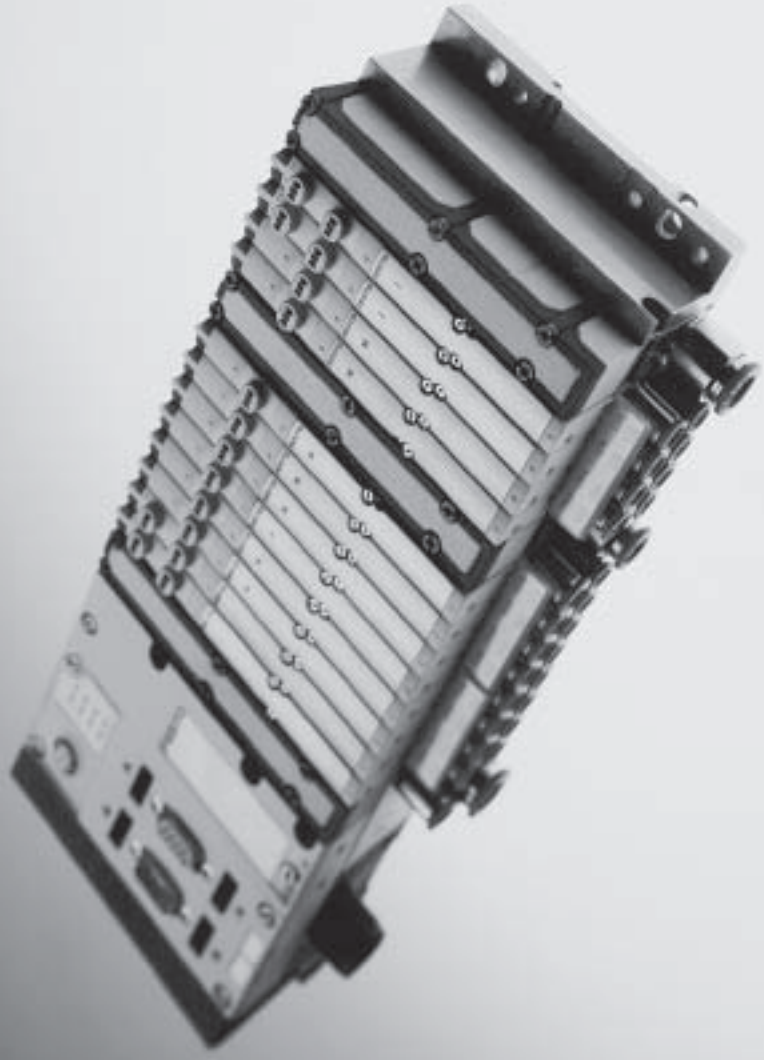
Valve terminal type 32 MPA, Modular Performance

