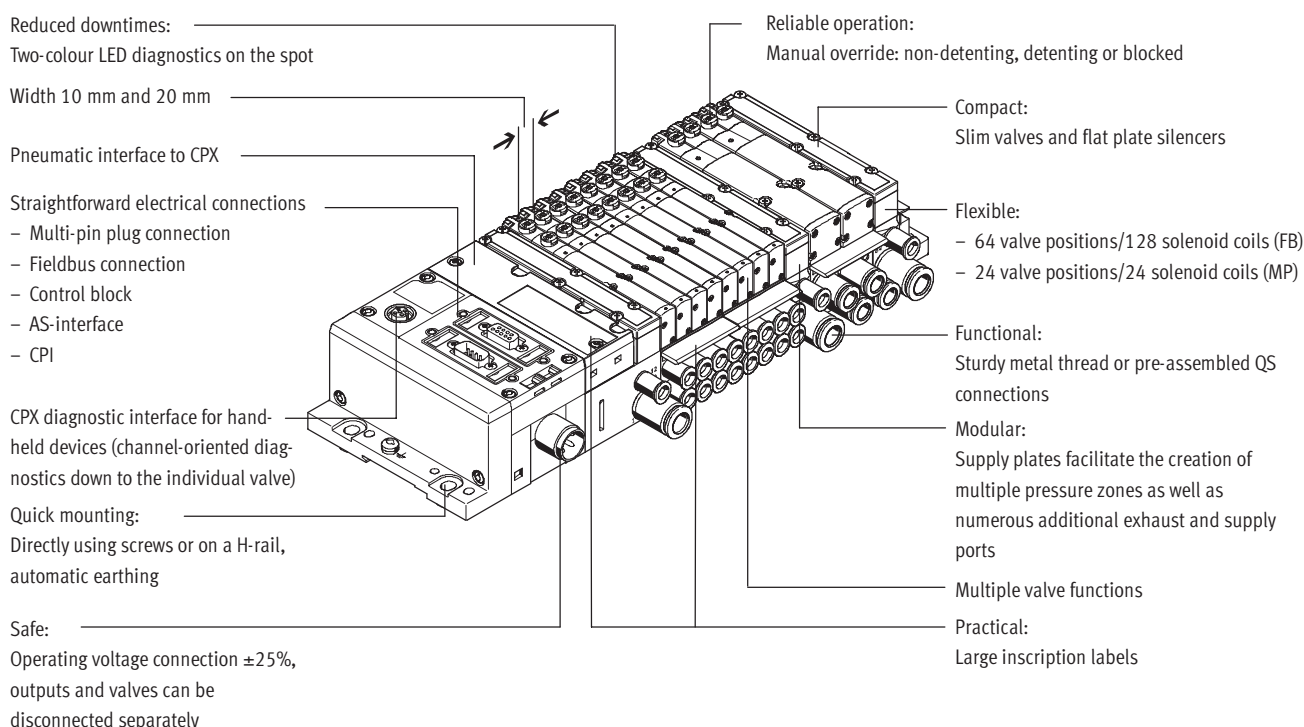
- Sturdy and durable metal components
 - Valves
 - Manifold blocks
 - Seals
- Fast troubleshooting thanks to LEDs on the valves and diagnostics via fieldbus
- Extensive operating voltage range $\pm 25\%$
- Ease of servicing through replaceable valves and electronics modules
- Manual override either via non-detenting, detenting or secured against unauthorised activation (covered)
- Durable thanks to the use of tried-and-tested piston spool valves
- Large and durable labelling system, suitable for barcodes

Easy to mount

- Ready to install unit, already assembled and tested
- Lower cost of selection, ordering, installation and commissioning
- Secure mounting on wall or H-rail mounting

Valve terminals type 32 MPA

Features



Equipment options

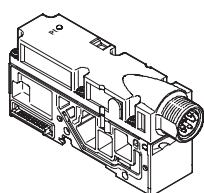
Valve functions

- | | | | |
|--|---|--|---|
| <ul style="list-style-type: none"> • 5/2-way valve, single solenoid • 5/2-way valve, double solenoid • 2x 3/2-way valve, normally open • 2x 3/2-way valve, normally closed • 2x 3/2-way valve, 1x normally open, 1x normally closed | <ul style="list-style-type: none"> • 5/3-way valve, mid-position pressurised • 5/3-way valve, mid-position closed • 5/3-way valve, mid-position exhausted • 2x 2/2-way valve, 1x normally closed, 1 x normally closed, reversible | <ul style="list-style-type: none"> • 2x 2/2-way valve, normally closed • 1x 3/2-way valve, normally closed, external compressed air supply • 1x 3/2-way valve, normally open, external compressed air supply • Manual controller | <p>All valves have the same compact dimensions with an overall length of 107 mm and a width of 10.5 mm or 21 mm. A height of 55 mm makes them a perfect match for the electrical peripherals CPX.</p> |
|--|---|--|---|

Special features

- | | | | |
|---|---|--|--|
| <p>Multi-pin plug terminal</p> <ul style="list-style-type: none"> • Max. 24 valve positions/ max. 24 solenoid coils • Parallel modular valve linking via circuit boards • Electronics module with integrated holding current reduction • Any compressed air supply • Any number of pressure zones | <p>Fieldbus terminal/control block</p> <ul style="list-style-type: none"> • Max. 64 valve positions/ max. 128 solenoid coils • Internal CPX bus system for valve activation • Module for electrical valve activation, with or without electrical isolation • Any compressed air supply • Any number of pressure zones | <p>Individual valve</p> <ul style="list-style-type: none"> • Electrical M8 connection, 4-pin with screw connection • Detachable electronics module with integrated holding current reduction <p>AS interface</p> <ul style="list-style-type: none"> • 2 to 8 valve positions freely configurable (max. 8 solenoid coils) with input feedback. | <p>CPI interface</p> <ul style="list-style-type: none"> • Max. 32 valve positions/ max. 32 solenoid coils <p>Combinable</p> <ul style="list-style-type: none"> • MPA1 flow rates of up to 360 l/min • MPA2 flow rates of up to 700 l/min • MPA1 and MPA2 can be combined on one valve terminal |
|---|---|--|--|

Electrical supply plate



- Increases the maximum number of valve positions possible to 64, with max. 128 solenoid coils
- Facilitates the creation of galvanically isolated, individually disconnectable voltage zones
- Greater economy thanks to the higher number of valves/solenoid coils per valve terminal
- Greater safety through individual disconnection of valve groups, for example for EMERGENCY-STOP functions



Note
The electrical supply plate is available with either an M18 or 7/8" connection.

Valve terminals type 32 MPA

Features

FESTO

Valve terminal configurator

Online via: → www.festo.com

The appropriate MPA valve terminal can be chosen quickly and easily using the online catalogue. This includes an easy-to-use valve terminal configurator, which makes it much easier for you to find the right product.

The valve terminals are fully assembled according to your order specifications and are individually tested. This reduces assembly and installation time to a minimum. You order a valve terminal type 32 using the order code.

Ordering system for type 32

→ Internet: mpa

Ordering system, CPX

→ Internet: cpx



The illustration above provides an example of a valve terminal configuration.

The following steps explain how you arrive at the order code:

Once you have called up → www.festo.com, click on “Automation” and select “Catalogue” from the “Products” submenu. Now select “Valve Terminals” and then “Universal Valve Terminals”. Select your desired valve terminal (in this case MPA) and click on the link “Configure common options”.

You can then configure the valve terminal step by step (from left to right) according to your requirements. Now click on the shopping basket to save the selected configuration (this will not trigger an order).

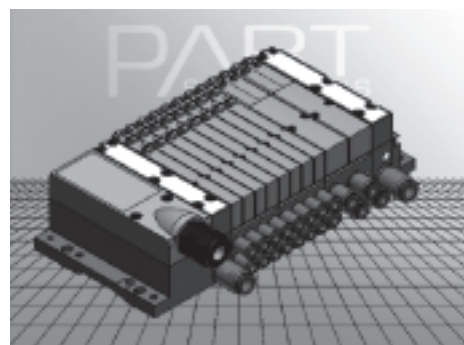
You can change to expert mode at any time via the link “Further options”. In expert mode, advanced options are available for you to configure your valve terminal.

2D/3D CAD data

Online via: → www.festo.com

You can request the CAD data for a valve terminal you have configured. To do this, perform the product search as described above. Enter the shopping basket and click on the CAD icon

(compass). On the next screen you can generate a 3D preview or request another data format of your choice by e-mail.

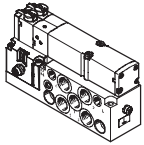


Valve terminals type 32 MPA

Features

FESTO

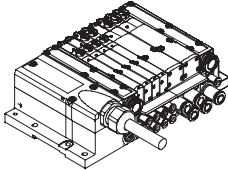
Individual connection



Valves can also be used on individual sub-bases for actuators further away from the valve terminal.

The electrical connection is established using a standard 4-pin M8 plug (EN 60947-5-2).

Multi-pin plug connection



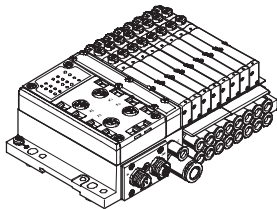
The signal flow from the controller to the valve terminal takes place via a pre-assembled multi-wire or a self-assembled cable to the multi-pin plug connection. This substantially reduces installation time.

The valve terminals can be fitted with max. 24 solenoid coils. This corresponds to 4 to 24 MPA1 or 2 to 24 MPA2 valves, or a combination of both.

Designs

- Sub-D connection
- Pre-assembled multi-pin cable
- Multi-pin cable for self-assembly

AS-interface connection



A special feature of the AS-interface is its ability to simultaneously transmit data and supply power via a two-wire cable. The encoded cable profile prevents connection with incorrect polarity. The valve terminal with AS-interface can be configured as follows:

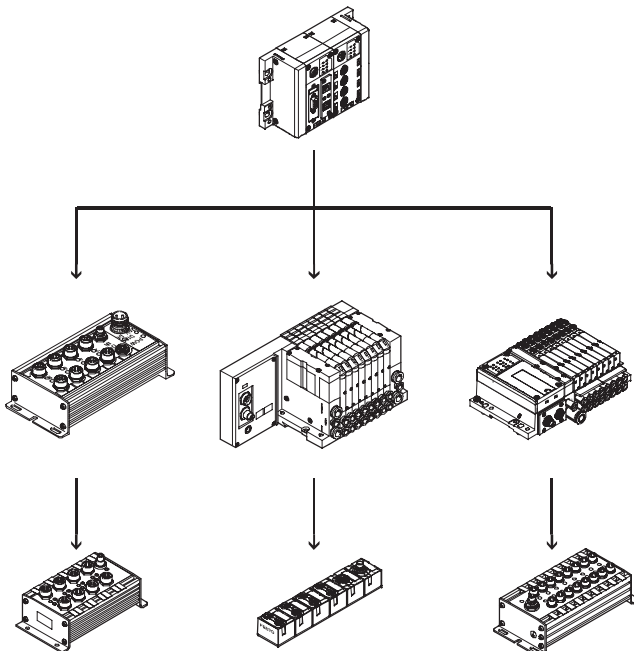
- With two to eight modular valve positions (max. 8 solenoid coils). This corresponds to 2 to 8 MPA1 or 2 to 8 MPA2 valves, or a combination of both
- With all available valve functions

The connection technology used for the inputs can be selected as with CPX: M8, M12, Harax, Sub-D, Cage Clamp (terminals to IP20).

Further information

➔ Internet: as-interface

CPI installation system



Valve terminal for installation system CPI:

Valve terminals with CP connection are intended for connection to higher-order fieldbus nodes or to control blocks. A fieldbus node or control block also allows the connection of decentralised input/output units. The following fieldbus protocols are supported:

- Festo fieldbus, ABB CS31, Moeller Suconet K
- Interbus
- Allen Bradley (1771 RIO)
- DeviceNet
- Profibus-DP
- Profinet IO
- CC-Link
- Modbus/TCP
- Ethernet

Four strings with up to 32 inputs and outputs can be connected to a fieldbus node or control block. The connector cables transmit the power supply for the input modules and the load voltage for the valves as well as control signals.

Further information

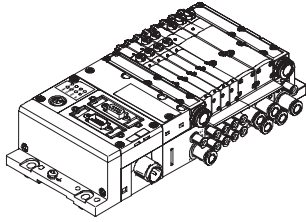
➔ Internet: cpi

Valve terminals type 32 MPA

Features

FESTO

Fieldbus connection via the CPX system



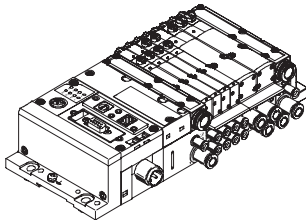
An integrated fieldbus node manages communication with a higher-order PLC. This enables a space-saving pneumatic and electronic solution.

Valve terminals with fieldbus interfaces can be configured with up to 16 sub-bases. In conjunction with MPA1 and 8 solenoid coils per sub-base, up to 128 solenoid coils can thus be activated. An MPA2 with 4 solenoid coils per sub-base can actuate 64 solenoid coils.

Designs

- Profibus-DP
- Interbus
- DeviceNet connection
- CANopen
- CC-Link
- Ethernet/IP
- Front End Controller Remote
- Front End Controller Remote I/O
- Modbus/TCP
- Profinet IO
- CPX terminal
 - ➔ Internet: cpx

Control block connection via the CPX system



Controllers integrated in the Festo valve terminals enable the construction of stand-alone control units to IP65, without control cabinets.

Using the slave operation mode, these valve terminals can be used for intelligent pre-processing and are therefore ideal modules for designing decentralised intelligence.

In the master operation mode, terminal groups can be designed with many options and functions, which can autonomously control a medium sized machine/system.

- Terminal CPX
 - ➔ Internet: cpx

Valve terminals type 32 MPA

Peripherals overview

FESTO

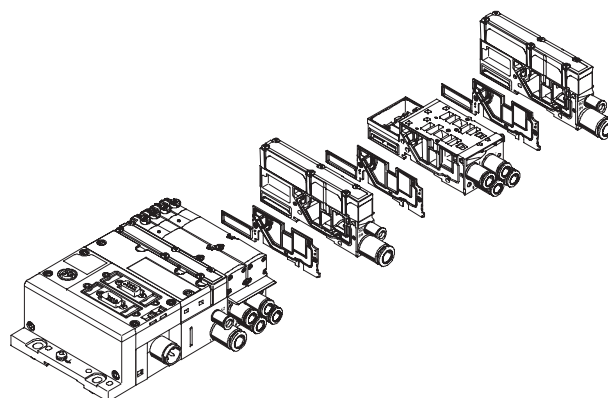
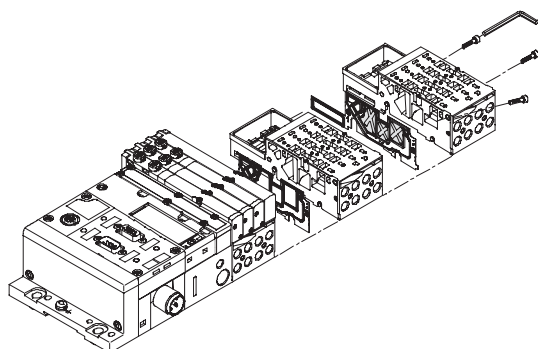
Modular pneumatic components

The modular design of the MPA facilitates maximum flexibility right from the planning stage and offers maximum ease of service in operation.

The system consists of manifold blocks and valves. The manifold blocks are screwed together and thus form the support system for the valves.

The manifold blocks contain the connection ducts for supplying compressed air to and venting from the valve terminal as well as the working lines for the pneumatic drives for each valve.

Each manifold block is connected to the next using three screws. Individual terminal sections can be isolated and further manifold blocks inserted by loosening these screws. This ensures that the valve terminal can be rapidly and reliably extended.



Modular electrical peripherals

The manner in which the valves are activated differs according to whether you are using a multi-pin terminal, fieldbus terminal or individual valve. The MPA with CPX interface is based on the internal bus system of the CPX and uses this serial communication system for all solenoid coils and a range of electrical input and output functions.

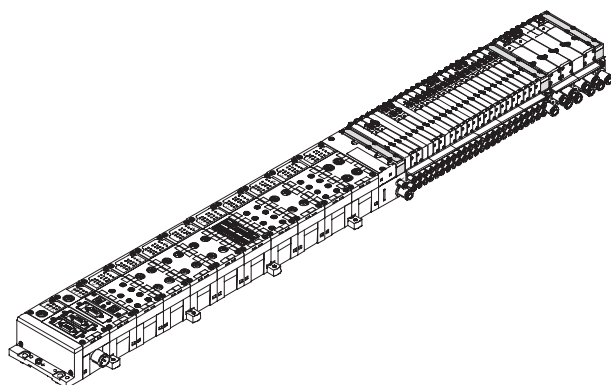
Serial linking facilitates the following:

- Transmission of switching information
- High valve density
- Compact design
- Position-based diagnostics

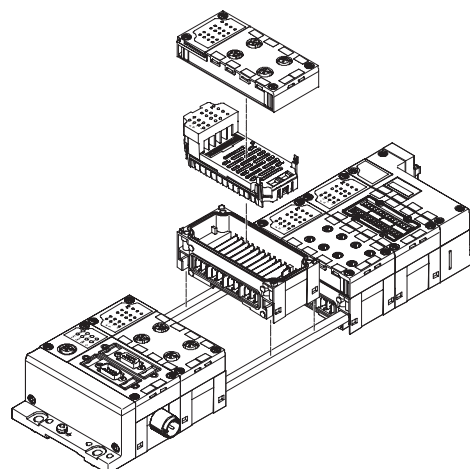
- Separate voltage supply for valves
 - Flexible alteration without address shifting
 - Transmission of status, parameter and diagnostic data
- ➔ Internet: cpx

- Option of CP interface
- CPX-FEC as autonomous controller with access via Ethernet and web server

MPA with electrical peripherals CPX



Modularity with electrical peripherals CPX



Valve terminals type 32 MPA

Peripherals overview

FESTO

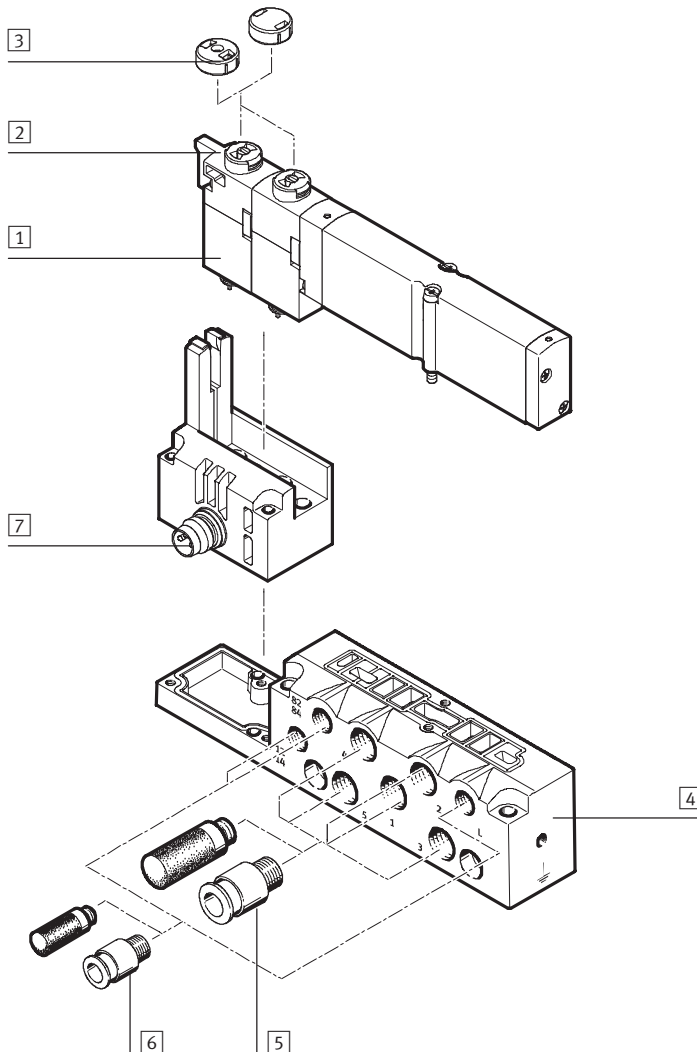
Individual sub-base size 1

Order:

- Using individual part numbers

Individual sub-bases can be fitted with any valve.

The electrical connection is established using a standard 4-pin M8 plug (EN 60947-5-2).