FESTO

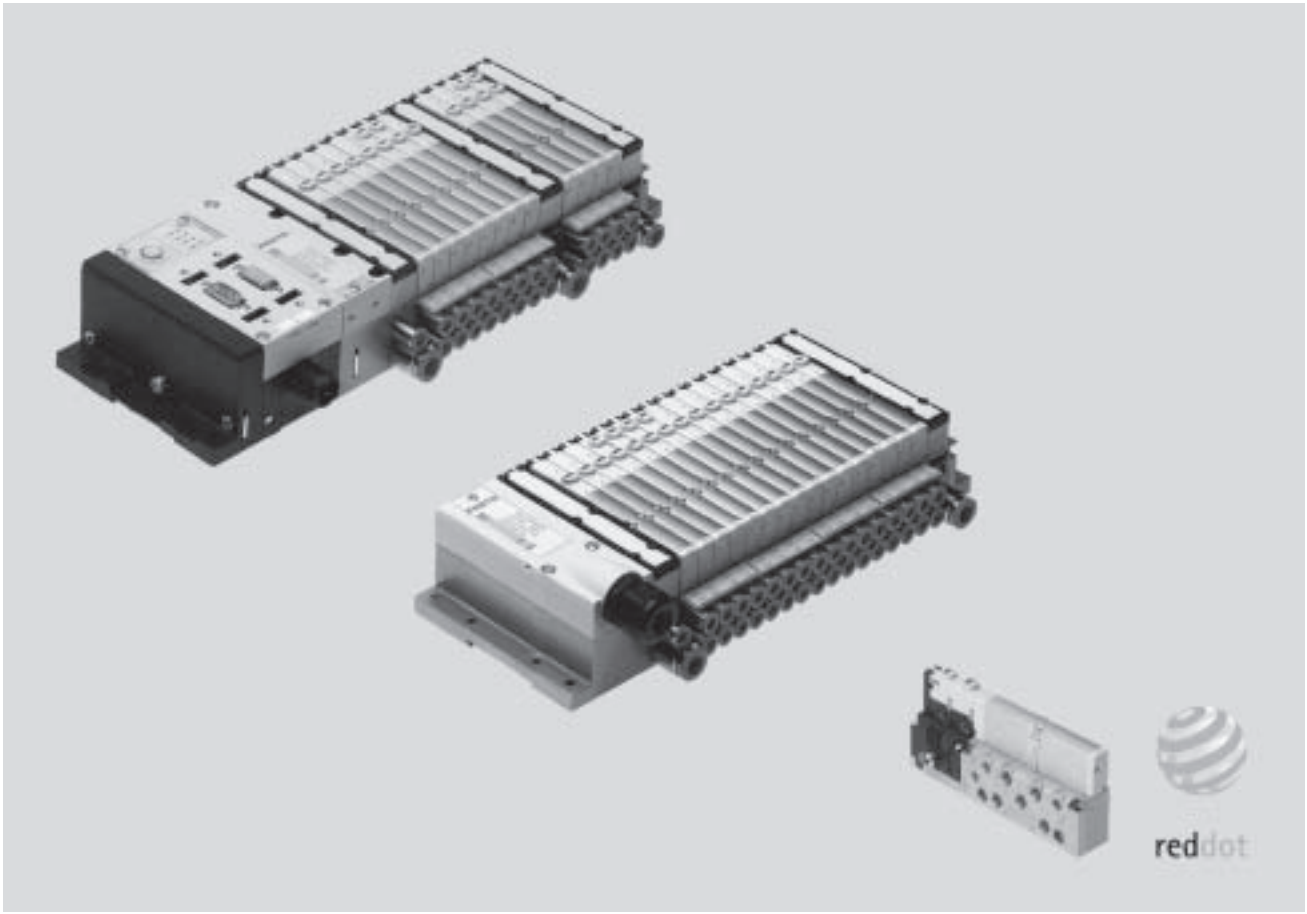


- Modular multi-functional valve terminal for up to 64 valves
- Design suitable for electrical peripherals CPX
- Channel-oriented diagnosis down to the individual valve
- Straightforward valve replacement
- Flow rates of up to 360 l/min
- Valves can be activated via electrical isolation, voltage tolerance ±25%

Valve terminal type 32 MPA, Modular Performance

Key features

FESTO



Innovative

- Slim high-performance valves in sturdy metal housing, size MPA1 up to 360 l/min
- Standardised from the individual valve up to multi-pin plug and fieldbus connections
- Dream team: Fieldbus valve terminal suitable for electrical peripherals CPX. This means:
  - Advanced internal communication system for activation of the valves and CPX modules
  - Diagnosis down to the individual valve
  - Valves can either be activated with electrical isolation or without (standard)

Flexible

- Modular system offering a range of configuration options
- Expandable up to 64 solenoid coils
- Can be converted and expanded at a later date
- Manifold blocks can be expanded using just three screws, sturdy separating seals on metal separator plates
- Integration of innovative function modules possible
- Supply plates permit a flexible air supply and variable pressure zones
- High pressure range –0.9 ... 10 bar
- Wide range of valve functions

Reliable

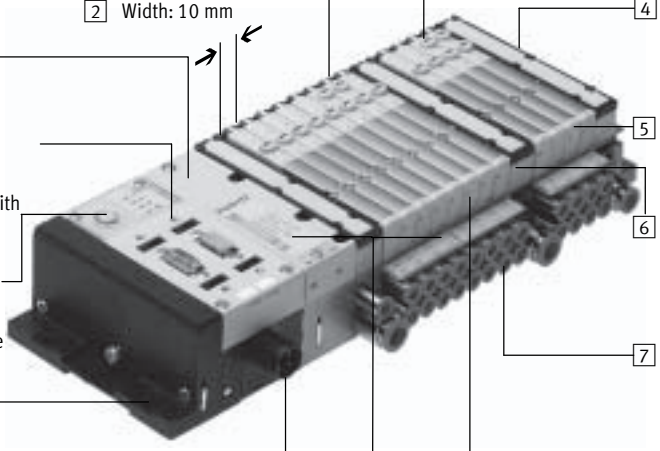
- Sturdy and durable components made of metal
  - Valves
  - Sub-bases
  - Seals
- Fast troubleshooting thanks to LEDs on the valves and diagnosis via fieldbus
- High operating voltage tolerance ±25%
- Reliable servicing through replaceable valves and electronics modules
- Manual override either push-in, detenting or secured against unauthorised activation (covered)
- Durable thanks to the use of tried-and-tested piston spool valves
- Large and permanent labelling system, suitable for barcodes

Easy to assemble

- Ready-to-install unit, already assembled and tested
- Lower costs for selection, ordering, assembly and commissioning
- Secure wall mounting or H-rail mounting

Valve terminal type 32 MPA, Modular Performance

Key features



1 Reduced downtimes:
LED diagnosis on the spot

2 Width: 10 mm

3 Reliable operation:
Manual override push-in/detenting or covered

4 Compact:
Slim valves and integrated silencers

5 Flexible:
32 valve positions/64 solenoid coils
24 valve positions/24 solenoid coils

6 Modular:
Supply plates facilitate the creation of multiple pressure zones as well as numerous additional exhaust and supply ports

7 Functional:
Sturdy metal thread or pre-assembled QS connections

8 Comprehensive range of valve functions

9 Practical:
Large inscription labels

10 Safe:
Operating voltage connection ±25%, outputs and valves can be disconnected separately

11 Quick mounting:
Directly using screws or H-rail

12 CPX diagnostic interface for handheld devices (channel-oriented diagnosis down to the individual valve)

13 Simple electrical connections
– Fieldbus connection via CPX
– Multi-pin plug connection with pre-assembled cable

14 Pneumatic interface:
CPX interface

Equipment options

Valve functions

- 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, 1 x normally closed
- 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 normally closed
- 1x 3/2-way valve normally closed, external compressed-air supply

All valves have the same compact dimensions with an overall length of 107 mm and a width of 10 mm. A height of 55 mm makes them a perfect match with the electrical peripherals CPX.

Special features

Fieldbus terminal
- Max. 32 valve positions/ max. 64 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

Multi-pin terminal
- Max. 24 valve positions/ max. 24 solenoid coils
- Parallel valve linking via circuit board
- Electronics module with integrated holding current reduction
- Compressed-air supply left and optionally right
- Second pressure zone possible through the use of a separating seal

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

Valve terminal configurator

Online via: ➔ www.festo.com/en/engineering

A valve terminal configurator is available to help you select a suitable valve terminal MPA. This makes it much easier for you to find the right product.

Valve terminals are equipped and assembled according to customer requirements. This results in minimal installation time. They are also fully inspected before shipment.

- Note

➔ 4 / 4.8-2 Modular electrical terminal CPX

Valve terminal type 32 MPA, Modular Performance

Peripherals overview

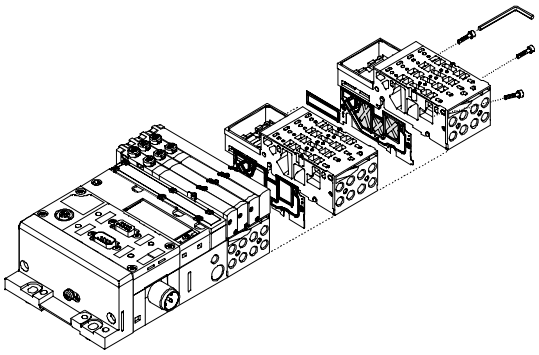
Modular pneumatic components

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.

Inside, the manifold blocks contain the connection channels for supplying compressed air to and venting from the valve terminal as well as the working lines for the pneumatic cylinders for each valve.

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



Modular electrical peripherals

The manner in which the valves are activated differs according to whether you are using a fieldbus terminal, multi-pin 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 diagnosis
- Separate voltage supply for valves
- Flexible conversion without address shifting
- Transmission of status, parameter and diagnostic data