Designation	Brief description	→ Page/Internet
1 Solenoid valve	MPA1	58
2 Manual override	Non-detenting or detenting, per solenoid coil	–
3 Cover cap for manual override	Conversion from non-detenting or detenting to blocked	61
4 Sub-base	For individual valve MPA1	59
5 Fittings and/or silencers	M7 for working ports (2, 4) and compressed air/exhaust ports (1, 3, 5)	63
6 Fittings, silencers or blanking plugs	M5 For pilot air supply/pilot exhaust (12/14, 82/84) and pressure compensation	63
7 Electrical connection M8	4-pin	–

Valve terminals type 32 MPA

Peripherals overview

FESTO

Individual sub-base size 2

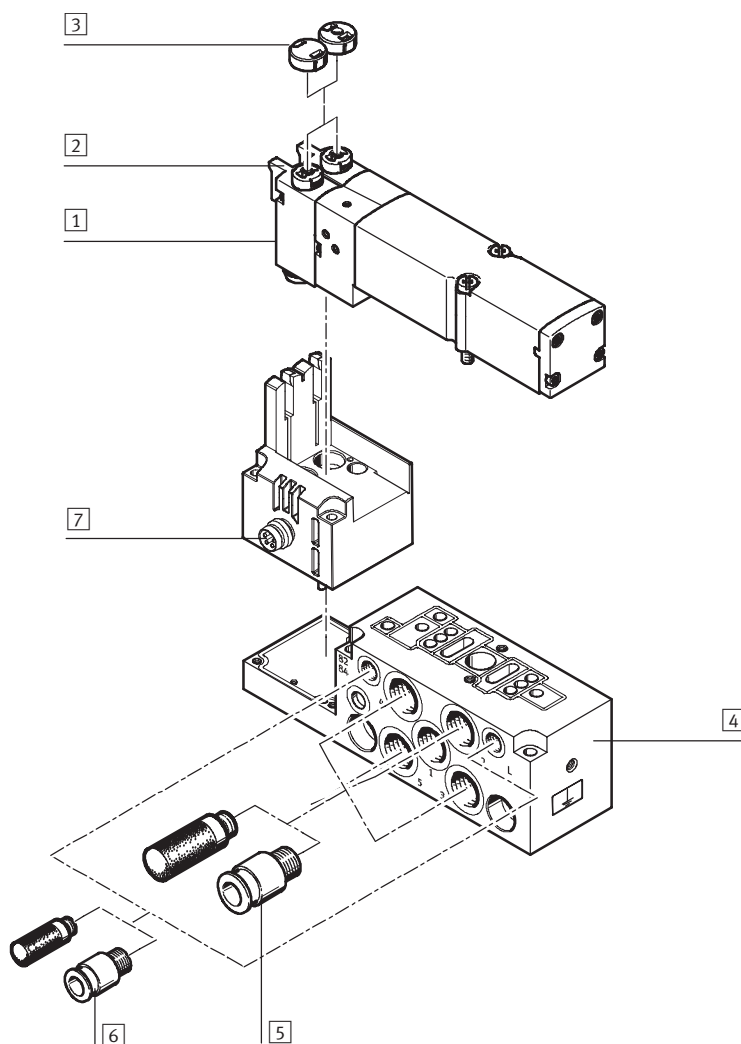
Order:

- Using individual part numbers

Individual sub-bases can be fitted with any valve.

The electrical connection is established using a standard 4-pin M8 plug (EN 60947-5-2).

An adjustable pressure regulator can be installed between the sub-base and the valve in order to control the force of the triggered actuator.



Designation	Brief description	→ Page/Internet
1 Solenoid valve	MPA2	58
2 Manual override	Non-detenting or detenting, per solenoid coil	–
3 Cover cap for manual override	Conversion from non-detenting or detenting to blocked	61
4 Sub-base	For individual valve MPA2	59
5 Fittings and/or silencers G $\frac{3}{8}$	For working ports (2, 4) and compressed air/exhaust ports (1, 3, 5)	63
6 Fittings, silencers or blanking plugs M5	For pilot air supply/pilot exhaust (12/14, 82/84) and pressure compensation	63
7 Electrical connection M8	4-pin	–

Valve terminals type 32 MPA

Peripherals overview

FESTO

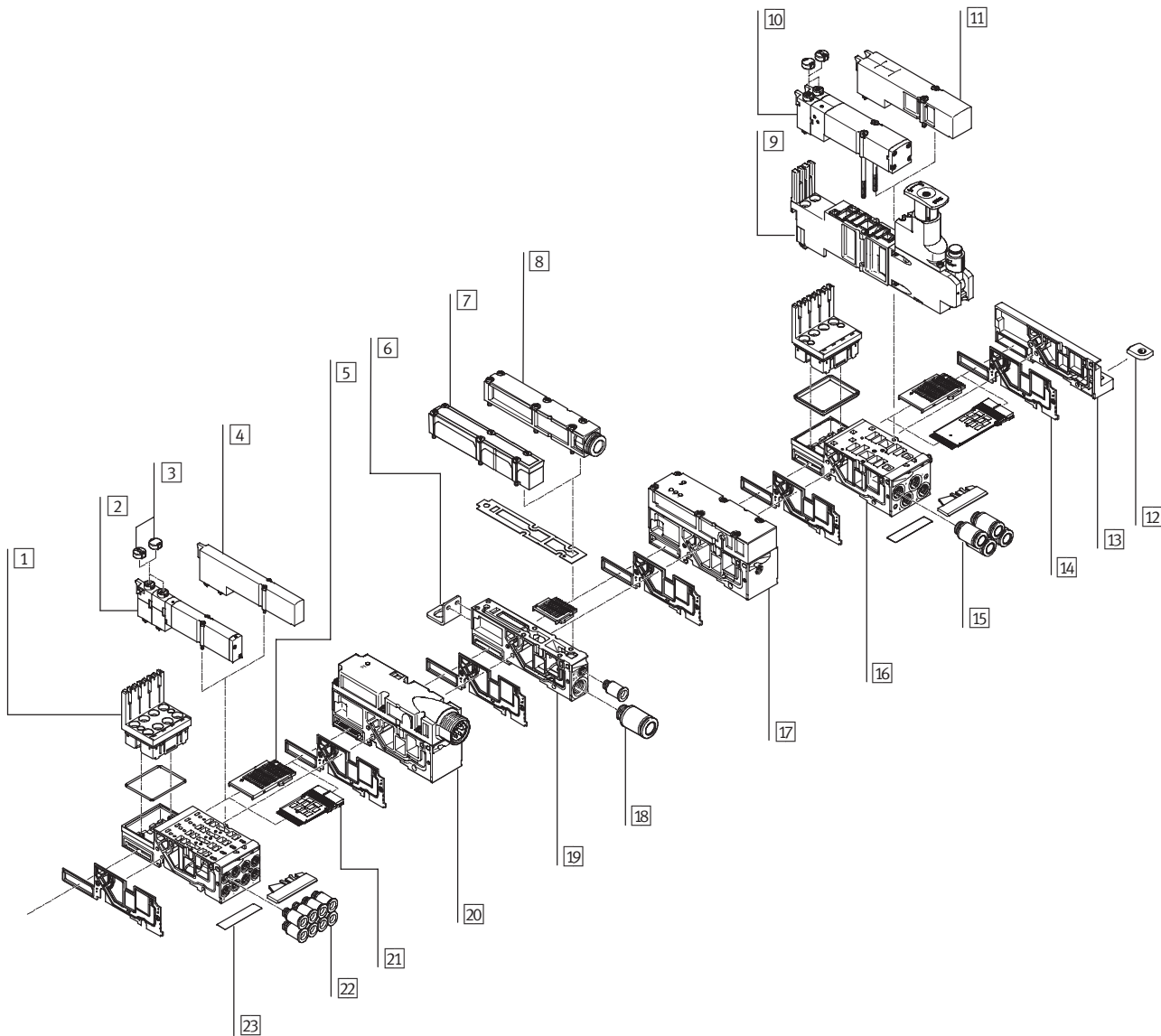
Valve terminal pneumatics

The manifold blocks are either prepared for:

- 2 or 4 single solenoid valves
 - 2 or 4 double solenoid valves
- depending on the size.

- Double solenoid valve positions can be fitted with any valve or a blanking plate.

- Single solenoid valve positions can only be equipped with single solenoid valves.



Valve terminals type 32 MPA

Peripherals overview

FESTO

Valve terminal pneumatics		
	Brief description	→ Page/Internet
1	Electronics module	For MPA size 1 and/or size 2
2	Solenoid valve	Size 1
3	Cover cap for manual override	Conversion from non-detenting or detenting to blocked
4	Blanking plate	For unused valve position (vacant position), size 1
5	Electrical connection module	For multi-pin plug connection and AS-interface
6	Mounting bracket	Optional for valve terminal mounting
7	Flat plate silencer	–
8	Exhaust plate	For ducted exhaust air
9	Regulator plate	Size 2
10	Solenoid valve	Size 2
11	Blanking plate	For unused valve position (vacant position), size 2
12	H-rail mounting	–
13	Right-hand end plate	–
14	Separating seal	For manifold block
15	Fittings	For working ports
16	Manifold block	Size 2
17	Pressure sensor	–
18	Fittings	For pneumatic supply plate
19	Supply plate	–
20	Electrical supply plate	For additional voltage supply for large valve terminals (only with fieldbus)
21	Electrical connection module	For fieldbus connection
22	Fittings	For working ports
23	Inscription labels	–

Valve terminals type 32 MPA

Peripherals overview

FESTO

Valve terminal with multi-pin plug connection

Order code:

- 32P-... for the pneumatic components
- 32E-... for the electrical components

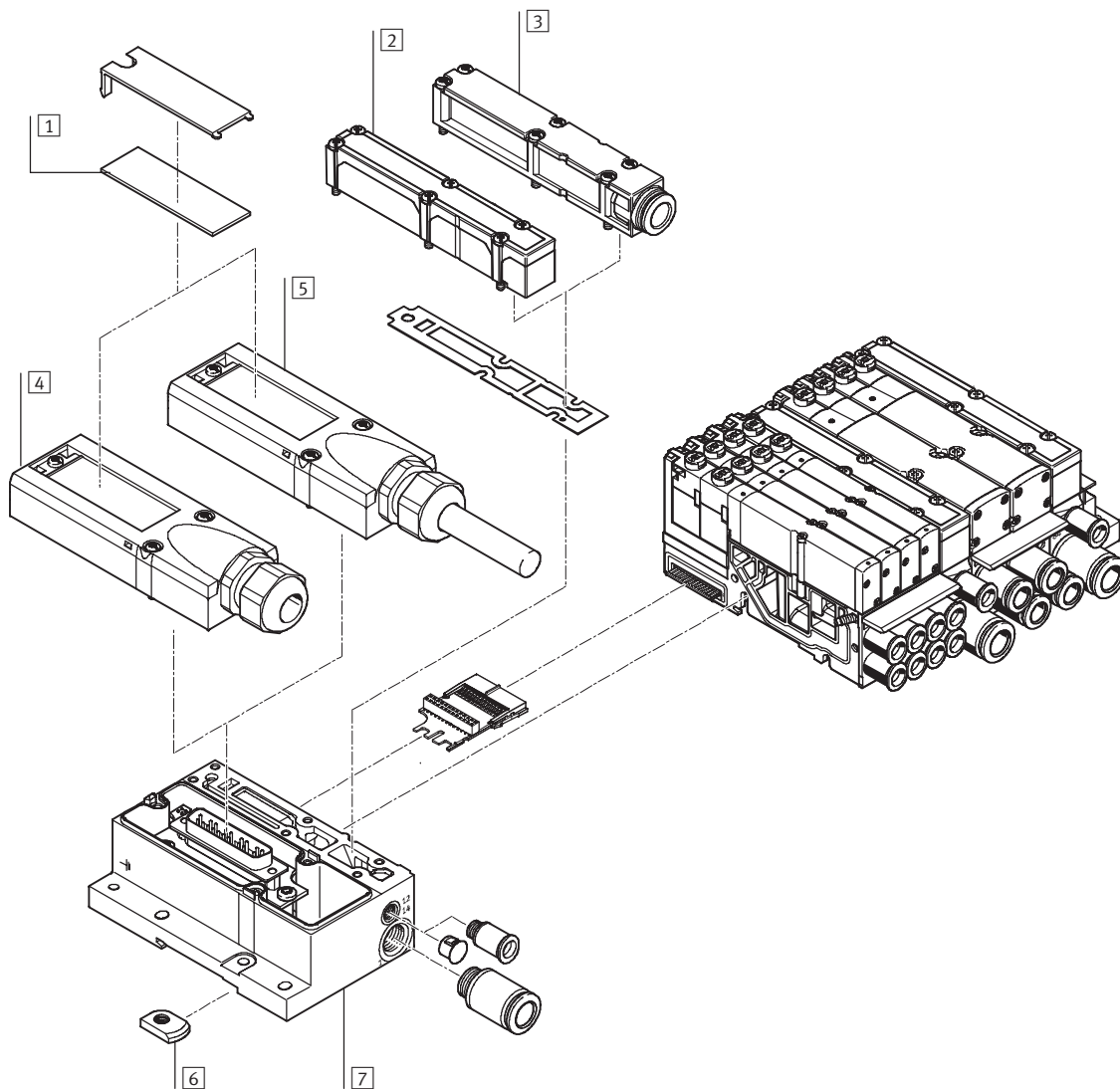
MPA valve terminals with multi-pin plug connection can be expanded with up to 24 solenoid coils.

The multi-pin plug connection is designed as a removable 25-pin Sub-D connection to IP65.

The cable can be selected when ordering:

- 2.5 m
- 5 m
- 10 m

Each can be used for max. 8 or 24 valves.



Designation	Brief description	→ Page/Internet
1 Inscription labels	Large, for multi-pin plug connection	–
2 Flat plate silencer	For pneumatic interface	–
3 Exhaust plate	For ducted exhaust air	61
4 Multi-pin plug connection	For self-assembly	62
5 Multi-pin plug connection	With multi-pin cable	62
6 H-rail mounting	–	59
7 Electrical interface	For multi-pin plug	60

Valve terminals type 32 MPA

Peripherals overview

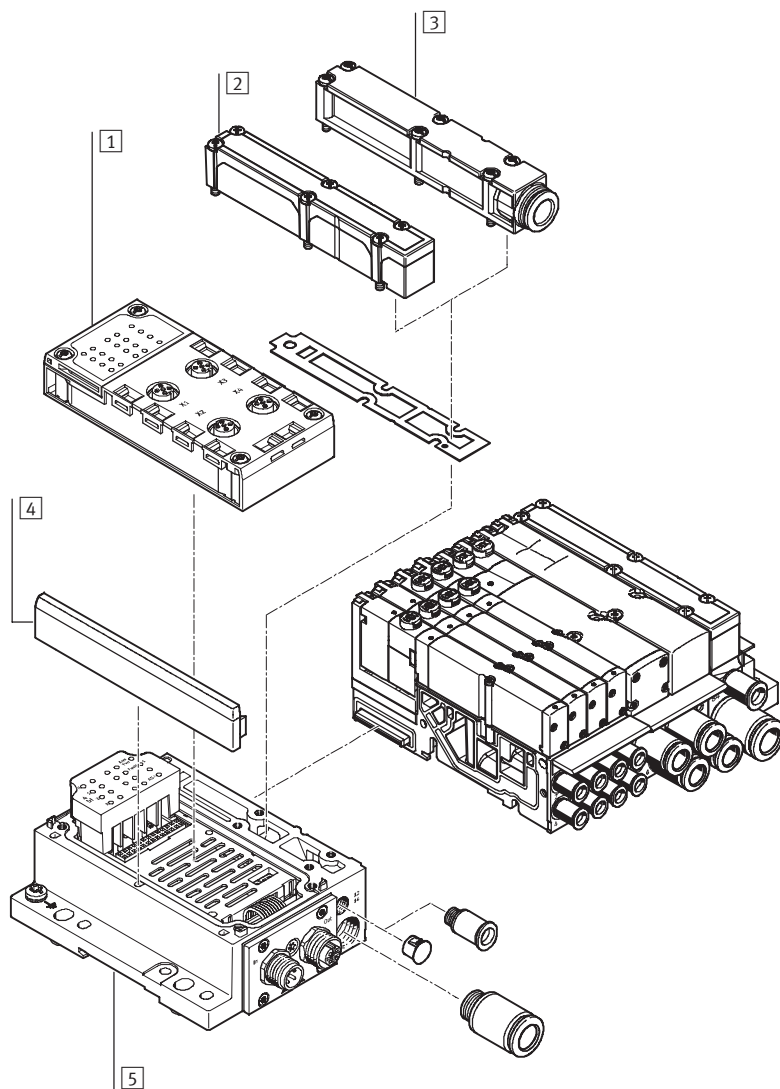
FESTO

Valve terminal with AS-interface connection

Order code:

- 32P-... for the pneumatic components
- 52E-... for the electrical components

MPA valve terminals with AS-interface connection can be expanded with up to 8 solenoid coils.



Designation	Brief description	→ Page/Internet
1 Manifold block	–	60
2 Flat plate silencer	For pneumatic interface	–
3 Exhaust plate	For ducted exhaust air	61
4 Cover	–	–
5 Electrical interface	–	59

Valve terminals type 32 MPA

Peripherals overview

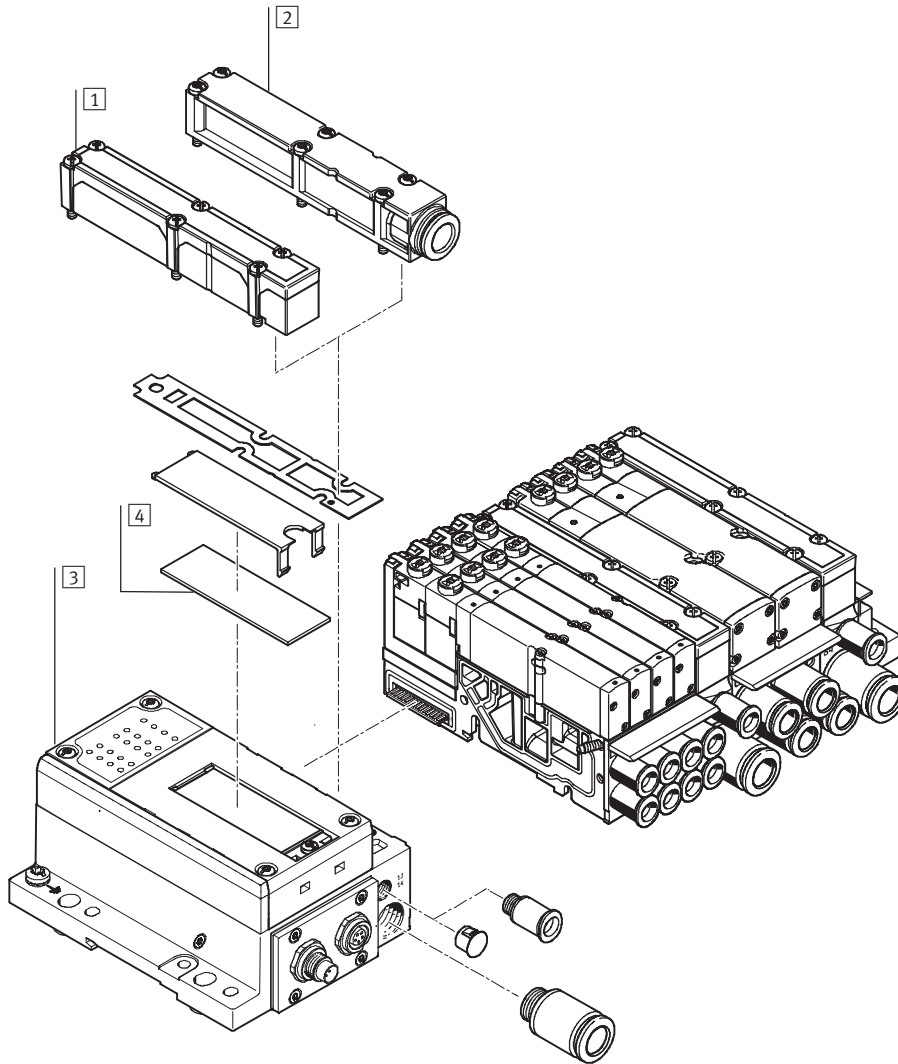
FESTO

Valve terminal with CPI connection

Order code:

- 32P-... for the pneumatic components
- 56E-... for the electrical components

MPA valve terminals with CPI-interface connection can be expanded with up to 32 solenoid coils.



Designation	Brief description	→ Page/Internet
1 Flat plate silencer	For pneumatic interface	–
2 Exhaust plate	For ducted exhaust air	61
3 Electrical interface	–	60
4 Inscription labels	Large for CPI electrical interface	–

Valve terminals type 32 MPA

Peripherals overview

FESTO

Valve terminal with fieldbus connection, control block (electrical peripherals CPX)

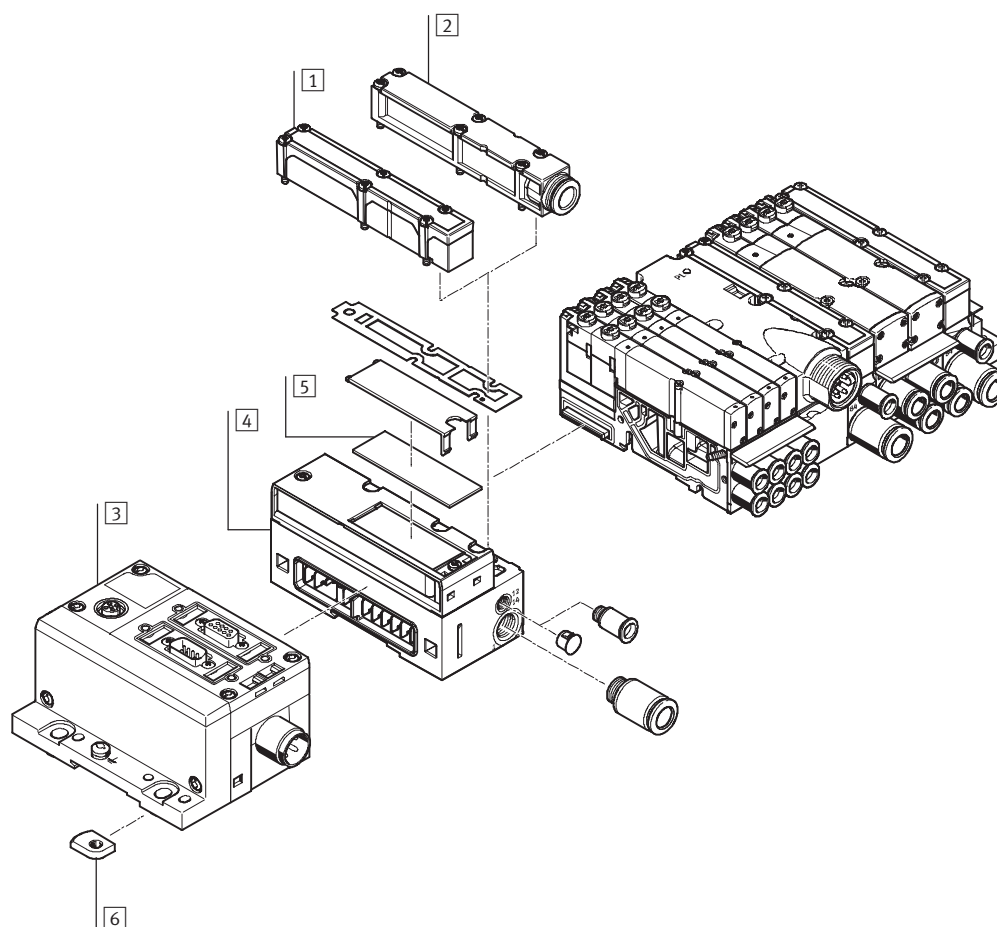
Order code:

- 32P-... for the pneumatic components
- 50E-... for the electrical components

Valve terminals with fieldbus interfaces can be configured with up to 16 manifold blocks. In conjunction with MPA1 and 8 solenoid coils per manifold block, 128 solenoid coils can thus be fitted. With an MPA2 with 4 solenoid coils per sub-base 64 solenoid coils can be actuated.

Each valve position can be equipped with any valve or a blanking plate. The rules for CPX apply to the equipment that can be used in combination with the electrical peripherals CPX.
In general:

- Digital inputs/outputs
- Analogue inputs/outputs
- Parameterisation of inputs and outputs
- Integrated multi-featured diagnostic system
- Preventive maintenance concepts



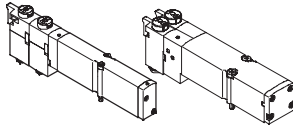
Designation	Brief description	→ Page/Internet
1 Flat plate silencer	For pneumatic interface	–
2 Exhaust plate	For ducted exhaust air	61
3 CPX modules	–	–
4 Pneumatic interface	For CPX modules	59
5 Inscription labels	Large, for pneumatic interface CPX	–
6 H-rail mounting	–	59

Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Sub-base valve



MPA offers a comprehensive range of valve functions. All valves are equipped with piston spool and patented sealing system which facilitates efficient sealing, a broad pressure range and long service life. To increase power they have a pneumatic pilot control. Supply takes place via a pilot air supply.

Sub-base valves can be quickly replaced since the tubing connectors remain on the manifold block. This design is also particularly flat.

Irrespective of the valve function there are sub-base valves with one solenoid coil (single solenoid) or with two solenoid coils (double solenoid or two single solenoid valves in one housing).

Design

Valve replacement

The valves are attached to the metal sub-base using two screws, which means that they can be easily

replaced. The mechanical sturdiness of the sub-base guarantees excellent long-term sealing.

Expansion

Blanking plates can be replaced by valves at a later date. The dimensions, mounting points and existing pneumatic installations remain unchanged during this process.

The valve code (M, J, N, K, H, B, G, E, X, W, D, I) is located on the front of the valve beneath the manual override.

Valve function				
Code	Circuit symbol	Size		Description
		1	2	
M		■	■	5/2-way valve, single solenoid • Pneumatic spring return • Reversible • Suitable for vacuum
J		■	■	5/2-way valve, double solenoid • Reversible • Suitable for vacuum
N		■	■	2x 3/2-way valve, single solenoid • Normally open • Pneumatic spring return • Operating pressure > 3 bar
K		■	■	2x 3/2-way valve, single solenoid • Normally closed • Pneumatic spring return • Operating pressure > 3 bar
H		■	■	2x 3/2-way valve, single solenoid • Normally – 1x closed, – 1x open, • Pneumatic spring return • Operating pressure > 3 bar

Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Valve function				
Code	Circuit symbol	Size		Description
		1	2	
B		■	■	5/3-way valve <ul style="list-style-type: none"> • Mid-position pressurised¹⁾ • Mechanical spring return • Reversible • Suitable for vacuum
G		■	■	5/3-way valve <ul style="list-style-type: none"> • Mid-position closed¹⁾ • Mechanical spring return • Reversible • Suitable for vacuum
E		■	■	5/3-way valve <ul style="list-style-type: none"> • Mid-position exhausted¹⁾ • Mechanical spring return • Reversible • Suitable for vacuum
X		■	■	1x 3/2-way valve, single solenoid <ul style="list-style-type: none"> • Normally closed • External compressed air supply • Pneumatic spring return • Reversible <p>A pressure at working port 4 (–0.9 ... +10 bar) can be switched also with internal or external pilot air supply.</p>
W		■	■	1x 3/2-way valve, single solenoid <ul style="list-style-type: none"> • Normally open • External compressed air supply • Pneumatic spring return • Reversible <p>A pressure at working port 2 (–0.9 ... +10 bar) can be switched also with internal or external pilot air supply.</p>
D		■	■	2x 2/2-way valve <ul style="list-style-type: none"> • Normally closed • Pneumatic spring return • Operating pressure > 3 bar
I		■	■	2x 2/2-way valve <ul style="list-style-type: none"> • 1x normally closed • 1x normally closed, reversible • Pneumatic spring return • Operating pressure > 3 bar • Vacuum at port 3/5 only

1) If neither solenoid coil is energised, the valve moves to its mid-position by means of spring force.
 If both coils are being supplied with power simultaneously, the valve remains in the switching position previously assumed.



Note

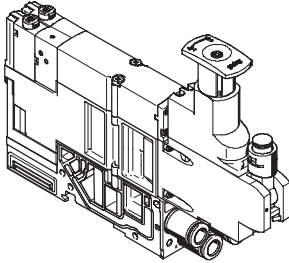
For vacuum operation valves require a filter. This is to avoid that foreign matter is drawn into the valve (e.g. when using a suction cup).

Valve terminals type 32 MPA

Key features – Pneumatic components

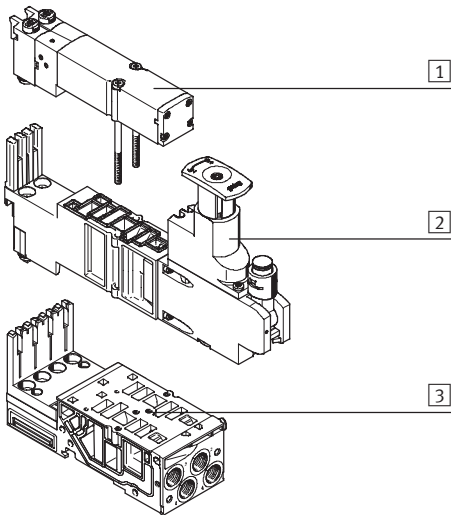
FESTO

Vertical stacking



Additional functions can be added to each valve position between the manifold block and the valve. These functions are known as vertical stacking, and enable special functioning or control of an individual valve position.

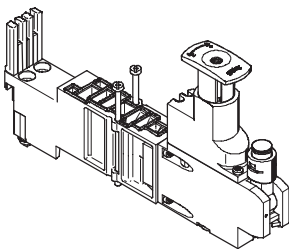
Vertical stacking components



- 1 VMPA2 valve
- 2 Pressure regulator plate
- 3 Manifold block

Vertical stacking

Pressure regulator plate



An adjustable pressure regulator can be installed between the manifold block and the valve in order to control the force of the triggered actuator.

This pressure regulating valve maintains an essentially constant output pressure (secondary side) independent of pressure fluctuations (primary side) and air consumption.

Standard version:

- For supply pressure up to 6 bar or up to 10 bar
- Without pressure gauge (optional)
- Regulator knob with 3 positions (locked, reference position, free running)

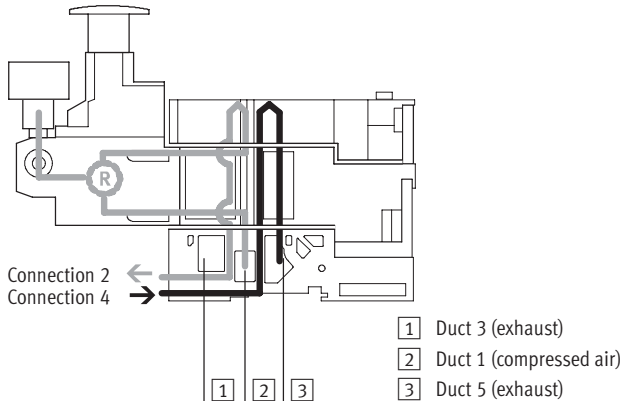
Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Vertical stacking

Mode of operation of pressure regulator plate (P regulator) for port 1; code: PA, PF



This pressure regulator regulates the pressure upstream of the valve in duct 1. Ducts 2 and 4 thus have the same regulated pressure.

During venting, the exhaust flow in the valve is from duct 2 to duct 3 and from duct 4 to duct 5.

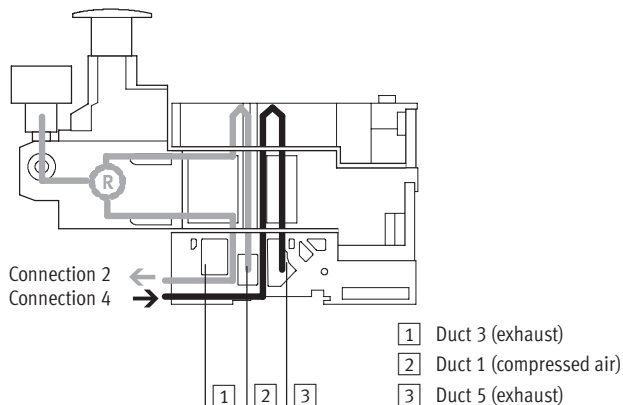
Advantages

- The pressure regulator is not affected by venting, since the pressure is regulated upstream of the valve.
- The pressure regulator can always be adjusted, since the pressure from the valve terminal is always present.

Typical applications

- An equal working pressure is required at working ports 2 and 4.
- A lower working pressure (e.g. 3 bar) than the operating pressure present on the valve terminal (e.g. 8 bar) is required.

Mode of operation of pressure regulator plate (B regulator) for port 2; code: PC, PH



This pressure regulator regulates the pressure in duct 2 after the pressure medium flows through the valve. During venting, the exhaust flow in the valve is from duct 2 to duct 3 via the pressure regulator.

Restrictions

The pressure regulator can only be set in switched status (e.g. the valve is switched to 2 and exhaust flow occurs from 4 to 5).

Application example

The pressure regulator makes it possible to reduce the pressure at port 2 of an individual valve, in contrast to

the operating pressure of the valve terminal.

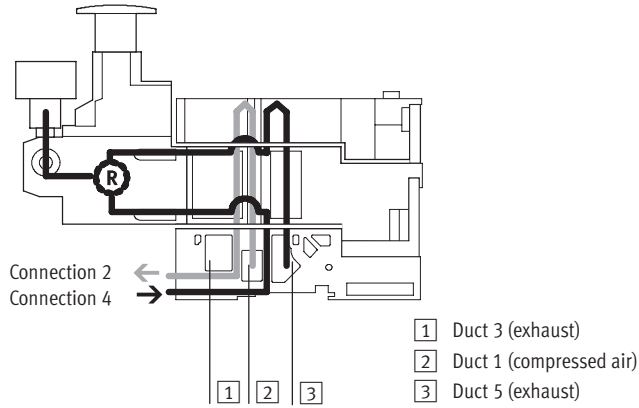
Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Vertical stacking

Mode of operation of pressure regulator plate (A regulator) for port 4; code: PB, PK



This pressure regulator regulates the pressure in duct 4 after the pressure medium flows through the valve. During venting, the exhaust flow in the valve is from duct 4 to duct 5 via the pressure regulator.

Restrictions

The pressure regulator cannot be adjusted in switched state

(e.g. valve is switched to 4 and exhaust flow occurs from 2 to 3).

Application example

If different working pressures are required at ports 4 and 2. At port 2, the pressure from duct 1 applies.

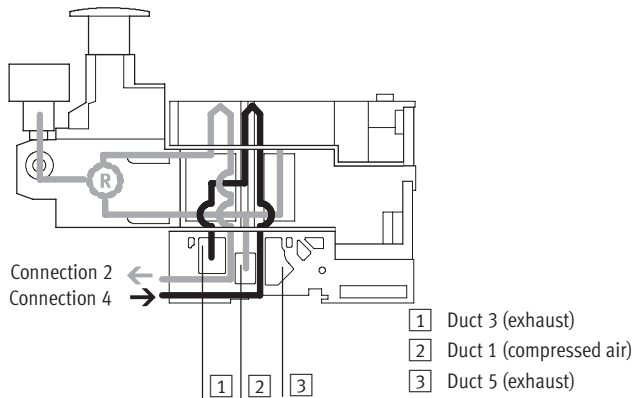
Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Vertical stacking

Mode of operation of pressure regulator plate (B regulator, reversible) for port 2, reversible; code: PL, PN



The reversible B regulator splits the supply in duct 1 and regulates the pressure upstream of the valve in duct 3 (in duct 5 the unregulated pressure from duct 1 applies). Thereafter the regulated air is regulated on duct 2. The valve is thus operated in reversible mode.

During venting, the exhaust flow in the valve is from duct 2 to duct 1 and reversed via the intermediate plate to duct 3 on the sub-base.

Typical applications

- When instead of the valve terminal's operating pressure a different pressure is required in duct 2.
- When fast exhaust performance is required.
- When the pressure regulator must always be adjustable.



Note

Reversible pressure regulator plates may only be combined with valves

that can be operated in reversible mode.

Advantages

- Fast cycle times.
- 50% higher exhaust flow rate, as air is not exhausted via the pressure regulator. The load on the pressure regulator is also reduced.
- No quick exhaust valves are required.
- Operating pressure is always present at the pressure regulator, as the pressure is regulated upstream of the valve, i.e. the regulator can always be adjusted.

Restrictions

- 2x 3/2-way valves (code N, K, H) not used, as pressure is present at ports 3 and 5.
- No practical combination with a flow control plate possible.

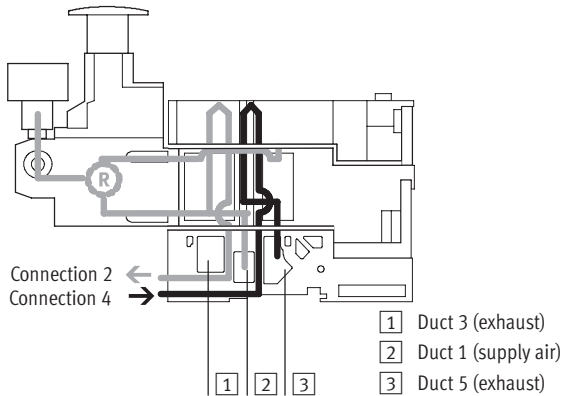
Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Vertical stacking

Mode of operation of pressure regulator plate (A regulator, reversible) for port 4, reversible; code: PK, PM



The reversible A regulator splits the supply in duct 1 and regulates the pressure upstream of the valve in duct 5 (in duct 3 the unregulated pressure from duct 1 applies). Thereafter the regulated air is regulated on duct 4. The valve is thus operated in reversible mode.

During venting, the exhaust flow in the valve is from duct 4 to duct 1 and reversed via the intermediate plate to duct 5 on the sub-base.

Typical applications

- When instead of the valve terminal's operating pressure a different pressure is required in duct 4.
- When fast exhaust performance is required.
- When the pressure regulator must always be adjustable.



Note

Reversible pressure regulator plates may only be combined with valves

that can be operated in reversible mode.

Advantages

- Fast cycle times.
- 50% higher exhaust flow rate, as air is not exhausted via the pressure regulator. The load on the pressure regulator is also reduced.
- No quick exhaust valves are required.
- Operating pressure is always present at the pressure regulator, as the pressure is regulated upstream of the valve, i.e. the regulator can always be adjusted.

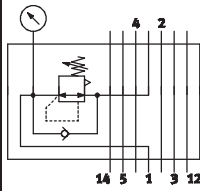
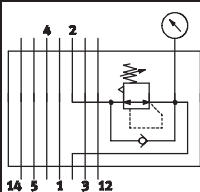
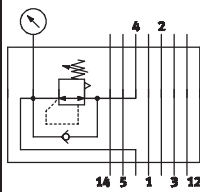
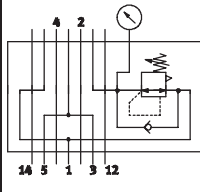
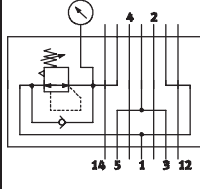
Restrictions

- 2x 3/2-way valves (code N, K, H) not used, as pressure is present at ports 3 and 5.
- No practical combination with a flow control plate possible.

Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Vertical stacking – Pressure regulator plate							
Code		Type	Size		Supply pressure		Description
			1	2	6 bar	10 bar	
Pressure regulator plate for port 1 (P regulator)							
PA		VMPA2-B8-R1C2-C-10	–	■	–	■	• Regulates the operating pressure in duct 1 upstream of the directional control valve
PF		VMPA2-B8-R1C2-C-06	–	■	■	–	
Pressure regulator plate for port 2 (B regulator)							
PC		VMPA2-B8-R2C2-C-10	–	■	–	■	• Regulates the operating pressure in duct 2 downstream of the directional control valve
PH		VMPA2-B8-R2C2-C-06	–	■	■	–	
Pressure regulator plate for port 4 (A regulator)							
PB		VMPA2-B8-R3C2-C-10	–	■	–	■	• Regulates the operating pressure in duct 4 downstream of the directional control valve
PG		VMPA2-B8-R3C2-C-06	–	■	■	–	
Pressure regulator plate for port 2, reversible (B regulator)							
PL		VMPA2-B8-R6C2-C-10	–	■	–	■	• Reversible pressure regulator for port 2
PN		VMPA2-B8-R6C2-C-06	–	■	■	–	
Pressure regulator plate for port 4, reversible (A regulator)							
PK		VMPA2-B8-R7C2-C-10	–	■	–	■	• Reversible pressure regulator for port 4
PM		VMPA2-B8-R7C2-C-06	–	■	■	–	

Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Blanking plate

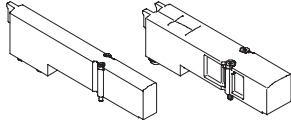


Plate without valve function for reserving valve positions on a valve terminal.

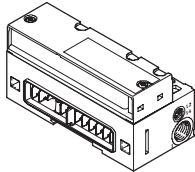
Valves and blanking plates are attached to the manifold block using two screws.

Valve function

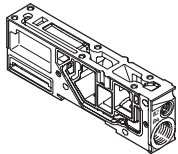
Code	Circuit symbol	Size		Description
		1	2	
L	—	■	■	For valve terminal only: Blanking plate for vacant valve position

Compressed air supply and venting

Pneumatic interface



Supply plate



The valve terminal MPA can be supplied with air at one or more points. This is a reliable way of ensuring that the terminal will always have a sufficient supply of air and that this air will be vented, even with large-scale expansions.

The main supply to the terminal is located on the pneumatic interface, which links the electrical and the pneumatic parts. Additional provision is made for a number of supply plates. Venting is either via flat plate silencers or common lines for ducted exhaust.

These vents are located on the pneumatic interface as well as on the supply plates. In the case of ducted exhaust, at least one additional supply plate is required which then contains the exhaust port for the pilot air (port 82/84).

Pilot air supply

The port for the main pneumatic supply is located on the pneumatic interface. The ports differ for the following types of pilot air supply:

- Internal
- External

Internal pilot air supply

Internal pilot air supply can be selected if the required working pressure is between 3 and 8 bar. The pilot air supply is then branched from the compressed air 1 in the pneumatic interface using an internal connection. Port 12/14 is closed using a blanking plug.

External pilot air supply

If the supply pressure is less than 3 bar or greater than 8 bar, you must operate your MPA valve terminal using external pilot air supply. In this case the pilot air supply is additionally supplied via port 12/14 at the pneumatic interface.