MPA with CPX interface

Modular electrical peripherals CPX

Valve terminal type 32 MPA, Modular Performance

Peripherals overview

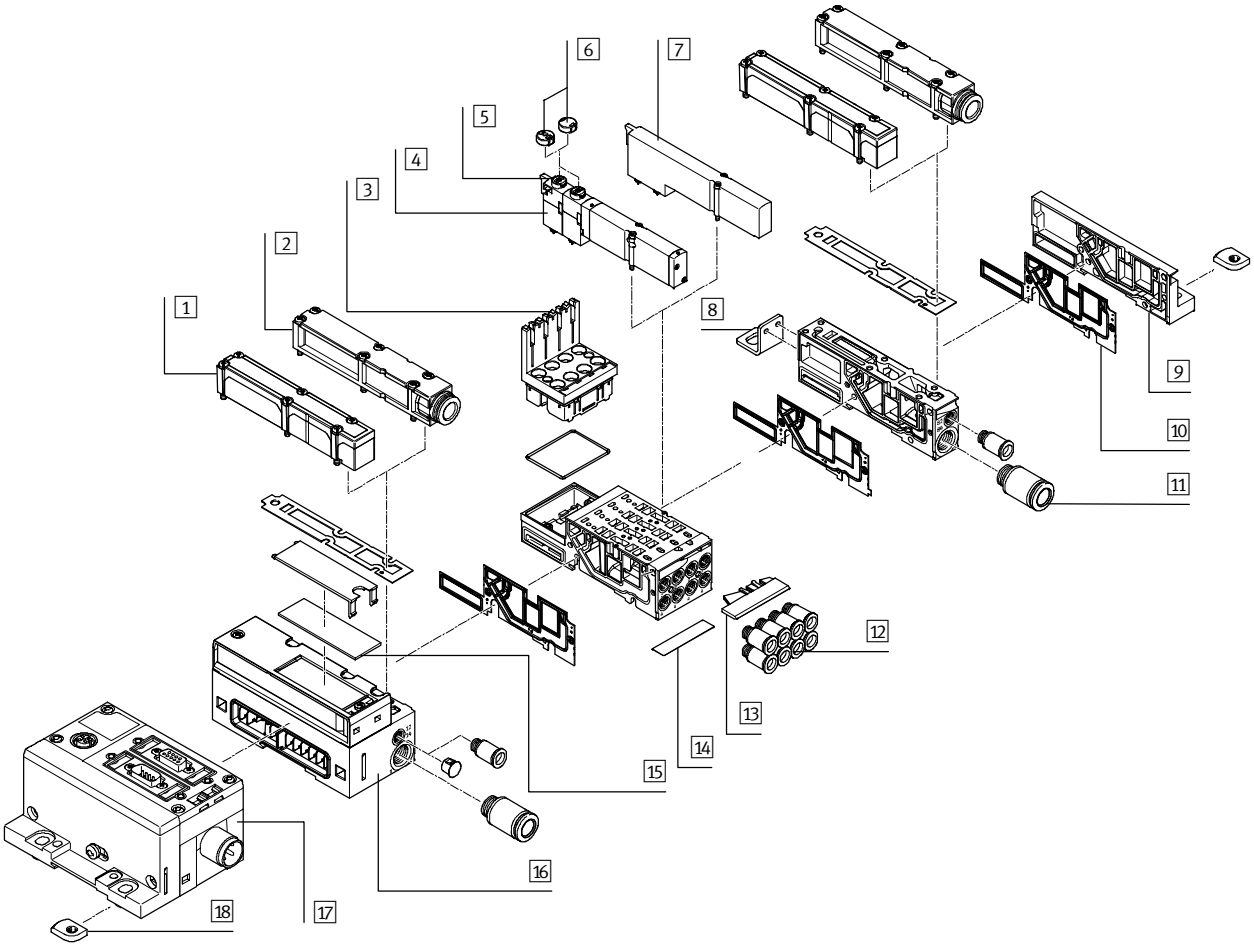
Overview – MPA valve terminal

Valve terminal with fieldbus connection (electrical peripherals CPX)

Order code:
- 32P-... for the pneumatic components
- 50E-... for the electrical components

MPA valve terminals with fieldbus connection can be expanded from 4 to 32 valves and 4 to 64 solenoid coils.
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:
- Max. 10 electrical modules
- Digital inputs/outputs
- Analogue inputs/outputs
- Parameterisation of inputs and outputs
- Integrated high-feature diagnostic system
- Preventative maintenance concepts



1 Integrated silencer
2 Ducted exhaust
3 Electronics module
4 MPA valve
5 Manual override (per solenoid coil, push-in/rotary-detenting)
6 Cover for manual override (push-in, covered only)
7 Blanking plate for vacant position
8 Mounting bracket (optional)
9 Right-hand end plate
10 Separating seal
11 Threaded connectors for supply plate
12 Threaded connectors for working lines
13 Inscription label holder
14 Inscription label
15 Inscription label, large
16 Pneumatic interface (CPX interface)
17 CPX modules
18 Attachment for H-rail mounting

Valve terminal type 32 MPA, Modular Performance

Peripherals overview

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Valve terminal with multi-pin plug connection

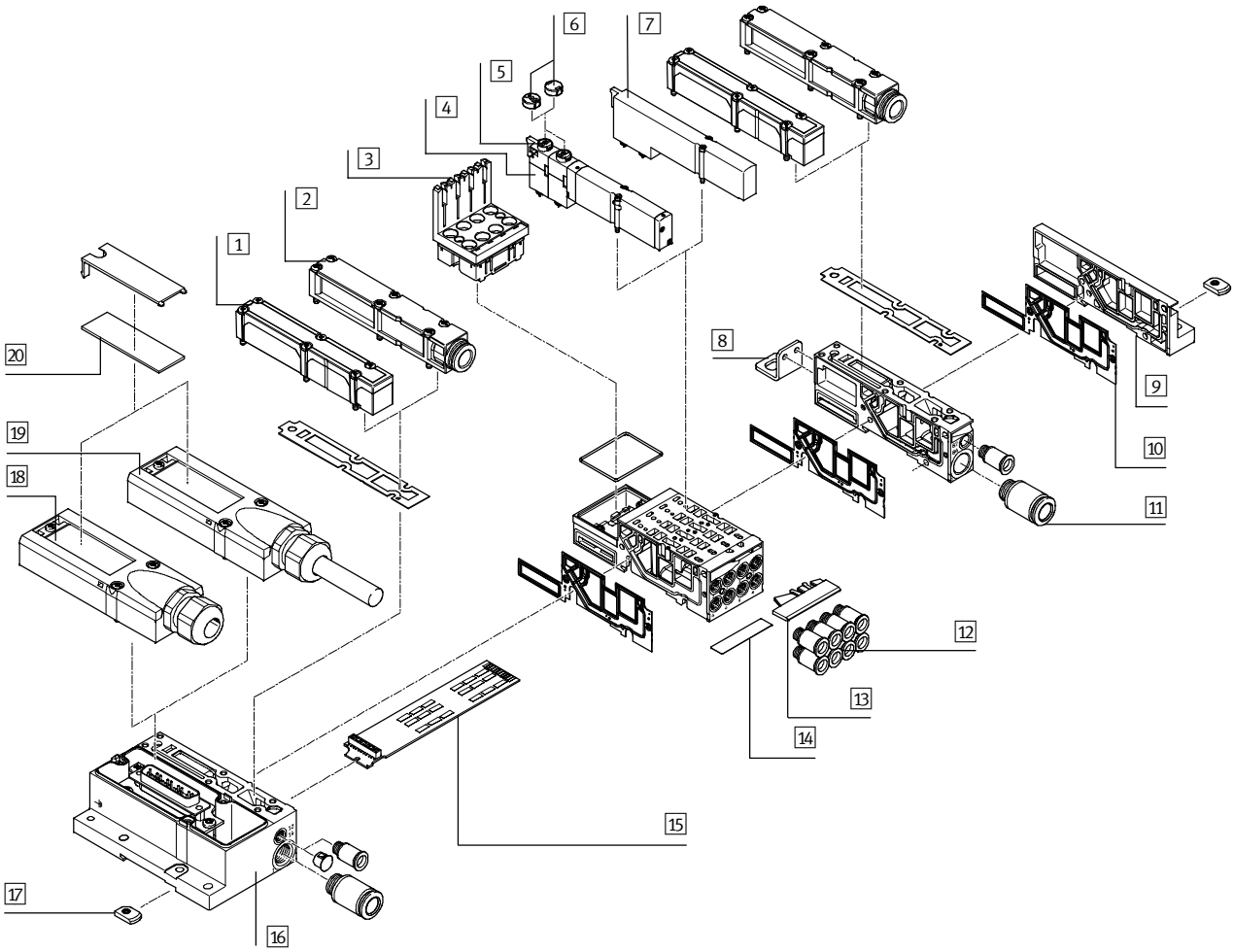
Order code:
- 32P-... for the pneumatic components
- 32E-... for the electrical components