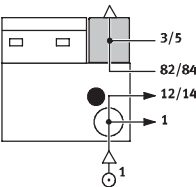
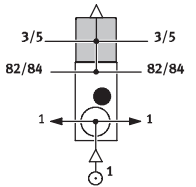
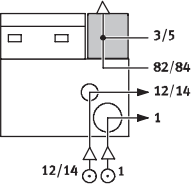
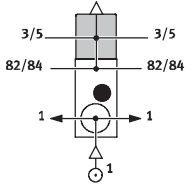
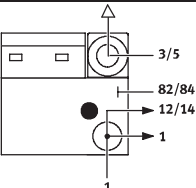
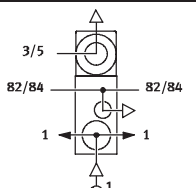
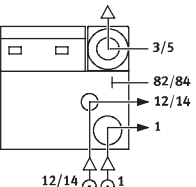
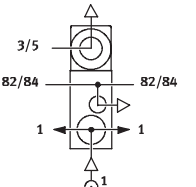
Note

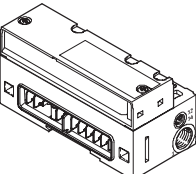
If a gradual pressure build-up in the system using a soft-start valve is chosen, external pilot air supply should be connected so that the control pressure is already very high when applied during switch-on.

Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Compressed air supply and pilot air supply					
Code	Graphic symbol		Size		Notes
	Pneumatic interface	Supply plate	1	2	
S			■	■	<p>Internal pilot air supply, flat plate silencer</p> <ul style="list-style-type: none"> Pilot air supply is branched internally from port 1 in the pneumatic interface Exhaust port 3/5 and pilot exhaust port 82/84 via flat plate silencer For operating pressure in the range 3 ... 8 bar
T			■	■	<p>External pilot air supply, flat plate silencer</p> <ul style="list-style-type: none"> Pilot air supply between 3 and 8 bar is connected at port 12/14 Exhaust port 3/5 and pilot exhaust port 82/84 via flat plate silencer For operating pressure in the range –0.9 ... 10 bar (suitable for vacuum)
V			■	■	<p>Internal pilot air supply, ducted exhaust air</p> <ul style="list-style-type: none"> Pilot air supply is branched internally from port 1 in the pneumatic interface Exhaust port 3/5: connection to pneumatic interface and supply plate Pilot exhaust port 82/84: connection to supply plate only For operating pressure in the range 3 ... 8 bar
X			■	■	<p>External pilot air supply, ducted exhaust air</p> <ul style="list-style-type: none"> Pilot air supply (3 ... 8 bar) is connected at port 12/14 Exhaust port 3/5: connection to pneumatic interface and supply plate Pilot exhaust port 82/84: connection to supply plate only For operating pressure in the range –0.9 ... 10 bar (suitable for vacuum)

Pneumatic interface					
Code	Pneumatic interface design variants		Size		Notes
	Graphic symbol	Type	1	2	
M		VMPA-...-EPL-...	■	■	<ul style="list-style-type: none"> Used together with compressed air supply S, T, V, X The pilot exhaust air must be vented at least at one supply plate when using V or X. In the case of multiple supply plates, the port 82/84 is open on the last supply plate ex works

Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Supply plate

Additional supply plates can be used for larger terminals or to create additional pressure zones.

If several valves are operated simultaneously at full flow rate, it is recommended that a supply plate be positioned after every 8 valves (MPA1), or 4 valves (MPA2).

Supply plates can be configured at any point upstream or downstream of the manifold blocks. This applies to the following interfaces:

- MPA with CPX
- MPA with multi-pin plug connection
- MPA with AS-interface connection
- MPA with CPI connection

MPA with ducted exhaust air

At least one supply plate via which the exhaust port 82/84 is vented is required with ducted exhaust air.

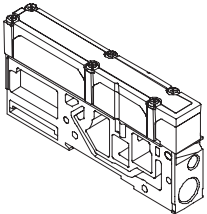
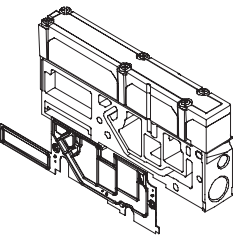
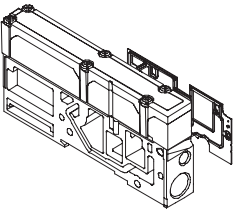
Supply plates contain the ports:

- Compressed air supply (1)
- Venting of the pilot air supply (82/84) and pressure compensation
- Exhaust air 3/5

Depending on your order, the exhaust air channels are either ducted or vented via the flat plate silencer.

The supply plate is configured using the code letter U if no directly adjoining separating seal is required.

If a separating seal (S, T or R) is selected directly to the right or left of the supply plate, then the code letter V or W identifies the position of the left-hand or right-hand separating seal. The code for the separating seal (S, T or R) is placed in front of the code for the supply plate (V or W).

Supply plate					
Code ¹⁾	Graphic symbol	Type	Size		Notes
			1	2	
U		VMPA1-...-SP...	■	■	Supply plate without separating seal (no R, S or T selected)
V		VMPA1-...-SP...	■	■	Supply plate with separating seal on left, if R, S or T selected
W		VMPA1-...-SP...	■	■	Supply plate with separating seal on right, if R, S or T selected

1) The supply plate is equipped with silencer or exhaust plate depending on the code for the air supply S, T, V, X.

Valve terminals type 32 MPA

Key features – Electrical components

FESTO

Electrical supply plate

Additional electrical supply plates can be used for large terminals. This enables up to 64 valve positions/128 solenoid coils to be supplied.

MPA with CPX

Electrical supply plates can be configured at any point upstream or downstream of manifold blocks.

MPA with CPI connection

Electrical supply plates can be configured at any point upstream or downstream of manifold blocks.

MPA with MPM connection (modular multi-pin plug)

The restriction to 12 valve positions/24 solenoid coils means that no electrical supply plates are needed.

MPA with AS-interface connection

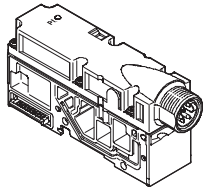
The restriction to 8 valve positions/8 solenoid coils means that no electrical supply plates are needed.



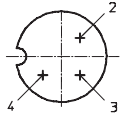
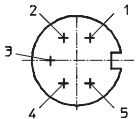
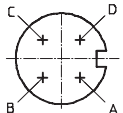
Note

Please note that only electronics modules with electrical isolation are permitted to the right of the electrical supply plate. The electrical supply plate must not be installed directly to the left of a pneumatic supply plate (type VMPA1-FB-SP..).

Electrical supply plate

Code	Graphic symbol	Type	Size		Notes
			1	2	
L		VMPA-FB-SP-V-SP	■	■	Electrical supply plate with M18 plug connection, 3-pin
		VMPA-FB-SP-7/8-V-5POL	■	■	Electrical supply plate with 7/8" plug connection, 5-pin
		VMPA-FB-SP-7/8-V-4POL	■	■	Electrical supply plate with 7/8" plug connection, 4-pin

Pin allocation for voltage supply

	Pin	Allocation
Pin allocation for M18		
	2	24 V DC valves
	3	0 V DC
	4	FE (earth)
Pin allocation for 7/8", 5-pin		
	1	0 V DC valves
	2	n.c.
	3	FE (leading)
	4	n.c.
	5	24 V DC valves
Pin allocation for 7/8", 4-pin		
	A	n.c.
	B	24 V DC valves
	C	FE (earth)
	D	0 V DC valves (leading)

Valve terminals type 32 MPA

Key features – Pneumatic components

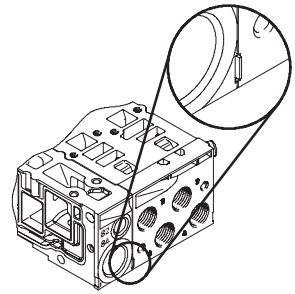
FESTO

Creation of pressure zones and separation of exhaust air

MPA offers a number of options for creating pressure zones if different working pressures are required. A pressure zone is created by isolating the internal supply ducts between the manifold blocks using an appropriate separating seal or using a separator that is firmly incorporated in the manifold block (code I or code III).

Compressed air is supplied and vented by using a supply plate. The position of the supply plates and separating seals can be freely selected for the MPA valve terminal.

Separating seals are integrated ex-works as per your order. Separating seals can be distinguished through their coding, even when the valve terminal is assembled.



Note

The following must be taken into consideration with subsequent expansion or conversions:

Operating with ducted exhaust air and operating with flat plate silencers require different separating seals.

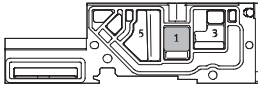

Creating pressure zones

Code	Separating seal for operating with flat plate silencer		Separating seal for operating with ducted exhaust air		Size		Notes
	Pictorial examples	Coding	Pictorial examples	Coding	1	2	
–	 VMPA...-DPU	 VMPA...-DP	 VMPA...-DP	 VMPA...-DP-P	■	■	No duct separation
T	 VMPA...-DPU-P	 VMPA...-DP-P	 VMPA...-DP-P	 VMPA...-DP-PRS	■	■	Duct 1 separated
S	 VMPA...-DPU-PRS	 VMPA...-DP-PRS	 VMPA...-DP-PRS	 VMPA...-DP-RS	■	■	Duct 1 and 3/5 separated
R	 VMPA...-DPU-RS	 VMPA...-DP-RS	 VMPA...-DP-RS	 VMPA...-DP-RS	■	■	Duct 3/5 separated

Valve terminals type 32 MPA

Key features – Pneumatic components



Creating pressure zones						
Code	Duct separation in manifold block for operating with flat plate silencer or with ducted exhaust air			Size		Notes
	Pictorial examples		Coding	1	2	
I			–	■	■	Duct 1 separated
III			–	■	■	Duct 1 and 3/5 separated



Note

The duct separation cannot be removed at a later date and takes place in the centre of the manifold block

- With size 1 between valves 2 and 3
- With size 2 between valves 1 and 2

Valve terminals type 32 MPA

Key features – Pneumatic components

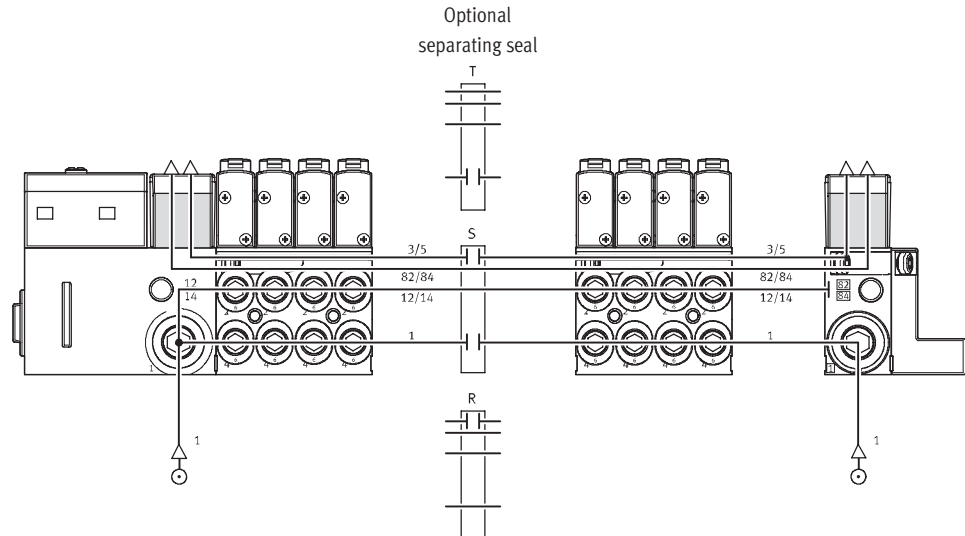
FESTO

Examples: Compressed air supply and pilot air supply

Internal pilot air supply, flat plate silencer

Air supply to the valve terminal:
code S

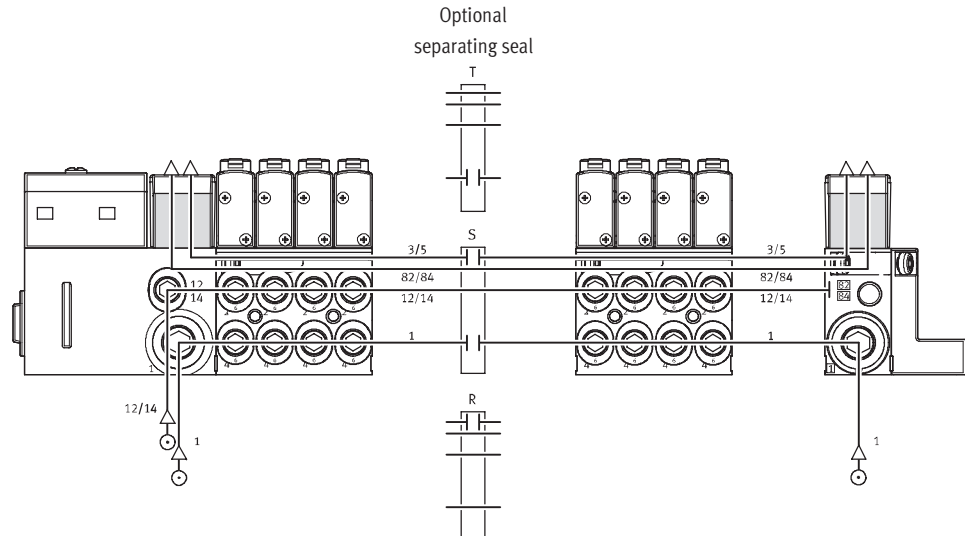
The diagram opposite shows an example of the configuration and connection of the air supply in the case of internal pilot air supply. Port 12/14 on the pneumatic interface or the electrical interface (multi-pin plug) as appropriate is tightly sealed. Ports 3/5 and 82/84 are vented via the flat plate silencer. Port 82/84 is tightly sealed. Separating seals can be used optionally to create pressure zones.



External pilot air supply, flat plate silencer

Air supply to the valve terminal:
code T

The diagram opposite shows an example of the configuration and connection of the compressed air supply with external pilot air supply. Port 12/14 on the pneumatic interface/electrical interface (multi-pin plug) is equipped with a threaded connector for this purpose. Ports 3/5 and 82/84 are vented via the flat plate silencer. Port 82/84 is tightly sealed. Separating seals can be used optionally to create pressure zones.



Valve terminals type 32 MPA

Key features – Pneumatic components

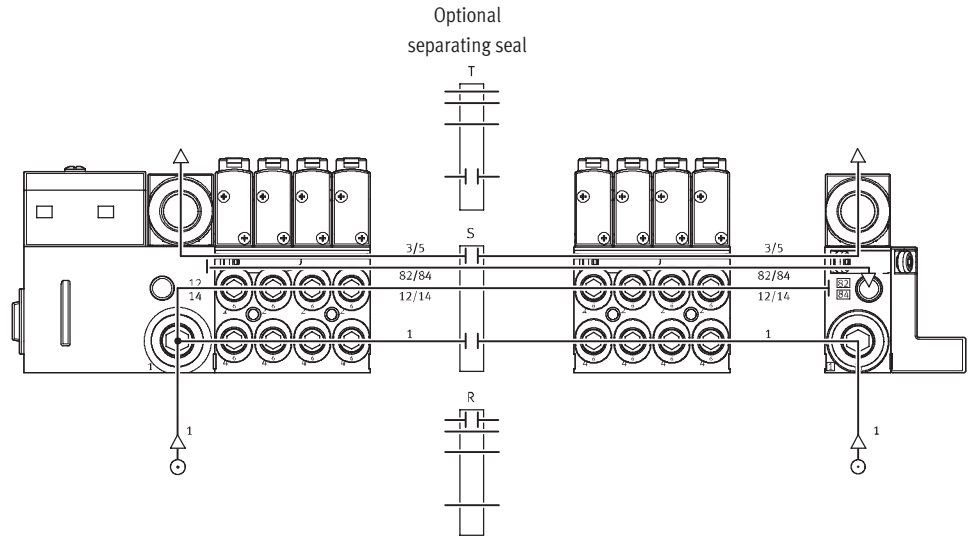
FESTO

Examples: Compressed air supply and pilot air supply

Internal pilot air, ducted exhaust air

Air supply to the valve terminal:
code V

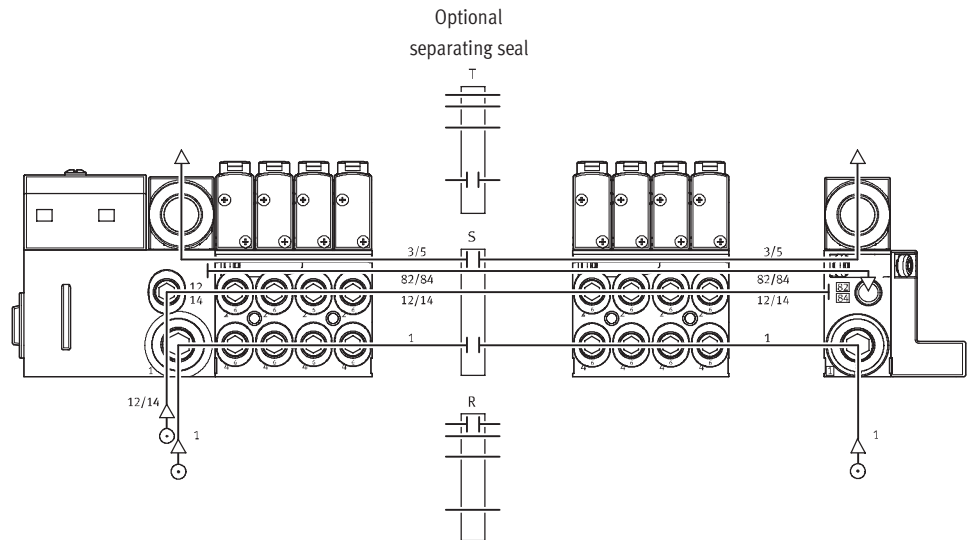
The diagram opposite shows an example of the configuration and connection of the compressed air supply with internal pilot air. Port 12/14 on the pneumatic interface/electrical interface (multi-pin plug) is tightly sealed. Ports 3/5 and 82/84 are vented via the appropriate connections. Separating seals can be used optionally to create pressure zones.



External pilot air supply, ducted exhaust air

Air supply to the valve terminal:
code X

The diagram opposite shows an example of the configuration and connection of the compressed air supply with external pilot air supply. Port 12/14 on the pneumatic interface/electrical interface (multi-pin plug) is equipped with a threaded connector for this purpose. Ports 3/5 and 82/84 are vented via the appropriate connections. Separating seals can be used optionally to create pressure zones.



Valve terminals type 32 MPA

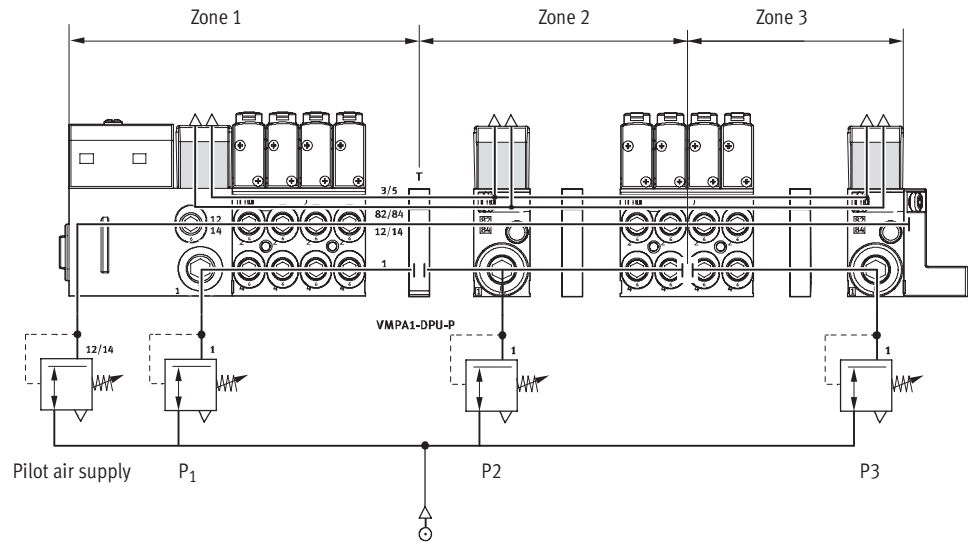
Key features – Pneumatic components

FESTO

Examples: Creating pressure zones

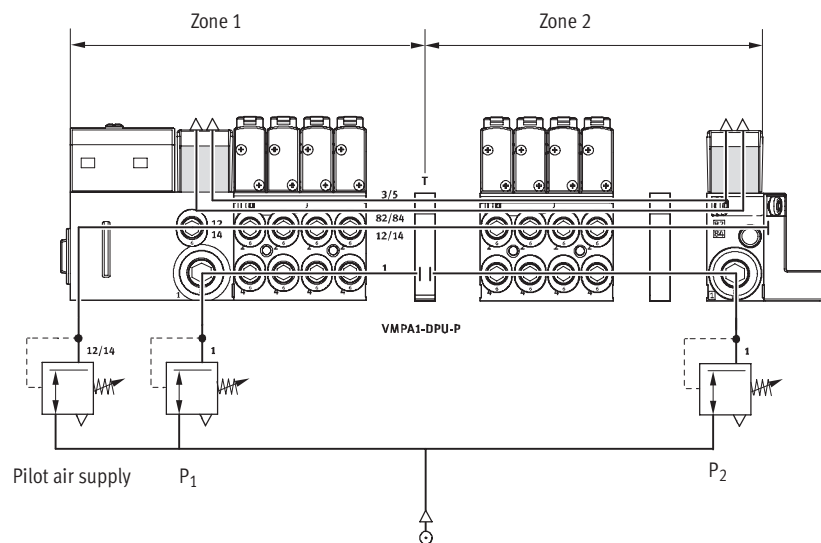
MPA with CPX terminal connection

MPA facilitates the creation of up to 8 pressure zones. The diagram shows an example of the configuration and connection of three pressure zones using separating seals – with external pilot air supply.



MPA with multi-pin plug connection

This design facilitates the creation of up to 12 pressure zones. The diagram shows an example of the configuration and connection of the pressure zones – with external pilot air supply.



Valve terminals type 32 MPA

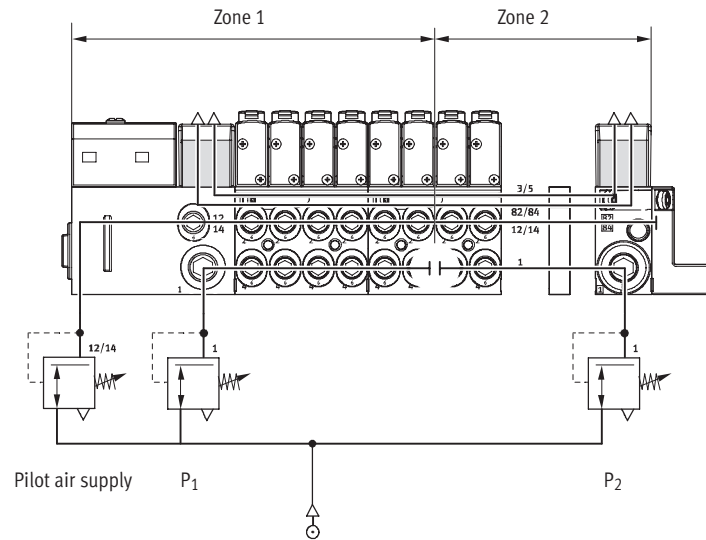
Key features – Pneumatic components

FESTO

Examples: Creating pressure zones

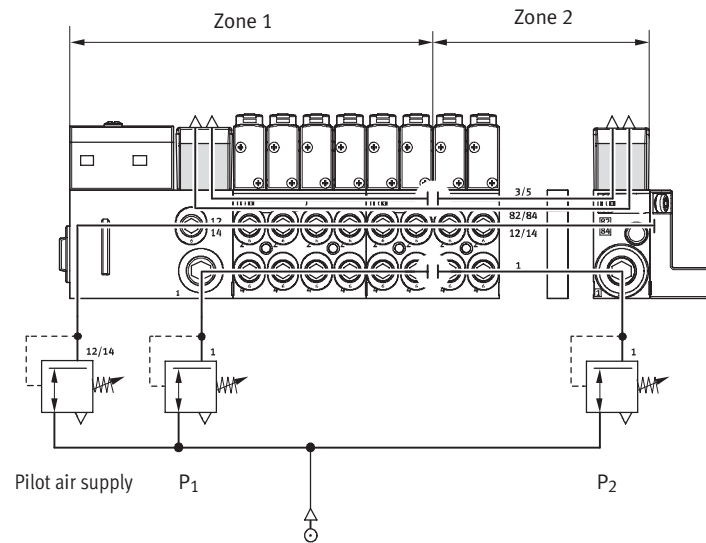
Manifold block with pressure zone separation duct 1

Another way of creating pressure zones is to use manifold blocks with pressure zone separation. The adjacent diagram shows the variant with pressure zone separation in duct 1.



Manifold block with pressure zone separation duct 1 and duct 3/5

The adjacent diagram shows the variant with pressure zone separation in duct 1 and 3/5.

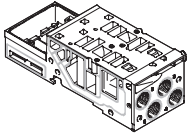


Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Sub-base



MPA is based on a modular system which consists of manifold blocks and valves. The manifold blocks are screwed together and thus form the support system for the valves. The manifold blocks contain the

connection ducts for supplying compressed air to and venting from the valve terminal as well as the working lines for the pneumatic drives for each valve. Each manifold block is connected to

the next using three screws. Individual terminal sections can be isolated and further manifold blocks inserted by loosening these screws. This ensures that the valve terminal can be rapidly and reliably extended.

Sub-base variants						
Code	Graphic symbol	Type	Size		Number of valve positions (solenoid coils)	Notes
			1	2		
Manifold block for multi-pin plug/fieldbus connection						
A, C*		VMPA1-FB-AP-4-1	■	-	4 (8/4*)	Working lines (2, 4) on the manifold block <ul style="list-style-type: none">• Connection sizes: MPA1: M7, QS4, QS6• Code I: Separation in duct 1 in the manifold block• Code III: Separation in duct 1 and duct 3/5 in the manifold block
AI, CI*		VMPA1-FB-AP-4-1-T1				
AIII, CIII*		VMPA1-FB-AP-4-1-S1				
B, D*		VMPA2-FB-AP-2-1	-	■	2 (4/2*)	Working lines (2, 4) on the manifold block <ul style="list-style-type: none">• Connection sizes MPA2: G1/8, QS6, QS8• Code I: Separation in duct 1 in the sub-base• Code III: Separation in duct 1 and duct 3/5 in the manifold block
BI, DI*		VMPA2-FB-AP-2-1-T0				
BIII, DIII*		VMPA2-FB-AP-2-1-S0				
Individual sub-base						
-		Without ATEX approval: VMPA1-1-IC-AP-1** VMPA1-1-IC-AP-S-1***	■	-	1 (2)	<ul style="list-style-type: none">• With working lines MPA1: M7, QS4, QS6• With ports for compressed air (1, 12/14) and exhaust air (3, 5, 82/84)• For internal or external pilot air supply
		With ATEX approval: VMPA1-1-IC-AP-1-EX1** VMPA1-1-IC-AP-S-1-EX1***				
-		Without ATEX approval: VMPA2-IC-AP-1** VMPA2-IC-AP-S-1***	-	■	1 (2)	<ul style="list-style-type: none">• With working lines MPA2: G1/8, QS6, QS8• With ports for compressed air (1, 12/14) and exhaust air (3, 5, 82/84)• For internal or external pilot air supply
		With ATEX approval: VMPA2-IC-AP-1-EX1** VMPA2-IC-AP-S-1-EX1***				

* Only possible with multi-pin plug connection

** Internal pilot air supply

*** External pilot air supply

Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Pressure sensor

Via three LEDs the pressure sensor shows whether the pressure applied exceeds, observes or is less than the nominal value.

The pressure in the exhaust duct (3/5) and the processing pressure (external) can also be measured.

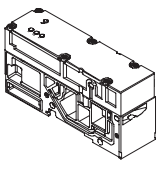
An additional LED shows common faults (whether the upper or lower limits are exceeded).
The limit values for the pressure

The pressure measurement in the exhaust duct serves for monitoring the degree of silencer contamination or

monitoring are set via parametrizing. You can parametrize the pressure sensor plate via the PLC or the Festo Handheld (CPXMMI).

for monitoring the operating pressure with reversible operation (supply in (3/5).

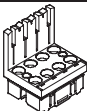
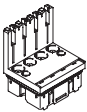
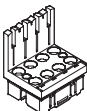
Pressure sensor variants


Code	Symbols	Type	Application
PE		VMPA-FB-PS-1	Monitoring the operating pressure in ductl 1
PF		VMPA-FB-PS-3/5	Monitoring the pressure in the exhaust duct 3 and 5 (monitoring the exhaust output or pressure monitoring with a reversibly operated valve terminal)
PG		VMPA-FB-PS-P1	Monitoring an external processing pressure

Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Electrical interface variants						
Code	Graphic symbol	Type	Size		Number of valve positions (solenoid coils)	Notes
			1	2		
Electronics module for multi-pin plug (MPM)						
A, B, C, D		VMPA1-MPM-EMM-8 VMPA1-MPM-EMM-4	■	—	4 (8) 4 (4)	Each solenoid coil must be assigned to a specific pin of the multi-pin plug for the valve to be actuated. Regardless of the blanking plates or valves used, valve positions occupy <ul style="list-style-type: none">• 1 address for activation of 1 coil• 2 addresses for activation of 2 coils
		VMPA2-MPM-EMM-4 VMPA2-MPM-EMM-2	—	■	2 (4) 2 (2)	
Electronics module for fieldbus						
A, B, H		VMPA...-FB-EMS-... VMPA...-FB-EMG-...	■	—	4 (8)	The electronics module contains the serial communication system and facilitates: <ul style="list-style-type: none">• Transmission of switching information• Activation of up to 8 solenoid coils• Position-based diagnostics• Separate voltage supply for valves• Transmission of status, parameter and diagnostic data There are two variants: <ul style="list-style-type: none">• Not galvanically isolated (VMPA...-FB-EMS-...)• Galvanically isolated (VMPA...-FB-EMG-...)
			—	■	2 (4)	

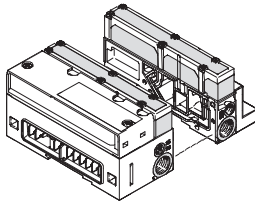
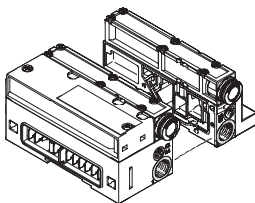
–  Note

- Multi-pin plug with modular linking
- Manifold blocks MPA1 and MPA2 can be combined as required
- Positive or negative switching activation is possible (mixed operation is not permitted)
- Double solenoid valves cannot be mounted on single solenoid electronics modules
- Single solenoid valves can be mounted on double solenoid electronics modules

Valve terminals type 32 MPA

Key features – Pneumatic components

FESTO

Ports for supply and exhaust							
Code		Port	Designation	Code L Push-in connector Large	Code K Push-in connector Small	Code D Thread for supply	
S		Internal pilot air supply, silencer					
		1	Compressed air/ vacuum supply	Push-in fitting	QS-G $\frac{1}{4}$ -10-I	QS-G $\frac{1}{4}$ -8-I	G $\frac{1}{4}$
		3/5	Exhaust	Flat plate silencer	–	–	–
		12/14	Pilot air	–	–	–	–
		82/84	Pilot exhaust air	Flat plate silencer	–	–	–
		Pressure compensation		Vents into the atmosphere via silencer			
T		External pilot air supply, silencer					
		1	Compressed air/ vacuum supply	Push-in fitting	QS-G $\frac{1}{4}$ -10-I	QS-G $\frac{1}{4}$ -8-I	G $\frac{1}{4}$
		3/5	Exhaust	Flat plate silencer	–	–	–
		12/14	Pilot air	Push-in fitting	QSM-M7-6-I	QSM-M7-6-I	M7
		82/84	Pilot exhaust air	Flat plate silencer	–	–	–
		Pressure compensation		Vents into the atmosphere via silencer			
V		Internal pilot air supply, ducted exhaust air					
		1	Compressed air/ vacuum supply	Push-in fitting	QS-G $\frac{1}{4}$ -10-I	QS-G $\frac{1}{4}$ -8-I	G $\frac{1}{4}$
		3/5	Exhaust	Push-in fitting	QS-10	QS-10	QS-10
		12/14	Pilot air supply	–	–	–	–
		82/84	Pilot exhaust air	Push-in fitting	QSM-M7-6-I	QSM-M7-6-I	M7
		Pressure compensation		Vented into duct 82/84			
X		External pilot air supply, ducted exhaust air					
		1	Compressed air/ vacuum supply	Push-in fitting	QS-G $\frac{1}{4}$ -10-I	QS-G $\frac{1}{4}$ -8-I	G $\frac{1}{4}$
		3/5	Exhaust	Push-in fitting	QS-10	QS-10	QS-10
		12/14	Pilot air supply	Push-in fitting	QSM-M7-6-I	QSM-M7-6-I	M7
		82/84	Pilot exhaust air	Push-in fitting	QSM-M7-6-I	QSM-M7-6-I	M7
		Pressure compensation		Vented into duct 82/84			

Valve terminals type 32 MPA

Key features – Assembly

FESTO

Valve terminal assembly

Sturdy terminal attachment thanks to:

- Four through-holes for wall mounting
- Additional mounting bracket
- H-rail mounting

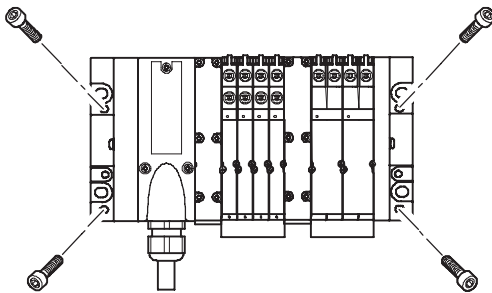


Note

When wall-mounting MPA valve terminals with more than 4 manifold blocks use additional mounting brackets of type VMPA-BG-RW to

prevent damage to the valve terminal. The mounting brackets can be mounted on the pneumatic supply plates.

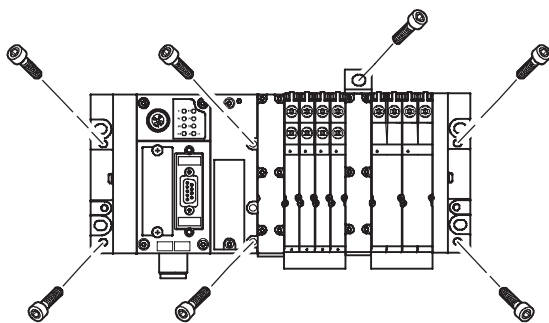
Wall mounting – Multi-pin plug connection, AS-interface and CPI connection



The MPA valve terminal is screwed onto the mounting surface using four M4 or M6 screws. The mounting holes are on the pneumatic interface

and on the right end plate. In addition, there are optional mounting brackets available.

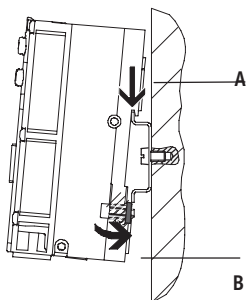
Wall mounting – Fieldbus connection



The MPA valve terminal is screwed onto the mounting surface using six M4 or M6 screws. The mounting holes are on the left end plate (CPX)

and on the right end plate MPA. The pneumatic interface additionally provides further mounting holes as well as optional mounting brackets.

H-rail mounting



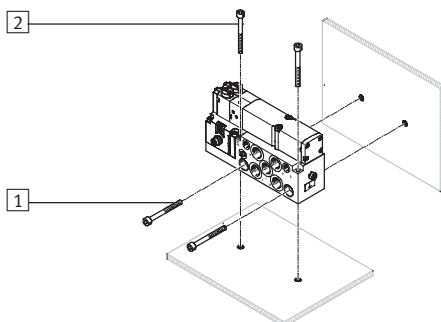
The MPA valve terminal is attached to the H-rail (see arrow A). The terminal is then swivelled about the H-rail and secured in place with the clamping component (see arrow B).

For H-rail mounting of the valve terminal you will need the following MPA mounting kit:

- With multi-pin plug: CPA-BG-NRH
- With fieldbus: CPX-CPA-BG-NRH

This enables mounting of the valve terminal on a H-rail to EN 60715.

Individual valve assembly



- 1 Horizontal mounting holes
- 2 Vertical mounting holes

The individual sub-base is designed for wall mounting or for integration into a system or machine. It can be mounted horizontally or vertically.

Valve terminals type 32 MPA

Key features – Display and operation

FESTO

Display and operation

Each valve solenoid coil is allocated an LED which indicates its signal status.

- Indicator 12 shows the switching status of the coil for output 2
- Indicator 14 shows the switching status of the coil for output 4

Manual override

The manual override (MO) enables the valve to be actuated when not galvanically activated or energised. The valve is actuated by pushing the manual override. The set switching status can also be detented by

rotating the manual override (code R or as accessory).

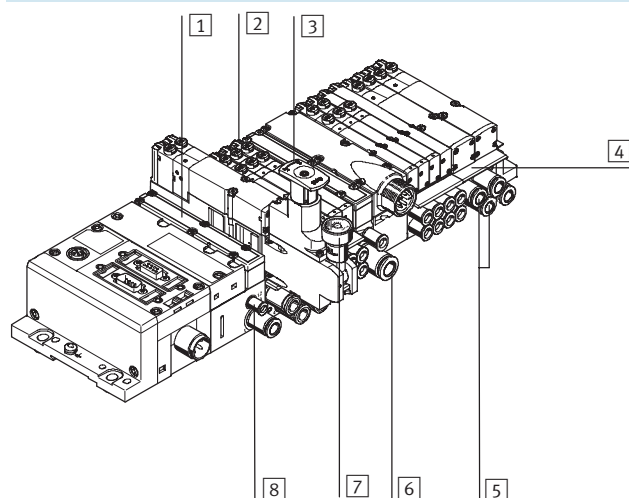
Alternatives:

- A cover (code N or as accessory) can be fitted to prevent the manual override from being detented. The

manual override can only be activated by pressing it.

- A cover (code V) can be fitted over the manual override to prevent it from being activated accidentally.

Pneumatic connection and control elements

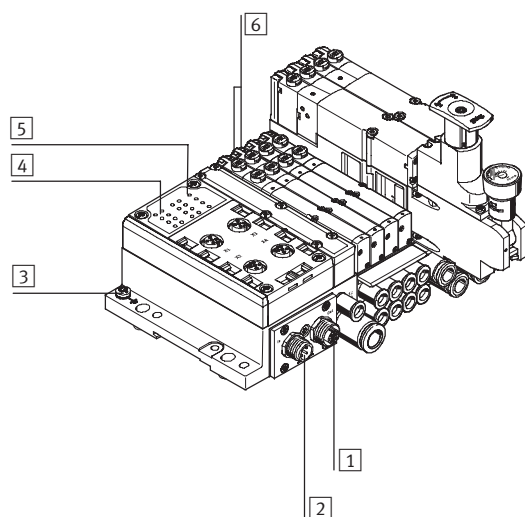


- 1 Flat plate silencer exhaust air 3/5
- 2 Manual override (for each pilot solenoid coil, non-detenting or detenting)
- 3 Adjusting knob of optional pressure regulator plate
- 4 Inscription label holder for sub-base
- 5 Working ports 2 and 4, for each valve position
- 6 Supply port 1
- 7 Pressure gauge (optional)
- 8 Ports 12 and 14 for supplying the external pilot air

- - Note

A manually actuated valve (manual override) cannot be reset electrically. Conversely, an electrically actuated valve cannot be reset using the mechanical manual override.

Electrical connection and display components AS-interface



- 1 M12 socket AS-interface bus and additional supply (AS-i Out)
- 2 M12 plug AS-interface bus and additional supply (AS-i In)
- 3 Earth terminal
- 4 Status LEDs inputs
- 5 Status LEDs AS-interface
- 6 Diagnostic LEDs on valves

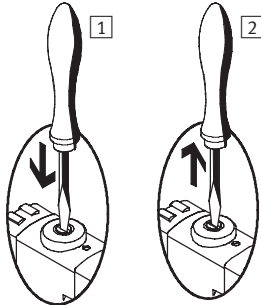
Valve terminals type 32 MPA

Key features – Display and operation

FESTO

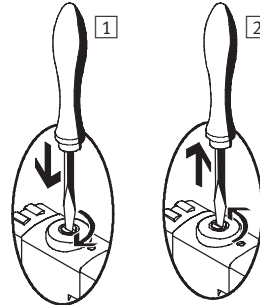
Manual override (MO)

Manual override via pushing (non-detenting)



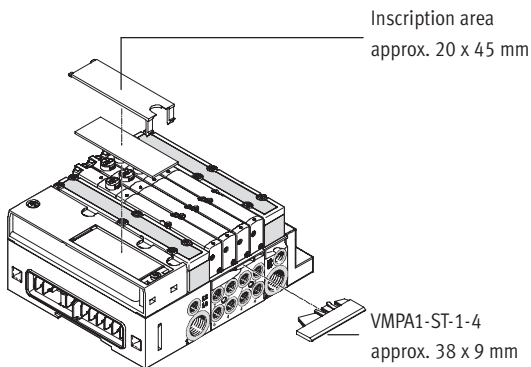
- 1 Press in the stem of the MO with a pin or screwdriver. Pilot valve switches and actuates the main valve.
- 2 Remove the pin or screwdriver. Spring force pushes the stem of the MO back. Pilot valve returns to initial position and so too the single solenoid main valve (not with double solenoid valve code J).

Manual override via turning (detenting)



- 1 Press in the stem of the MO with a pin or screwdriver until the valve switches and then turn the stem clockwise by 90° until the stop is reached. Valve remains activated.
- 2 Turn the stem anti-clockwise by 90° until the stop is reached and then remove the pin or screwdriver. Spring force pushes the stem of the MO back. Valve returns to initial position (not with double solenoid valve code J).