MPA valve terminals with multi-pin plug connection can be expanded from 4 to 24 valves and 4 to 24 solenoid coils.
The manifold blocks are either prepared for:
- 4 single solenoid valves
- 4 double solenoid valves

The manifold blocks for the double solenoid valves are mounted directly after the pneumatic interface, followed by the manifold blocks for the single solenoid valves.
- Double solenoid valve positions can be equipped with any valve or a blanking plate.
- Single solenoid valve positions can only be equipped with single solenoid valves.

The multi-pin plug connection is designed as a removable 25-pin Sub-D connection to IP65.
The associated cable can be selected when ordering:
- 2.5 m
- 5 m
- 10 m

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



1 Integrated silencer
2 Ducted exhaust
3 Electronics module
4 MPA valve
5 Manual override (per solenoid coil, push-in/ rotary-detenting)
6 Cover for manual override (push-in, covered only)
7 Blanking plate for vacant position
8 Mounting bracket (optional)
9 Right-hand end plate
10 Separating seal
11 Threaded connectors for supply plate
12 Threaded connectors for working lines
13 Inscription label holder
14 Inscription label
15 Multi-pin circuit board
16 Pneumatic interface, multi-pin
17 Attachment for H-rail mounting
18 Multi-pin plug connection, for self-assembly
19 Multi-pin cable
20 Inscription label, large

Valve terminal type 32 MPA, Modular Performance

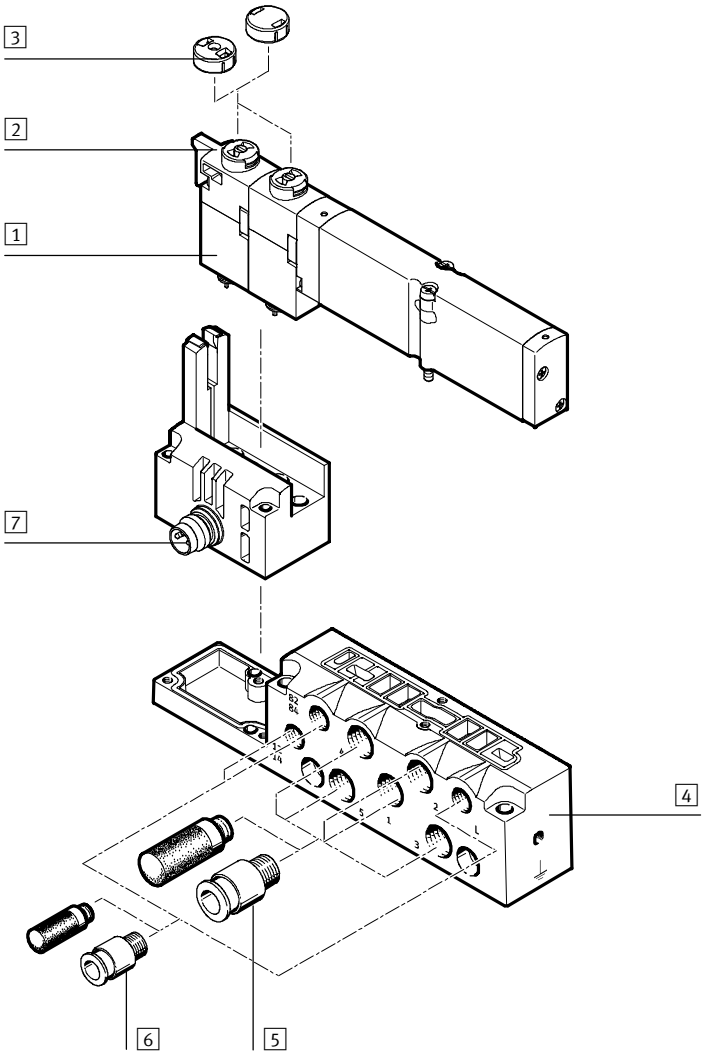
Peripherals overview

Individual sub-base

Order:
■ Using individual part numbers

Individual sub-bases can be equipped with any valve.

The electrical connection is established using a standard 4-pin M8 plug (VDMA 24 571).



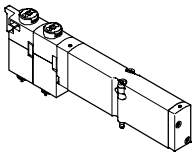
1 MPA valve
2 Manual override (per solenoid coil, push-in/rotary-detenting)
3 Cover for manual override (push-in only, covered)
4 Sub-base for individual valve
5 Threaded connectors and/or silencers M7 for working lines (2, 4) and supply air/exhaust ports (1, 3, 5)
6 Threaded connectors, silencers or blanking plugs M5 for auxiliary pilot air supply/exhaust ports (12/14, 82/84) and pressure compensation
7 Electrical connection M8, 4-pin

Valve terminal type 32 MPA, Modular Performance

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 good air tightness, a broad pressure range and long service life. To increase power they have a pneumatic pilot control supplied by auxiliary pilot air.