Inscription system



An inscription label holder VMPA1-ST-1-4 (Part No. 533 362, code T in the order code) or VMPA1-ST-2-4 (Part No. 544 384, for fitting IBS-6x10 inscription labels) can be mounted on each manifold block with a width of 42 mm for labelling the valves.

Large inscription labels can be applied to the pneumatic interface as an alternative or complement to the smaller labels.

The following inscription labels can be used as spares:

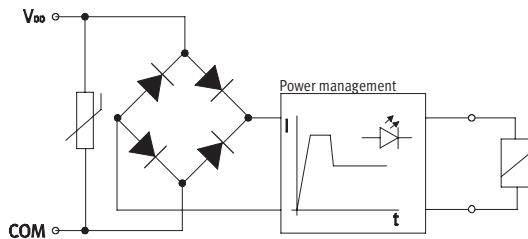
- Inscription label MPA (20 x 45 mm): Part No. 663 010

Valve terminals type 32 MPA

Key features – Electrical components

FESTO

Electrical power as a result of current reduction



Each MPA solenoid coil is protected with a spark arresting protective circuit as well as against polarity reversal. All valve types are additionally equipped with integrated current reduction.

MPA valves are supplied with operating voltage in the range 18 ... 30 V (24 V \pm 25%). This high tolerance is made possible through integrated control electronics and offers additional security, e.g. if the operating voltage drops.

Individual valve

Valves can also be used on individual sub-bases in the case of actuators further away from the valve terminal.

- Detachable electronics module with integrated holding current reduction
- Electrical M8 connection, 4-pin with screw connection

Electrical multi-pin plug connection

The following multi-pin plug connection is offered for the valve terminal MPA:

- Sub-D multi-pin plug connection (25-pin)

Pins 1 ... 24 are used for addresses 1 ... 24 in order.

If fewer than 24 addresses are used for the valve terminal, the remaining

pins up to 24 are left free. Pin 25 is reserved for the neutral conductor. The valves are switched by means of positive or negative logic (PNP or NPN). Mixed operation is not permitted.

Each pin on the multi-pin plug can actuate exactly one solenoid coil. If the maximum configurable number

of valve positions is 24, this means that 24 valves can be addressed with one solenoid coil.

With 12 or less valve positions, 2 solenoid coils per valve can be addressed. With 12 or more valve positions, the number of available valve positions for valves with two solenoid coils decreases.



Note




If a single solenoid valve is assembled on a double solenoid valve position, the second address is also occupied and cannot be used.

Guidelines on addressing for valves/valve solenoids

- The maximum possible number of addresses with a multi-pin plug connection is 24.
 - Manifold block MPA1 for 4 double solenoid valves: 8
 - Manifold block MPA2 for 2 single solenoid valves: 2
 - Manifold block MPA2 for 2 double solenoid valves: 4
- The numbering of the addresses goes from left to right in ascending consecutive order. The following holds true at the individual valve positions: Address x for coil 14 and address x+1 for coil 12.
- If single solenoid valves are mounted on manifold blocks for double solenoid valves, the address of coil 12 and the assigned pin will remain unused.

Valve terminals type 32 MPA

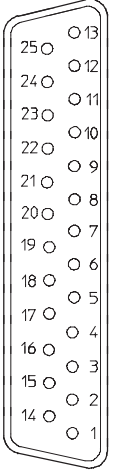

Key features – Electrical components

Fieldbus connection AS-interface®			
The AS-interface facilitates the spatial distribution of individual components or small component groups. The AS-interface connection of valve	terminal type 32 can be used to control up to 8 solenoid coils. The valve terminal's electrical	connection contains the LEDs which indicate the operating status and the protective circuit for the valves.	<div> Note</div> <div>Further information can be found in</div> <div>➔ Internet: as-interface</div>
Fieldbus connection CPI			
All CP valve terminals and CP modules are connected using a ready to install CP cable, and are attached to the CP interface. Four modules, for example	one CPV valve terminal and one to three CP input modules, make up an installation string that ends at the CP interface. The installation system	supports a maximum of 4 installation strings, which can be connected to a CP fieldbus node.	<div> Note</div> <div>Further information can be found in</div> <div>➔ Internet: cpi</div>
Fieldbus connection CPX			
All functions and features of the electrical peripherals CPX are permitted in connection with the CPX interface. This means	<ul style="list-style-type: none">• The valves and electrical outputs are supplied via the operating voltage connection CPX• The valves are supplied and disconnected separately via a separate port on the CPX (code V)		<div> Note</div> <div>Further information can be found in</div> <div>➔ Internet: cpx</div>

Valve terminals type 32 MPA

Key features – Electrical components

FESTO

Pin allocation – Sub-D socket, cable							
	Pin	Address/coil	Wire colour ²⁾		Pin	Address/coil	Wire colour ²⁾
	1	0	WH		17	16	WH PK
	2	1	GN		18	17	PK BN
	3	2	YE		19	18	WH BU
	4	3	GY		20	19	BN BU
	5	4	PK		21	20	WH RD
	6	5	BU		22	21	BN RD
	7	6	RD		23	22	WH BK
	8	7	VT		24	23	BN
	9	8	GY PK		25	0 V ¹⁾	BK
	10	9	RD BU				
	11	10	WH GN				
	12	11	BN GN				
	13	12	WH YE				
	14	13	YE BN				
	15	14	WH GY				
	16	15	GY BN				
 Note The drawing shows the view on the Sub-D socket at the multi-pin plug cable VMPA-KMS1-....							

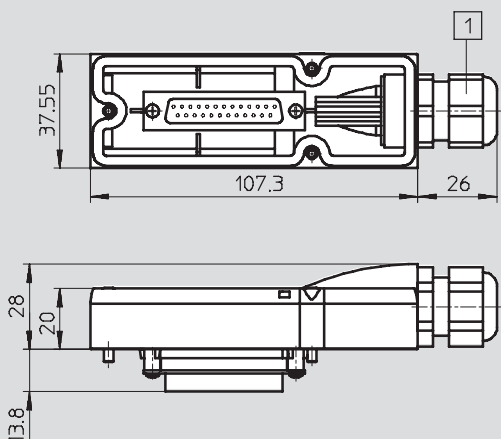
1) 0 V for positive switching control signals; connect 24 V for negative switching control signals; mixed operation is not permitted.

2) To IEC 757

Dimensions

Connecting cables

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



1 Cable conduit fitting with clamping range 6 ... 12 mm

The core colours refer to the following pre-assembled multi-pin cables from Festo:

- VMPA-KMS1-8-... valve terminal for up to 4 valve positions (8 coils)
- VMPA-KMS1-24-... valve terminal with 8 ... 24 valve positions

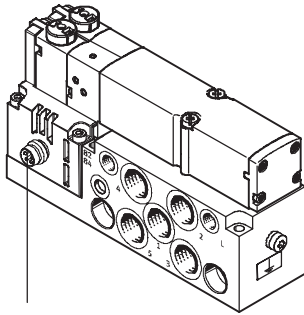
Type	Sheath	Length [m]	Core x mm ²	D [mm]	Part no.
VMPA-KMS1-8-2.5	PVC	2.5	10 x 0.34	6.9	533 195
VMPA-KMS2-8-2.5-PUR	PUR	2.5	10 x 0.25	8.3	533 504
VMPA-KMS1-8-5	PVC	5	10 x 0.34	6.9	533 196
VMPA-KMS2-8-5-PUR	PUR	5	10 x 0.25	8.3	533 505
VMPA-KMS1-8-10	PVC	10	10 x 0.34	6.9	533 197
VMPA-KMS2-8-10-PUR	PUR	10	10 x 0.25	8.3	533 506
VMPA-KMS1-24-2.5	PVC	2.5	25 x 0.34	11.4	533 192
VMPA-KMS2-24-2.5-PUR	PUR	2.5	25 x 0.25	11.2	533 501
VMPA-KMS1-24-5	PVC	5	25 x 0.34	11.4	533 193
VMPA-KMS2-24-5-PUR	PUR	5	25 x 0.25	11.2	533 502
VMPA-KMS1-24-10	PVC	10	25 x 0.34	11.4	533 194
VMPA-KMS2-24-10-PUR	PUR	10	25 x 0.25	11.2	533 503
VMPA-KMS-H	Cover for self-assembly				533 198

Valve terminals type 32 MPA

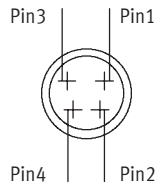
Key features – Electrical components

FESTO

Electrical connection – Individual valve interface



Connector plug M8 x 1, 4-pin to
EN 60 947-5-2



Pin allocation on individual valve to VDMA 24571

With positive logic:

Pin1 – Not allocated

Pin2 – V_B for coil 12

Pin3 – 0 V for coils 12 and 14

Pin4 – V_B for coil 14

With negative logic:

Pin1 – Not allocated

Pin2 – 0 V for coil 12

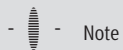
Pin3 – V_B for coils 12 and 14

Pin4 – 0 V for coil 14

Tightening torque for M8 plug

0.25 ... 0.5 Nm (manual torque)

Connecting cables				
Type	Designation	Design	Cable length [m]	Part no.
SIM-M8-4GD-2,5-PU	Plug socket cable	Straight socket	2.5	158 960
SIM-M8-4GD-5-PU	Plug socket cable	Straight socket	5	158 961
SIM-M8-4WD-2,5-PU	Plug socket cable	Angled socket	2.5	158 962
SIM-M8-4WD-5-PU	Plug socket cable	Angled socket	5	158 963
NEBU-M8G4-K-2.5-LE4	Plug socket cable	Straight socket	2.5	541 342
NEBU-M8G4-K-5-LE4	Plug socket cable	Straight socket	5	541 343
NEBU-M8W4-K-2.5-LE4	Plug socket cable	Angled socket	2.5	541 344
NEBU-M8W4-K-5-LE4	Plug socket cable	Angled socket	5	541 345



Note

Additional variants can be
configured and ordered via the
NEBU modular product system.

→ Internet: nebu

Instructions for use

Equipment

Operate your equipment with unlubricated compressed air if possible. Festo valves and cylinders are designed for operation under normal use without any additional lubrication and still have a long service life. The quality of compressed air downstream from the compressor must correspond to that of unlubricated compressed air. If possible, do not operate all of your equipment with lubricated compressed air. The lubricators should, where possible, always be installed directly upstream of the actuator used.

Incorrect additional oil and too high an oil content in the compressed air reduce the service life of the valve terminal.
Use Festo special oil OFSW-32 or the alternatives listed in the Festo catalogue (as specified in DIN 51524 HLP32; basic oil viscosity 32 CST at 40 °C).

Bio-oils

When using bio-oils (oils which are based upon synthetic or native ester, e.g. rapeseed oil methyl ester), the maximum residual oil content of 0.1 mg/m³ must not be exceeded (see ISO 8573-1 Class 2).


Mineral oils


When using mineral oils (e.g. HLP oils to DIN 51524, parts 1 through 3) or similar oils based on poly-alpha-olefins (PAO), the maximum residual oil content of 5 mg/m³ must not be exceeded (see ISO 8573-1 Class 4). A higher residual oil content irrespective of the compressor oil cannot be permitted, as the basic lubricant would be flushed out over time.


Valve terminals type 32 MPA

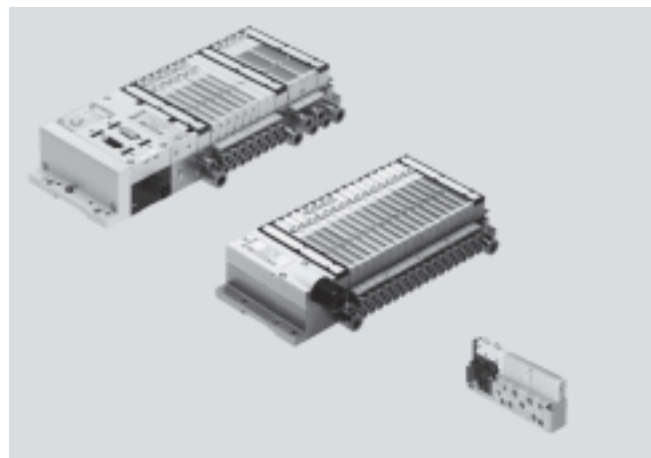
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Technical data

-  - Flow rate
MPA1: Up to 360 l/min
MPA2: Up to 700 l/min

-  - Valve width
MPA1: 10 mm
MPA2: 21 mm

-  - Voltage
24 V DC



General technical data			
		MPA1	MPA2
Design	Electromagnetically actuated piston spool valve		
Lubrication	Life-time lubrication, PWIS-free (free of paint-wetting impairment substances)		
Type of mounting	Wall mounting On DIN H-rail to EN 60715		
Assembly position	As desired		
Manual override	Non-detenting, detenting or blocked		
Width	[mm]	10.5	21
Pneumatic connections			
Pneumatic connection	Via individual connection or manifold block		
Supply port	1	G $\frac{1}{4}$ (M7 with individual sub-base)	
Exhaust port	3/5	QS-10 (M7 with individual sub-base)	
Working ports	2/4	Depending on the connection type selected	
		<ul style="list-style-type: none"> • M7 • QS4 • QS6 	<ul style="list-style-type: none"> • G$\frac{1}{8}$ • QS6 • QS8
Pilot air port	12/14	M7 (M5 with individual sub-base)	
Pilot exhaust air port	82/84	M7 (M5 with individual sub-base)	
Pressure compensation port		With ducted exhaust air: via port 82/84 (M5 with individual sub-base) With flat plate silencer: venting to atmosphere	

Valve terminals type 32 MPA

FESTO

Technical data

Operating and environmental conditions													
Valve function order code	M	J	N	K	H	B	G	E	X	W	D	I	
Operating medium	Filtered compressed air, lubricated or unlubricated, inert gases → 44												
Grade of filtration	[μm]	40											
Operating pressure	[bar]	-0.9 ... +10		3 ... 10			-0.9 ... +10			3 ... 10			
Operating pressure for valve terminal with internal pilot air supply	[bar]	3 ... 8											
Pilot pressure	[bar]	3 ... 8											
Ambient temperature	[°C]	-5 ... +50											
Temperature of medium	[°C]	-5 ... +50											
Storage temperature ¹⁾	[°C]	-20 ... +40											
Relative air humidity at 40 °C	[%]	90											
Certification	c UL us - Recognised (OL)												
Corrosion resistance class CRC ²⁾	1												

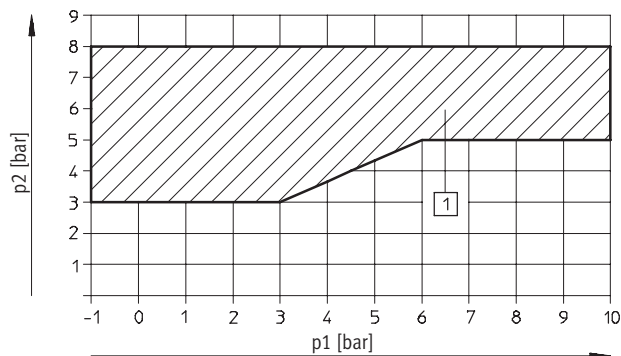
1) Long-term storage

2) Corrosion resistance class 1 as per Festo standard 940 070

Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

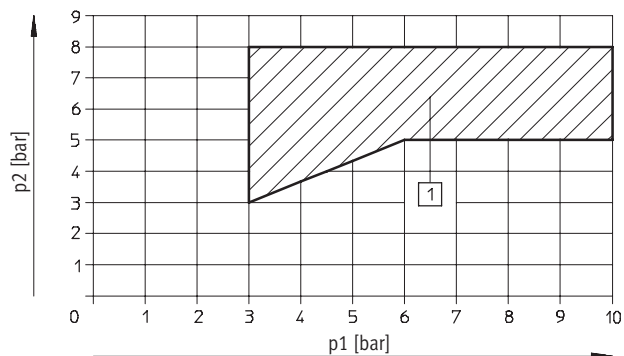
Pilot pressure p₂ as a function of working pressure p₁ with external pilot air

for valves with code M, J, B, G, E, X



1 Operating range for valves with external pilot air supply

for valves with code N, K, H, D, I



1 Operating range for valves with external pilot air supply

Valve terminals type 32 MPA

Technical data

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Certifications ¹⁾			
Type	MPA-MPM-VI (VI with multi-pin plug connection)	MPA-FB-VI (VI with fieldbus connection)	valve on individual sub-base
Part No.	539 105	530 411	→ 57
ATEX symbol	II 3 GD EEx nA II T95° C X IP54	–	–
ATEX ambient temperature [°C]	–5 ≤ Ta ≤ +50	–	–
Certification	c UL us - Recognized (OL)	c UL us - Recognized (OL)	c UL us - Recognized (OL)

1) Non-listed interface variants (e.g. CPI interface or ASI interface) do not possess any of the listed certifications.

Nominal flow rate [l/min] ¹⁾					
Code	Valve function	Without fitting		With fitting ²⁾	
		from port 1 to 2, or 1 to 4	from port 2 to 3/5, or 4 to 3/5	from port 1 to 2, or 1 to 4	from port 2 to 3/5, or 4 to 3/5
MPA1					
M	5/2-way valve, single solenoid	360	360	360	360
J	5/2-way valve, double solenoid	360	360	360	360
N	2x 3/2-way valve, normally open	300	300	300	300
K	2x 3/2-way valve, normally closed	230	310	230	310
H	2x 3/2-way valve, 1x normally open, 1x normally closed	280	305	280	305
B	5/3-way valve, mid-position pressurised	300 (195) ³⁾	270	300 (195) ³⁾	270
G	5/3-way valve, mid-position closed	320	320	320	320
E	5/3-way valve, mid-position exhausted	240	240 (180) ³⁾	240	240 (180) ³⁾
X	1x 3/2-way valve	255	295	255	295
W	1x 3/2-way valve	255	295	255	295
D	2x 2/2-way valve	230	230	230	230
I	2x 2/2-way valve	260	260	230	260
MPA2					
M	5/2-way valve, single solenoid	700	700	660	670
J	5/2-way valve, double solenoid	700	700	660	670
N	2x 3/2-way valve, normally open	560	490	550	480
K	2x 3/2-way valve, normally closed	500	560	500	540
H	2x 3/2-way valve, 1x normally open, 1x normally closed	500	490	500	480
B	5/3-way valve, mid-position pressurised	520	650 (350) ³⁾	510	600 (350) ³⁾
G	5/3-way valve, mid-position closed	630	630	600	610
E	5/3-way valve, mid-position exhausted	610	440 (350) ³⁾	590	420 (350) ³⁾
X	1x 3/2-way valve	500	590	470	560
W	1x 3/2-way valve	500	590	470	560
D	2x 2/2-way valve	680	–	650	–
I	2x 2/2-way valve	680	500	650	500

1) Values also apply to individual sub-bases

2) Flows measured on sub-base with fitting QS-M7-6-I for MPA1 and QS-G1/8-8-I for MPA2

3) Value for mid-position

Valve terminals type 32 MPA



Technical data

Valve response times [ms]													
Valve function order code		M	J	N	K	H	B	G	E	X	W	D	I
MPA1													
Switching times	On	10	10	10	10	10	10	10	10	10	10	10	10
	Off	20	–	20	20	20	35	35	35	20	20	20	20
	change-over	–	15	–	–	–	–	–	–	–	–	–	–
MPA2													
Switching times	On	15	9	8	8	8	11	10	11	13	13	7	7
	Off	28	–	28	28	28	46	40	47	22	22	25	25
	change-over	–	22	–	–	–	23	21	23	–	–	–	–

Valve terminals type 32 MPA

Technical data

FESTO

Electrical data		
MPA with electronics module VMPA...-FB... (CPX terminal, CPI interface)		
Voltage supply for electronics (V _{EL} /SEN)		
Nominal voltage	[V]	24 DC
Operating voltage range	[V]	18 ... 30 DC
Max. intrinsic current consumption per electronics module at 24 V (regardless of the switching status of the valves)	[mA]	20
Load voltage supply for valves (U _{val})		
Nominal voltage	[V]	24 DC
Operating voltage range	[V]	18 ... 30 DC
Max. intrinsic current consumption at 24 V (regardless of the switching status of the valves) per electronics module		
VMPA1-FB-EMS-8 or VMPA2-FB-EMS-4	[mA]	8 not electrically isolated (max. signal line length 10 m)
VMPA1-FB-EMG-8 or VMPA2-FB-EMG-4	[mA]	25 electrically isolated
Diagnostic message on undervoltage U _{OFF} Load voltage outside function range	[V]	17.5 ... 16
Protection class to EN 60529		IP65 (for all types of signal transmission in assembled state)
Max. current consumption per solenoid coil at nominal voltage		MPA1
Nominal pull current	[mA]	45
Nominal current with current reduction	[mA]	8
Time until current reduction	[ms]	20
		MPA2
		90
		18
		20
Calculation example		
Current consumption with two solenoid coils MPA2 switched in parallel and one electronics module without electrical isolation	[mA]	I _{EL/SEN} = 20
Nominal pull current	[mA]	I _{VAL} = 8 + 2 x 90 = 188
Nominal current with current reduction	[mA]	I _{VAL} = 8 + 2 x 18 = 44

MPA with electronics module VMPA...-MPM (ASI interface, multi-pin plug)		
Power supply		
Nominal voltage	[V]	24 DC
Operating voltage range	[V]	18 ... 30 DC
Residual ripple	[Vss]	4
Current consumption at Sub-D multi-pin plug connection per solenoid coil at nominal voltage		MPA1
Nominal pull current	[mA]	80
Nominal current with current reduction	[mA]	25
Time until current reduction	[ms]	25
		MPA2
		100
		20
		50

Valve terminals type 32 MPA

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Technical data

Data on vibration and shock in accordance with DIN/IEC68		
	MPA1	MPA2
Vibration ¹⁾	Tested to DIN/IEC68 / EN 60068 Parts 2 ... 6 With horizontal H-rail mounting: Severity level 1 With wall mounting: ²⁾	
Shock ¹⁾	Tested to DIN/IEC68 / EN 60068 Parts 2 ... 27 With horizontal H-rail mounting: Severity level 1 With wall mounting: Severity level 1 ... ²⁾	
Continuous shock	Tested to DIN/IEC68 / EN 60068 Parts 2 ... 29 With wall and H-rail mounting: Severity level 1	

1) See the CPX System Description for information on vibrations and shock for the CPX terminal.