Sub-base valves can be quickly replaced since the pipe connection remains on the manifold block. This design is also particularly slim.

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

Blanking plate

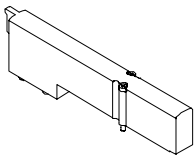
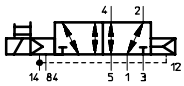
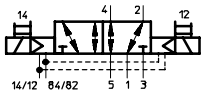
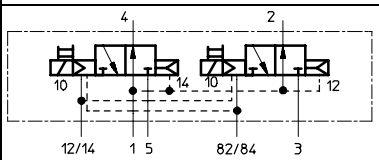
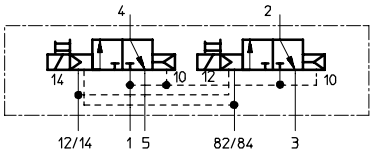
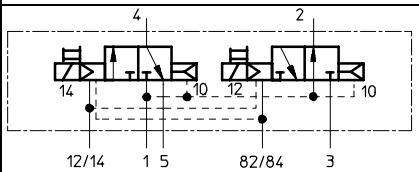
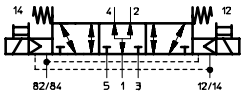


Plate without valve function for reserving valve positions on a valve terminal.

Valve sub-bases and blanking plates are attached to the manifold block using two screws.

Valve function

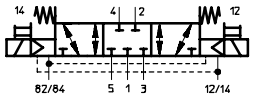
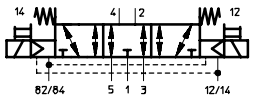
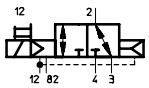
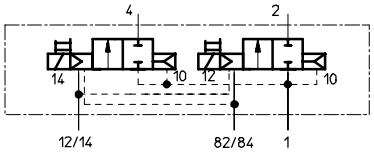
Code	Circuit symbol	Size 10	Description
M		■	5/2-way valve, single solenoid ■ Pneumatic spring return
J		■	5/2-way valve, double solenoid
N		■	2x 3/2-way valve, single solenoid ■ Normally open ■ Pneumatic spring return
K		■	2x 3/2-way valve, single solenoid ■ Normally closed ■ Pneumatic spring return
H		■	2x 3/2-way valve, single solenoid ■ Normal position 1x open 1x closed ■ Pneumatic spring return
B		■	5/3-way valve ■ Mid-position pressurised[1)] ■ Spring force return

1) Mid-position can be reached without electrical signal or using both signals

Valve terminal type 32 MPA, Modular Performance

Key features – Pneumatic components

FESTO

Valve function			
Code	Circuit symbol	Size 10	Description
G		■	5/3-way valve ■ Mid-position closed[1)] ■ Spring force return
E		■	5/3-way valve ■ Mid-position exhausted[1)] ■ Spring force return
X		■	1x 3/2-way valve, external compressed-air supply ■ Normally closed ■ Pneumatic spring return Compressed air (–0.9 ... +10 bar) supplied at working line 4 can be switched whether using either internal or external auxiliary pilot air
D		■	2x 2/2-way valve ■ Normally closed ■ Pneumatic spring return
L		■	For valve terminal only: Blanking plate for vacant position

1) Mid-position can be reached without electrical signal or using both signals

Constructional design

Valve replacement

The valves are attached to the metal manifold block using two screws. This means that they can be easily replaced. The mechanical robustness of the manifold block guarantees good long-term air tightness.

Expansion

Vacant positions 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, B, G, E, X, D) is located on the front of the valve beneath the manual override.

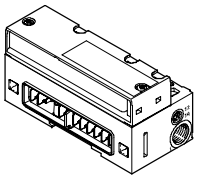
Valve terminal type 32 MPA, Modular Performance

Key features – Pneumatic components

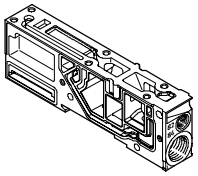
FESTO

Compressed-air supply and venting

Pneumatic interface



Supply plate



MPA can be supplied with compressed air at one or more points. This is a reliable way of ensuring that the terminal will always have a sufficient supply of compressed 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 performed either using integrated 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 auxiliary 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 pilot air supply types:

- Internal
- External

Internal pilot air supply
An internal pilot air supply can be selected if the required working pressure is between 3 and 8 bar. The auxiliary pilot air is then branched from the compressed-air supply 1 at the pneumatic interface using an internal connection. The 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 an external pilot air supply. In this case the auxiliary pilot air is supplied externally via port 12/14 in the pneumatic interface.

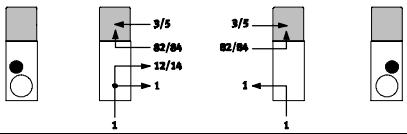
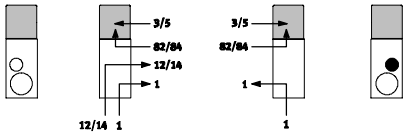
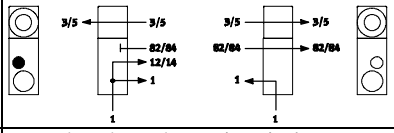
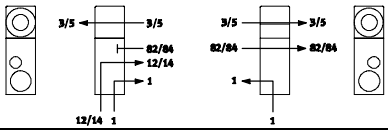
Note

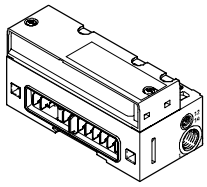
If a gradual pressure build-up is required in the system using a soft-start valve, an external pilot air supply should be selected whereby the control pressure applied during activation is already very high.

Valve terminal type 32 MPA, Modular Performance

Key features – Pneumatic components

FESTO

Compressed-air supply and auxiliary pilot air			
Code	Graphical symbol Type of compressed-air supply and auxiliary pilot air	Size 10	Notes
S	Internal auxiliary pilot air, integrated silencer 	■	■ Auxiliary pilot air is branched internally from port 1 in the pneumatic interface ■ Exhaust port 3/5 and pilot exhaust port 82/84 via integrated silencer ■ For operating pressure in the range 3 ... 8 bar
T	External auxiliary pilot air, integrated silencer 	■	■ Auxiliary pilot air between 3 and 8 bar is connected at port 12/14 ■ Exhaust port 3/5 and pilot exhaust port 82/84 via integrated silencer ■ For operating pressure in the range –0.9 ... 10 bar (suitable for vacuum)
V	Internal auxiliary pilot air, ducted exhaust air 	■	■ Auxiliary pilot air 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	External auxiliary pilot air, ducted exhaust air 	■	■ Auxiliary pilot air between 3 and 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	Graphical symbol Pneumatic interface design variants	Size 10	Notes
M	In combination with compressed-air supply S, T, V, X  VMPA-...-EPL-...	■	■ 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 terminal type 32 MPA, Modular Performance

Key features – Pneumatic components

FESTO

Supply plate

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

MPA with CPX

Supply plates can be configured at any point before or after manifold blocks.

MPA with MP connection

A supply plate can only be selected after the last manifold block. This facilitates the creation of an additional pressure zone.

Supply plates contain the ports:

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

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

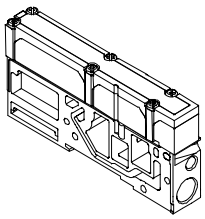
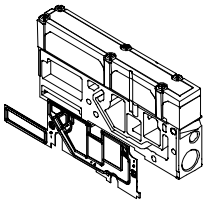
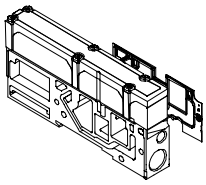
MPA with ducted exhaust

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

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 to the direct right or left of the supply plate, then the code letter V or W identifies the position or 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	Graphical symbol[1)]	Size 10	Notes
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 compressed-air supply S, T, V, X.

Valve terminal type 32 MPA, Modular Performance

Key features – Pneumatic components

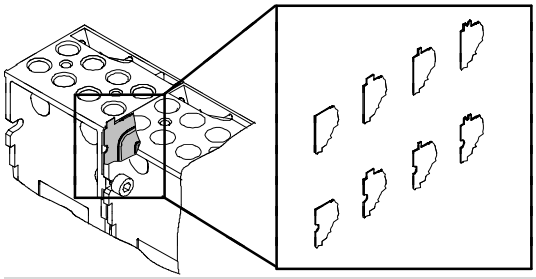
FESTO

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. Pressure zones are created by isolating the internal supply channels in the sub-bases using an appropriate separating seal.

Compressed air is supplied and vented via a supply plate.
The position of the supply plates and separating seals can be freely selected for MPA with CPX, whilst only one supply plate is possible for MPA with multi-pin (➔ 4 / 2.2-14).

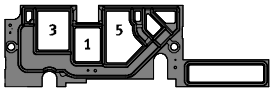
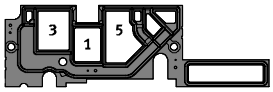
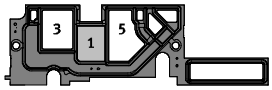
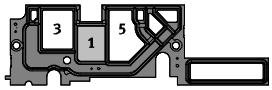
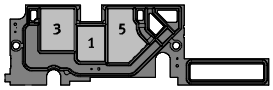
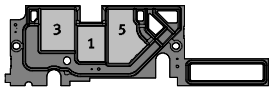
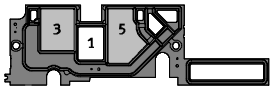
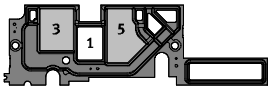
Separating seals are integrated ex works as per your order. Separating seals can be distinguished through their coding.



Note

The following must be taken into consideration with subsequent expansion or conversions: Different separating seals must be ordered when the valve terminal is operated using ducted exhaust or integrated silencer.