- 2) MPA valve terminal with MPM connection and more than 5 sub-bases: Severity level 1
Valve terminal MPA with CPX terminal or MPM connection and
up to 5 sub-bases without additional attachments: Severity level 2
6 or more manifold blocks without additional mounting (wall bracket) after 2 to max. 4 manifold blocks: Severity level 2

Test conditions			
Severity level	Vibration	Shock	Continuous shock
1	0.15 mm travel at 10 ... 58 Hz, 2 g acceleration at 58 - 150 Hz	±15 g at 11 ms duration; 5 shocks per direction	±15 g at 6 ms duration; 1000 shocks per direction
2	0.35 mm travel at 10 - 60 Hz; 5 g acceleration at 60 - 150 Hz	±30 g at 11 ms duration; 5 shocks per direction	–
Continuous shock resistance	To DIN/IEC 68/EN 60068, Parts 2-29: +/-15 g at 6 ms, 1000 cycles		

Valve terminals type 32 MPA

Technical data

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Materials	
Manifold block	Die-cast aluminium
Valve	Die-cast aluminium
Seals	NBR, elastomer
Supply plate	Die-cast aluminium
Right-hand end plate	Die-cast aluminium
Left-hand pneumatic interface	Die-cast aluminium, polyamide
Exhaust plate	Polyamide
Flat plate silencer	Polyethylene
Electrical supply plate	Housing: Die-cast aluminium Cover: Reinforced polyamide
Electronics module	Polycarbonate
Electrical link	Bronze/polybutylene terephthalate
Regulator plate	Control section, housing: polyamide; seals: nitrile rubber

Product weight			
Approx. weights	[g]	MPA1	MPA2
Manifold block basic weight ¹⁾		400 (4 valve positions)	400 (2 valve positions)
Sub-base ¹⁾		185	
Individual sub-base		45	
Per valve M, X, W		49	100
Per valve J, N, K, H, B, G, E, D		56	100
Per vacant position L		24	44
Right-hand end plate		55	
Left-hand pneumatic interface ¹⁾			
• With flat plate silencer		315	
• With ducted exhaust air		324	
Supply plate ¹⁾			
• With flat plate silencer		111	
• With ducted exhaust air		120	
Electrical supply plate		200	
Regulator plate (MPA2)		180	
QSM-M5-3-I		3	
QSM-M5-4-I		4	
QSM-M5-6-I		5	
QSM-M7-4-I		6	
QSM-M7-6-I		5	
QS-G ¹ / ₈ -6-I		22	
QS-G ¹ / ₈ -8-I		13	
QS-G ¹ / ₄ -8-I		22	
QS-G ¹ / ₄ -10-I		23	

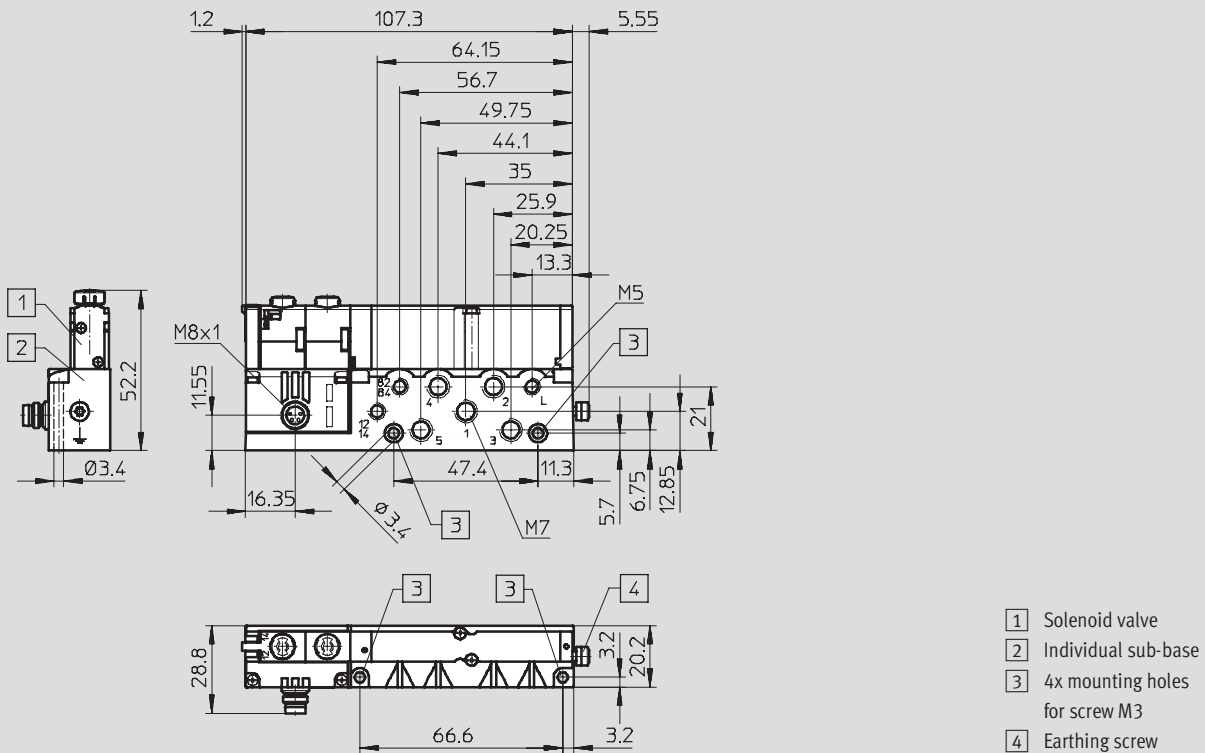
1) With thin metal seal, inscription label holder, screws

Technical data

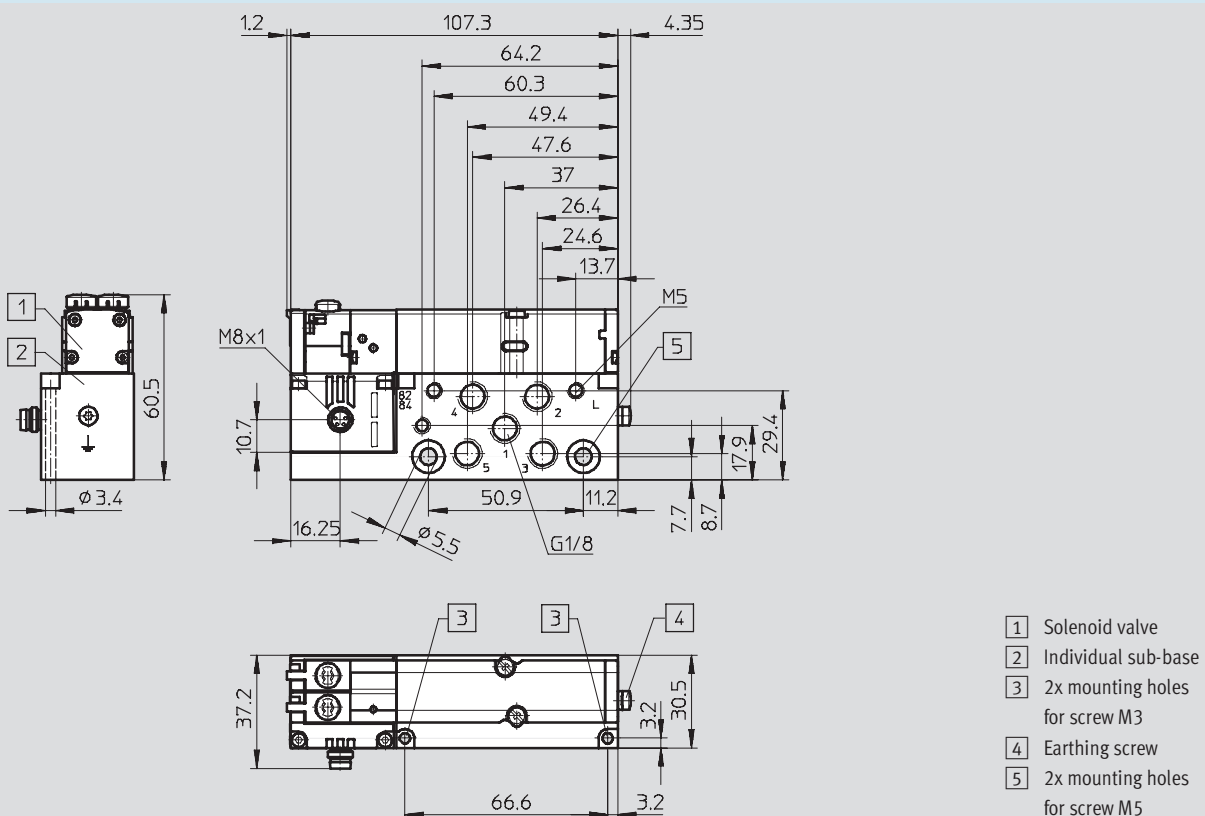
Dimensions

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MPA1 valve on individual sub-base



MPA2 valve on individual sub-base

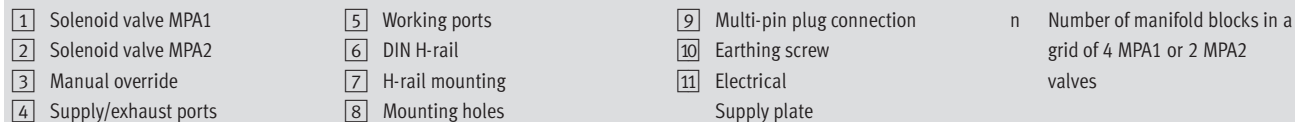


Technical data

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Valve terminal with multi-pin plug connection



Technical data

Valve terminal with AS-interface connection



Valve terminals type 32 MPA

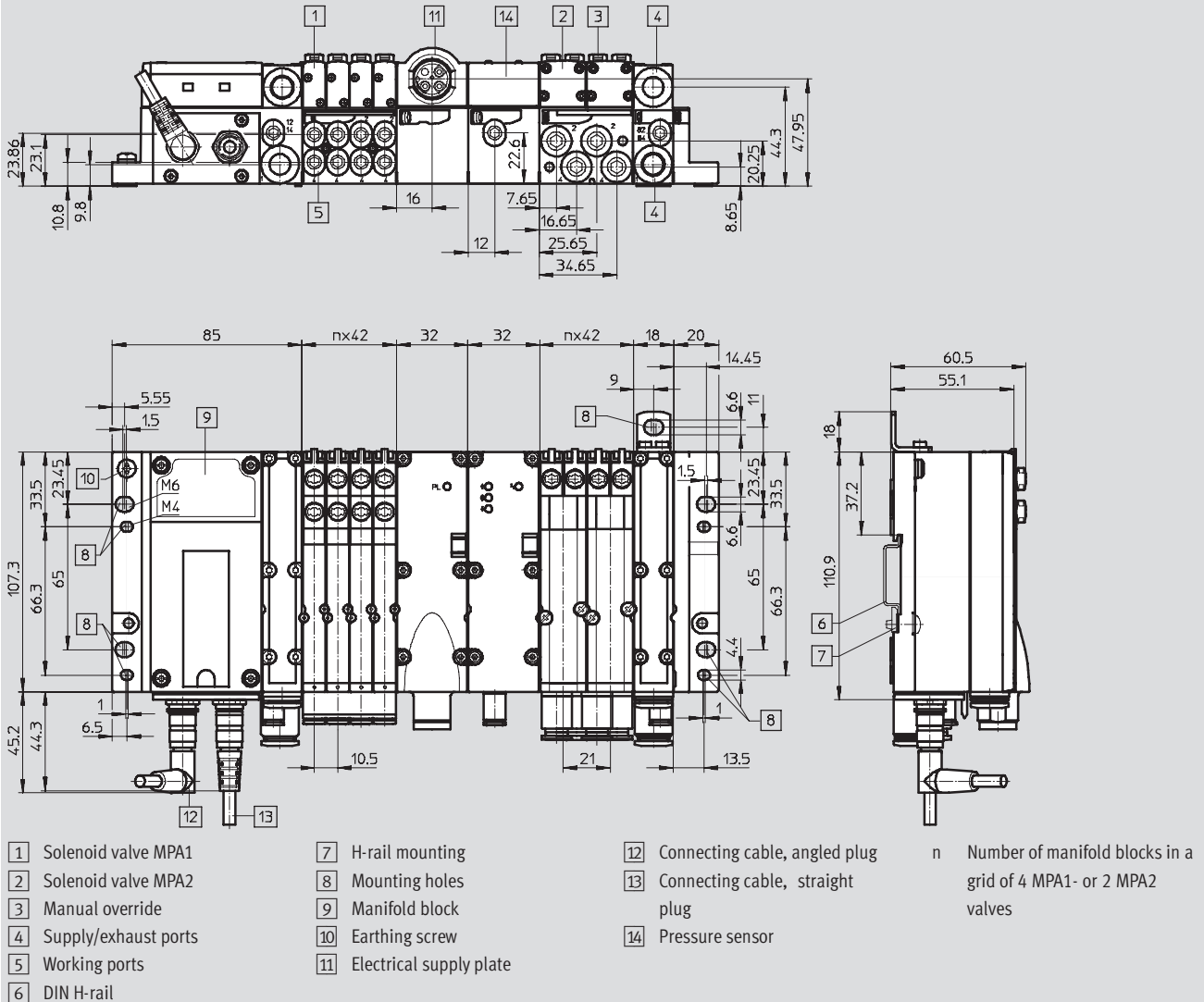
Technical data

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Dimensions

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Valve terminal with CPI connection



Valve terminals type 32 MPA

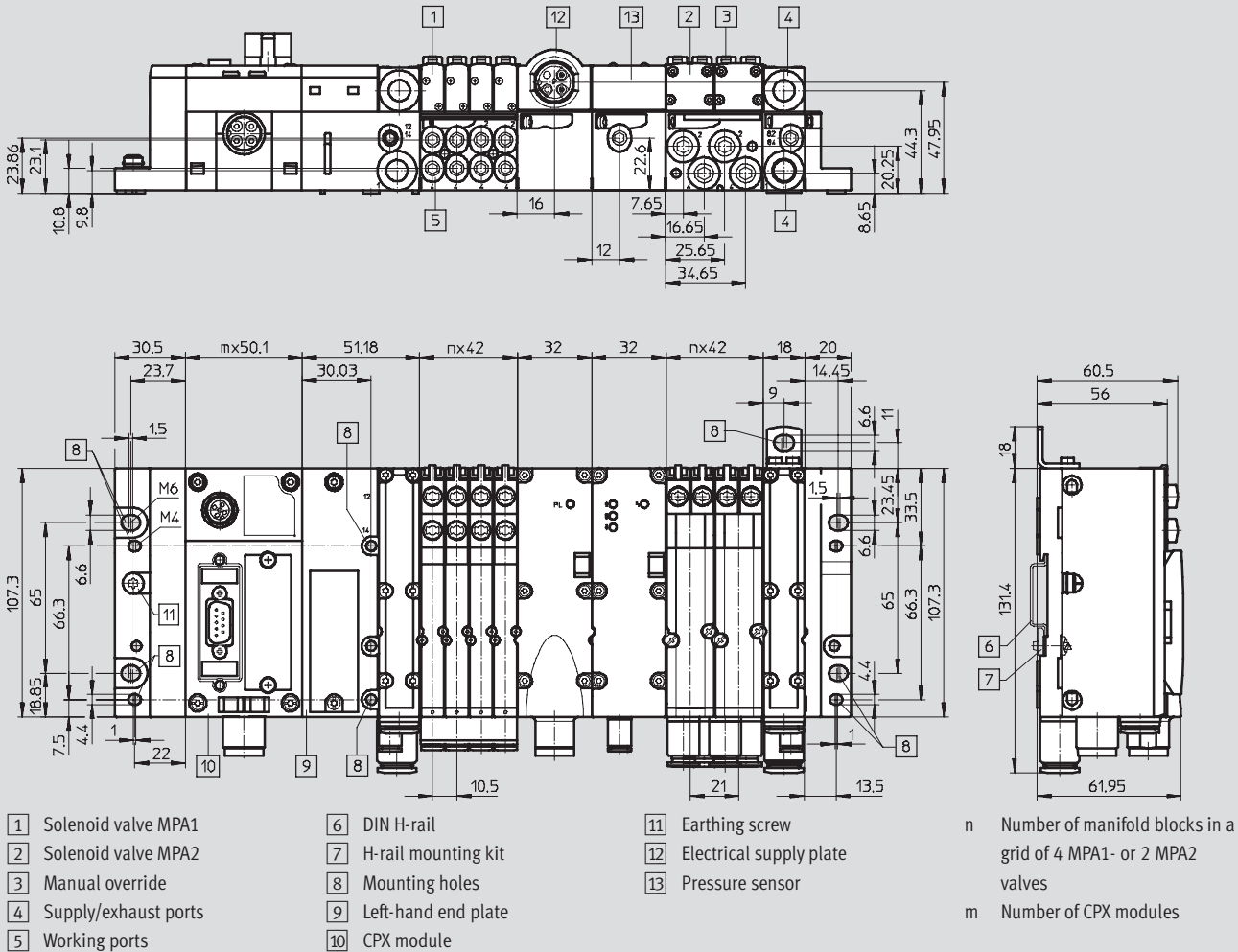
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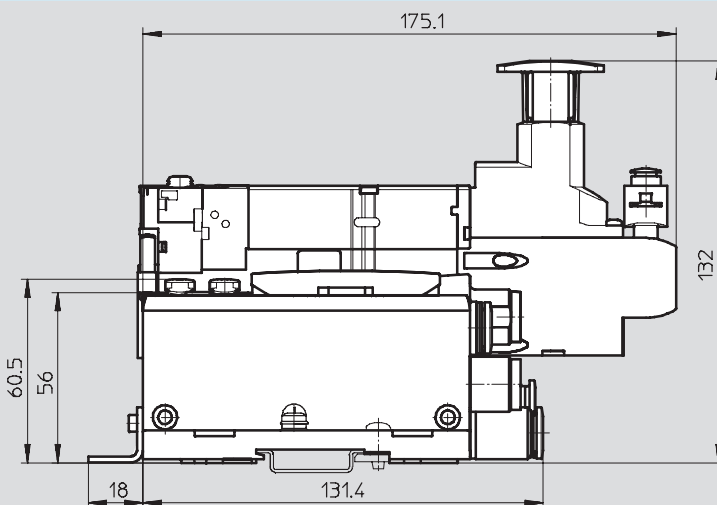
Dimensions

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Valve terminal with fieldbus connection



Vertical stacking components, MPA2



Valve terminals type 32 MPA

Ordering data – Individual valve

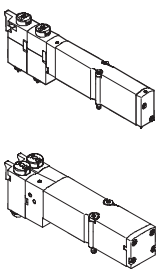
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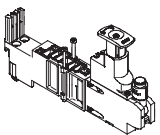

Ordering data					
Valves on individual sub-base					
	Code	Valve function	Type	Part No.	
	Internal pilot air				
	M	5/2-way valve, single solenoid	VMPA1-M1H-M7-PI	533 376	
			VMPA2-M1H-M-G $\frac{1}{8}$ -PI	537 963	
	J	5/2-way valve, bistable valve	VMPA1-M1H-J-M7-PI	533 377	
			VMPA2-M1H-J-G $\frac{1}{8}$ -PI	537 964	
	N	2x 3/2-way valve, normally open	VMPA1-M1H-N-M7-PI	533 382	
			VMPA2-M1H-N-G $\frac{1}{8}$ -PI	537 969	
	K	2x 3/2-way valve, normally closed	VMPA1-M1H-K-M7-PI	533 381	
			VMPA2-M1H-K-G $\frac{1}{8}$ -PI	537 968	
	H	2x 3/2-way valve, 1x normally open 1x normally closed	VMPA1-M1H-H-M7-PI	533 383	
			VMPA2-M1H-H-G $\frac{1}{8}$ -PI	537 970	
	B	5/3-way valve, mid-position pressurised	VMPA1-M1H-B-M7-PI	533 378	
			VMPA2-M1H-B-G $\frac{1}{8}$ -PI	537 965	
	G	5/3-way valve, mid-position closed	VMPA1-M1H-G-M7-PI	533 379	
			VMPA2-M1H-G-G $\frac{1}{8}$ -PI	537 966	
	E	5/3-way valve, mid-position exhausted	VMPA1-M1H-E-M7-PI	533 380	
			VMPA2-M1H-E-G $\frac{1}{8}$ -PI	537 967	
	D	2x 2/2-way valve, normally closed,	VMPA1-M1H-D-M7-PI	533 384	
			VMPA2-M1H-D-G $\frac{1}{8}$ -PI	537 971	
	I	2x 2/2-way valve, 1x normally closed, 1x normally closed, reversible	VMPA1-M1H-I-M7-PI	545 230	
			VMPA2-M1H-I-G $\frac{1}{8}$ -PI	545 232	
	External pilot air				
	M	5/2-way valve, single solenoid	VMPA1-M1H-MS-M7-PI	533 385	
			VMPA2-M1H-MS-G $\frac{1}{8}$ -PI	537 972	
	J	5/2-way valve, bistable valve	VMPA1-M1H-JS-M7-PI	533 386	
			VMPA2-M1H-JS-G $\frac{1}{8}$ -PI	537 973	
	N	2x 3/2-way valve, normally open	VMPA1-M1H-NS-M7-PI	533 391	
VMPA2-M1H-NS-G $\frac{1}{8}$ -PI			537 978		
K	2x 3/2-way valve, normally closed	VMPA1-M1H-KS-M7-PI	533 390		
		VMPA2-M1H-KS-G $\frac{1}{8}$ -PI	537 977		
H	2x 3/2-way valve, 1x normally open, 1x normally closed	VMPA1-M1H-HS-M7-PI	533 392		
		VMPA2-M1H-HS-G $\frac{1}{8}$ -PI	537 979		
B	5/3-way valve, mid-position pressurised	VMPA1-M1H-BS-M7-PI	533 387		
		VMPA2-M1H-BS-G $\frac{1}{8}$ -PI	537 974		
G	5/3-way valve, mid-position closed	VMPA1-M1H-GS-M7-PI	533 388		
		VMPA2-M1H-GS-G $\frac{1}{8}$ -PI	537 975		
E	5/3-way valve, mid-position exhausted	VMPA1-M1H-ES-M7-PI	533 389		
		VMPA2-M1H-ES-G $\frac{1}{8}$ -PI	537 976		
D	2x 2/2-way valve, normally closed	VMPA1-M1H-DS-M7-PI	533 393		
		VMPA2-M1H-DS-G $\frac{1}{8}$ -PI	537 980		
I	2x 2/2-way valve, 1x normally closed, 1x normally closed, reversible	VMPA1-M1H-IS-M7-PI	545 231		
		VMPA2-M1H-IS-G $\frac{1}{8}$ -PI	545 233		

Valve terminals type 32 MPA

Accessories

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
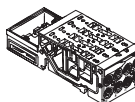
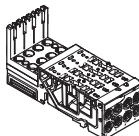
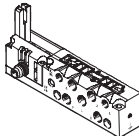
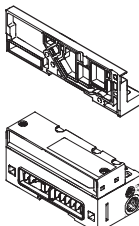
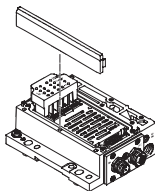
Ordering data				
Individual sub-base valve				
	Code	Valve function	Electrical plug-in connection	
			Type	Part No.
	M	5/2-way valve, single solenoid	VMPA1-M1H-M-PI	533 342
			VMPA2-M1H-M-PI	537 952
	J	5/2-way valve, bistable valve	VMPA1-M1H-J-PI	533 343
			VMPA2-M1H-J-PI	537 953
	N	2x 3/2-way valve, normally open	VMPA1-M1H-N-PI	533 348
			VMPA2-M1H-N-PI	537 958
	W	1x 3/2-way valve, normally open, external compressed air supply	VMPA1-M1H-W-PI	540 050
			VMPA2-M1H-W-PI	540 051
	K	2x 3/2-way valve, normally closed	VMPA1-M1H-K-PI	533 347
			VMPA2-M1H-K-PI	537 957
	H	2x 3/2-way valve, 1x normally open, 1x normally closed	VMPA1-M1H-H-PI	533 349
			VMPA2-M1H-H-PI	537 959
	B	5/3-way valve, mid-position pressurised	VMPA1-M1H-B-PI	533 344
			VMPA2-M1H-B-PI	537 954
	G	5/3-way valve, mid-position closed	VMPA1-M1H-G-PI	533 345
			VMPA2-M1H-G-PI	537 955

Ordering data				
Regulator plate				
	Code	Description	Type	Part No.
	PA	MPA2, connection 1, 10 bar	VMPA2-B8-R1C2-C-10	543 342
	PC	MPA2, connection 2, 10 bar	VMPA2-B8-R2C2-C-10	543 343
	PB	MPA2, connection 4, 10 bar	VMPA2-B8-R3C2-C-10	543 344
	PL	MPA2, connection 2, reversible, 10 bar	VMPA2-B8-R6C2-C-10	543 347
	PK	MPA2, connection 4, reversible, 10 bar	VMPA2-B8-R7C2-C-10	543 348
	PF	MPA2, connection 1, 6 bar	VMPA2-B8-R1C2-C-06	549 055
	PH	MPA2, connection 2, 6 bar	VMPA2-B8-R2C2-C-06	549 056
	PG	MPA2, connection 4, 6 bar	VMPA2-B8-R3C2-C-06	549 057
	PN	MPA2, connection 2, reversible, 6 bar	VMPA2-B8-R6C2-C-06	549 113
	PM	MPA2, connection 4, reversible, 6 bar	VMPA2-B8-R7C2-C-06	549 114
Pressure gauge for regulator plate				
	–	With cartridge connector for regulator, 10 bar for regulator plate, code PA, PB, PC, PL, PK	PAGN-26-16-P10	543 487
	–	With cartridge connector for regulator, 6 bar for regulator plate, code PF, PG, PH, PN, PM	PAGN-26-10-P10	543 488

Valve terminals type 32 MPA

Accessories

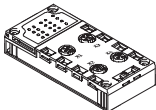
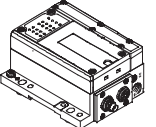
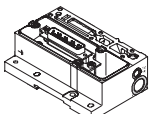
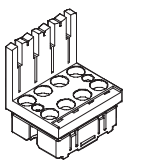
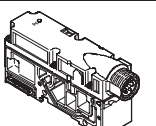
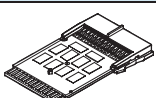
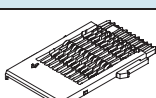
FESTO

Ordering data					
Designation				Type	Part No.
Module retainer					
	For H-rail	MPA with fieldbus		CPX-CPA-BG-NRH	526 032
		MPA with multi-pin plug connection		CPA-BG-NRH	173 498
	Wall mounting bracket			VMPA-BG-RW	534 416
Manifold blocks – without electrical manifold module					
	For multi-pin plug/fieldbus	four valve positions	MPA1	VMPA1-FB-AP-4-1	533 352
		two valve positions	MPA2	VMPA2-FB-AP-2-1	538 000
	For multi-pin plug/fieldbus, duct 1 closed	four valve positions	MPA1	VMPA1-FB-AP-4-1-T1	538 657
		two valve positions	MPA2	VMPA2-FB-AP-2-1-T0	538 677
	For multi-pin plug/fieldbus, duct 1 closed and duct 3/5 closed	four valve positions	MPA1	VMPA1-FB-AP-4-1-S1	555 901
		two valve positions	MPA2	VMPA2-FB-AP-2-1-S0	555 902
Manifold blocks – incl. electrical manifold module and electronics module					
	For fieldbus	four valve positions	MPA1	VMPA1-AP-4-1-EMS-8	546 802
		two valve positions	MPA2	VMPA2-AP-2-1-EMS-4	546 803
	For multi-pin plug	four solenoid coils	MPA1	VMPA1-AP-4-1-EMM-4	546 806
		two solenoid coils	MPA2	VMPA2-AP-2-1-EMM-2	546 807
		eight solenoid coils	MPA1	VMPA1-AP-4-1-EMM-8	546 804
		four solenoid coils	MPA2	VMPA2-AP-2-1-EMM-4	546 805
Sub-bases – for individual connection					
	Without ATEX symbol	Internal pilot air	MPA1	VMPA1-IC-AP-1	533 394
			MPA2	VMPA2-IC-AP-1	537 981
		External pilot air	MPA1	VMPA1-IC-AP-S-1	533 395
			MPA2	VMPA2-IC-AP-S-1	537 982
	With ATEX symbol: II 3 GD EEx nA II T95°C X IP54	Internal pilot air	MPA1	VMPA1-IC-AP-1-EX1	545 447
			MPA2	VMPA2-IC-AP-1-EX1	545 449
		External pilot air	MPA1	VMPA1-IC-AP-S-1-EX1	545 448
			MPA2	VMPA2-IC-AP-S-1-EX1	545 450
End plates and fieldbus pneumatic interface					
	Right-hand end plate			VMPA-EPR	533 373
	Pneumatic interface, ducted exhaust air, internal pilot air			VMPA-FB-EPL-G	533 370
	Pneumatic interface, ducted exhaust air, external pilot air			VMPA-FB-EPL-E	533 369
	Pneumatic interface, flat plate silencer, internal pilot air			VMPA-FB-EPL-GU	533 372
	Pneumatic interface, flat plate silencer, external pilot air			VMPA-FB-EPL-EU	533 371
Electrical interface for AS-interface					
	4 inputs/4 outputs	Internal pilot air	Ducted exhaust air	VMPA-ASI-EPL-G-4E4A-Z	546 989
			Silencer	VMPA-ASI-EPL-GU-4E4A-Z	546 991
		External pilot air	Ducted exhaust air	VMPA-ASI-EPL-E-4E4A-Z	546 988
			Silencer	VMPA-ASI-EPL-EU-4E4A-Z	546 990
	8 inputs/8 outputs	Internal pilot air	Ducted exhaust air	VMPA-ASI-EPL-G-8E8A-Z	546 993
			Silencer	VMPA-ASI-EPL-GU-8E8A-Z	546 995
		External pilot air	Ducted exhaust air	VMPA-ASI-EPL-E-8E8A-Z	546 992
			Silencer	VMPA-ASI-EPL-EU-8E8A-Z	546 994

Valve terminals type 32 MPA

Accessories

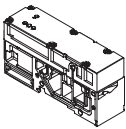
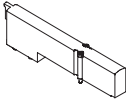




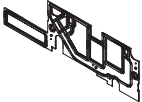
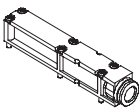
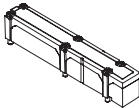
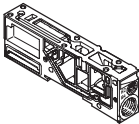
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Ordering data				
Designation			Type	Part No.
Manifold block for AS-interface				
	Socket, M12, 5-pin		CPX-AB-4-M12x2-5P-M3	546 996
	Socket, M8, 3-pin		CPX-AB-8-M8-3P-M3	546 998
	Spring loaded terminals, 32-pin		CPX-AB-8-KL-4P-M3	546 999
	Socket, Sub-D, 25-pin		CPX-AB-1-SUB-BU-25P-M3	547 000
	Socket, quick connector, 4-pin		CPX-AB-4-HAR-4P-M3	547 001
Electrical interface for CPI				
	External pilot air, ducted exhaust air		VMPA-CPI-EPL-E	546 983
	Internal pilot air, ducted exhaust air		VMPA-CPI-EPL-G	546 984
	External pilot air, silencer		VMPA-CPI-EPL-EU	546 985
	Internal pilot air, silencer		VMPA-CPI-EPL-GU	546 986
Electrical interface for multi-pin plug connection				
	External pilot air, ducted exhaust air		VMPA1-MPM-EPL-E	540 893
	Internal pilot air, ducted exhaust air		VMPA1-MPM-EPL-G	540 894
	External pilot air, silencer		VMPA1-MPM-EPL-EU	540 895
	Internal pilot air, silencer		VMPA1-MPM-EPL-GU	540 896
Electronic modules				
	For fieldbus connection, not galvanically isolated, standard	4 coils MPA2	VMPA2-FB-EMS-4	537 983
		8 coils MPA1	VMPA1-FB-EMS-8	533 360
	For fieldbus connection, galvanically isolated	4 coils MPA2	VMPA2-FB-EMG-4	537 984
		8 coils MPA1	VMPA1-FB-EMG-8	533 361
	For modular multi-pin plug connection (MPM)	2 coils MPA2	VMPA2-MPM-EMM-2	537 985
		4 coils MPA2	VMPA2-MPM-EMM-4	537 986
		4 coils MPA1	VMPA1-MPM-EMM-4	537 987
		8 coils MPA1	VMPA1-MPM-EMM-8	537 988
Electrical supply plate				
	Plug connection M18, 3-pin		VMPA-FB-SP-V	541 082
	Plug connection 7/8", 5-pin		VMPA-FB-SP-7/8-V-5POL	541 083
	Plug connection 7/8", 4-pin		VMPA-FB-SP-7/8-V-4POL	541 084
Electrical manifold module for multi-pin plug connection and AS-interface				
	For a sub-base	2 coils MPA2	VMPA2-MPM-EV-AB-2	537 989
		4 coils MPA1, MPA2	VMPA1-MPM-EV-AB-4	537 993
		8 coils MPA1	VMPA1-MPM-EV-AB-8	537 994
	For a sub-base with pneumatic supply plate	2 coils MPA2	VMPA2-MPM-EV-ABV-2	537 991
		4 coils MPA1, MPA2	VMPA1-MPM-EV-ABV-4	537 995
		8 coils MPA1	VMPA1-MPM-EV-ABV-8	537 996
Electrical manifold module for fieldbus connection and CPI				
	For a sub-base MPA1 and MPA2		VMPA1-FB-EV-AB	537 998
	For a pneumatic supply plate		VMPA1-FB-EV-V	537 999

Valve terminals type 32 MPA

Accessories

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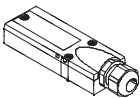

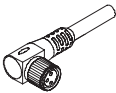
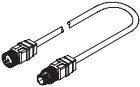
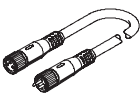


Ordering data				
Designation			Type	Part No.
Pressure sensor				
	Monitoring the operation pressure in duct 1		VMPA-FB-PS-1	541 085
	Monitoring the pressure in the exhaust duct 3 and 5		VMPA-FB-PS-3/5	541 086
	Monitoring an external processing pressure		VMPA-FB-PS-P1	541 087
Cover				
	Blanking plate for vacant valve position ¹⁾		VMPA1-RP	533 351
			VMPA2-RP	537 962
	Cover for manual override, non-detenting (10 pieces)		VMPA1-HBT	533 366
	Cover for manual override, blocked (10 pieces)		VMPA1-HBV	535 257
	Cover for manual override, non-detenting (10 pieces)		VMPA-HBT-B	540 897
	Cover for manual override, blocked (10 pieces)		VMPA-HBV-B	540 898
Seals for manifold block				
	MPA with ducted exhaust air	No duct separation	VMPA1-DP	533 359
		Duct 1 separated	VMPA1-DP-P	533 363
		Duct 3/5 separated	VMPA1-DP-RS	533 364
		Duct 1 and 3/5 separated	VMPA1-DP-PRS	533 365
	MPA with flat plate silencer	No duct separation	VMPA1-DPU	533 355
		Duct 1 separated	VMPA1-DPU-P	533 356
		Duct 3/5 separated	VMPA1-DPU-RS	533 357
		Duct 1 and 3/5 separated	VMPA1-DPU-PRS	533 358
Exhaust Plate				
	For ducted exhaust air, with 10 mm push-in connector		VMPA-AP	533 375
	For flat plate silencer		VMPA-APU	533 374
Supply plates (without exhaust plate)				
	For ducted exhaust air		VMPA1-FB-SP	533 354
	For flat plate silencer		VMPA1-FB-SPU	533 353

1) A self-adhesive label is supplied.

Valve terminals type 32 MPA

Accessories


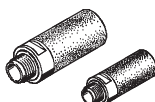


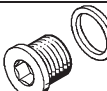

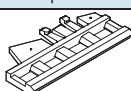


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Ordering data				
Designation			Type	Part No.
Multi-pin plug connection, electrical				
	Cover without connecting cable for self-assembly		VMPA-KMS-H	533 198
	PVC connecting cable for 8 solenoid coils	2.5 m	VMPA-KMS1-8-2.5	533 195
		5 m	VMPA-KMS1-8-5	533 196
		10 m	VMPA-KMS1-8-10	533 197
	PVC connecting cable for 24 solenoid coils	2.5 m	VMPA-KMS1-24-2.5	533 192
		5 m	VMPA-KMS1-24-5	533 193
		10 m	VMPA-KMS1-24-10	533 194
	PUR connecting cable for 8 solenoid coils, suitable for chain link trunking	2.5 m	VMPA-KMS2-8-2.5-PUR	533 504
		5 m	VMPA-KMS2-8-5-PUR	533 505
		10 m	VMPA-KMS2-8-10-PUR	533 506
	PUR connecting cable for 24 solenoid coils, suitable for chain link trunking	2.5 m	VMPA-KMS2-24-2.5-PUR	533 501
		5 m	VMPA-KMS2-24-5-PUR	533 502
10 m		VMPA-KMS2-24-10-PUR	533 503	
Connecting cable, individual connection				
	Plug socket cable, straight socket	2.5 m	SIM-M8-4GD-2,5-PU	158 960
		5 m	SIM-M8-4GD-5-PU	158 961
	Plug socket cable, angled socket	2.5 m	SIM-M8-4WD-2,5-PU	158 962
		5 m	SIM-M8-4WD-5-PU	158 963
Connecting cable, AS-interface connection				
	Connecting cable, straight plug-straight socket	M12, 4-pin/5-pin, 0.2 m	NEBU-M12G5-F-0.2-M12G4	542 129
	Modular system for connecting cables		➔ Internet: nebu	–
Connecting cable, CPI connection				
	Connecting cable WS-WD, angled plug-angled socket	0.25 m	KVI-CP-3-WS-WD-0.25	540 327
		0.5 m	KVI-CP-3-WS-WD-0.5	540 328
		2 m	KVI-CP-3-WS-WD-2	540 329
		5 m	KVI-CP-3-WS-WD-5	540 330
		8 m	KVI-CP-3-WS-WD-8	540 331
	Connecting cable GS-GD, straight plug-straight socket	2 m	KVI-CP-3-GS-GD-2	540 332
		5 m	KVI-CP-3-GS-GD-5	540 333
		8 m	KVI-CP-3-GS-GD-8	540 334

Valve terminals type 32 MPA

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Ordering data				
Designation			Type	Part No.
Push-in fitting for manifold block, pneumatic interface, supply plate				
	Connecting thread M5 for tubing O.D.	3 mm (10 pieces)	QSM-M5-3-I	153 313
		4 mm (10 pieces)	QSM-M5-4-I	153 315
		6 mm (10 pieces)	QSM-M5-6-I	153 317
	Connecting thread M7 for tubing O.D.	4 mm (10 pieces)	QSM-M7-4-I	153 319
		6 mm (10 pieces)	QSM-M7-6-I	153 321
	Connecting thread G1/8 for tubing O.D.	6 mm (10 pieces)	QS-G1/8-6-I	186 107
		8 mm (10 pieces)	QS-G1/8-8-I	186 109
	Connecting thread G1/4 for tubing O.D.	8 mm (10 pieces)	QS-G1/4-8-I	186 110
		10 mm (10 pieces)	QS-G1/4-10-I	186 112
Silencers				
	Connecting thread	M5	UC-M5	165 003
		M7	UC-M7	161 418
		G1/4	UC-1/4	165 004
		G1/8	UC-1/8	161 419
	Push-in sleeve connection	3 mm	UC-QS-3H	165 005
		4 mm	UC-QS-4H	165 006
		6 mm	UC-QS-6H	165 007
		8 mm	UC-QS-8H	175 611
		10 mm	UC-QS-10H	526 475
Blanking plugs				
	Thread M5		B-M5	3 843
	Thread M7		B-M7	174 309
	Thread G1/8		B-1/8	3 568
	Thread G1/4		B-1/4	3 569
Plugs				
	Blanking plug for tubing O.D.	4 mm	QSC-4H	153 267
		6 mm	QSC-6H	153 268
		8 mm	QSC-8H	153 269
		10 mm	QSC-10H	153 270
Inscription labels				
	Inscription label holder for manifold block, transparent, for paper foil label		VMPA1-ST-1-4	533 362
	Inscription label holder for manifold block, 4-fold, for IBS-6x10		VMPA1-ST-2-4	544 384
	Inscription labels 6 x 10 in frame, 64 pieces		IBS-6x10	18 576
User documentation				
	User documentation – MPA	German	P.BE-MPA-EN	534 240
		English	P.BE-MPA-EN	534 241
		French	P.BE-MPA-FR	534 243
		Spanish	P.BE-MPA-ES	534 242
		Italian	P.BE-MPA-IT	534 244
		Swedish	P.BE-MPA-SV	534 245