Creating pressure zones

Code	Pictorial examples for operation with integrated silencer	Pictorial examples for operation with ducted exhaust	Size 10	Notes
–	 VMPA1-DPU	 VMPA1-DP	■	Seal, no channel separation
T	 VMPA1-DPU-P	 VMPA1-DP-P	■	Seal, channel 1 separated
S	 VMPA1-DPU-PRS	 VMPA1-DP-PRS	■	Seal, channel 1 and 3/5 separated
R	 VMPA1-DPU-RS	 VMPA1-DP-RS	■	Seal, channel 3/5 separated

Valve terminal type 32 MPA, Modular Performance

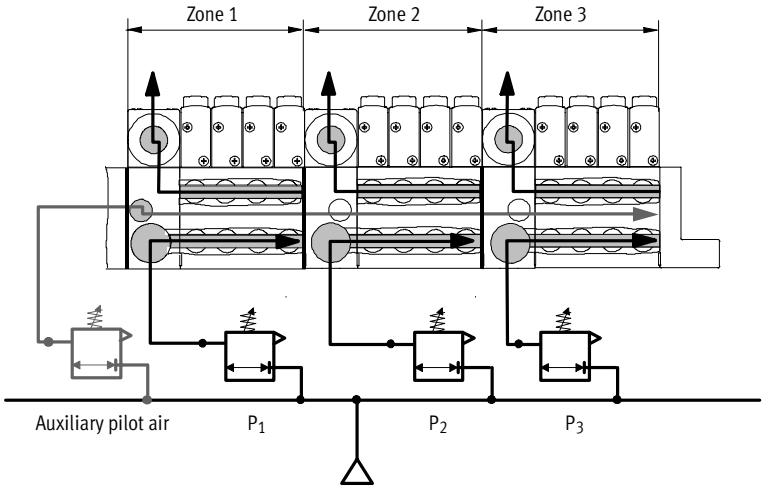
Key features – Pneumatic components

FESTO

Examples: Creating pressure zones

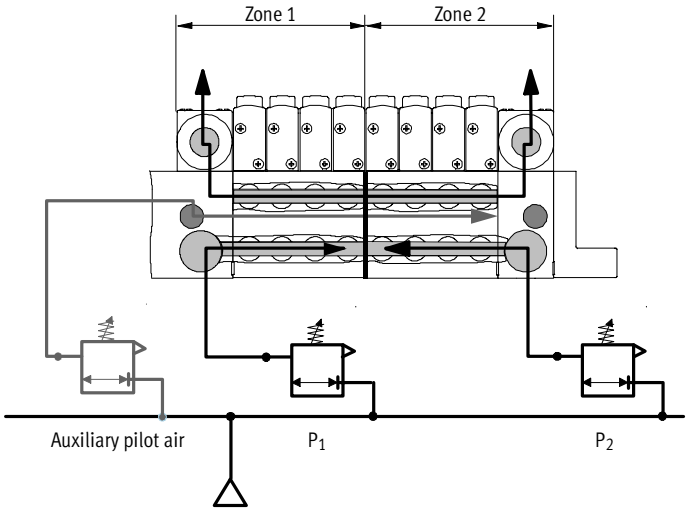
MPA with CPX

MPA1 allows the creation of up to eight pressure zones. The following diagram shows examples for the creation and connection of three pressure zones – with an external auxiliary pilot air supply.



MPA with multi-pin plug connection

MPA1 allows the creation of up to two pressure zones. The following diagram shows examples for the creation and connection of the pressure zones – with an external auxiliary pilot air supply.

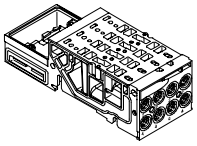


Valve terminal type 32 MPA, Modular Performance

Key features – Pneumatic components

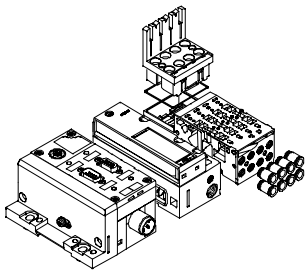
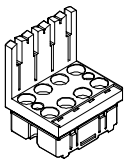
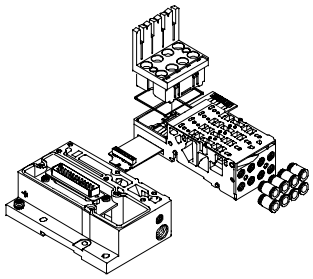
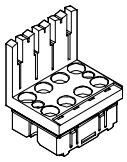
FESTO

Manifold block



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.
Inside, the manifold blocks contain the connection channels for supplying compressed air to and venting from the valve terminal as well as the working lines for the pneumatic cylinders for each valve.
Each manifold block is connected to the next using three screws.
Individual terminal sections can be isolated and further blocks inserted by loosening these screws. This ensures that the valve terminal can be rapidly and reliably expanded.

Manifold block variants

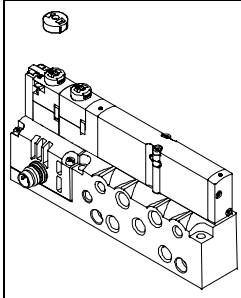
Code		Size 10	Number of valve positions (solenoid coils)	Notes
A	Fieldbus connection			
	Manifold block  VMPA1-FB-AP-4-1	■	4 ... 32 (max. 64)	■ Working lines (2, 4) at manifold block ■ Connection sizes: M7, QS4, QS6
	Electronics module  VMPA1-FB-EM-...-8	■	4 (8)	The electronics module contains the serial communication system and facilitates: ■ Transmission of switching information ■ Activation of up to 8 solenoid coils ■ Position-based diagnosis ■ Separate voltage supply for valves ■ Transmission of status, parameter and diagnostic data There are two variants: ■ Not electrically isolated (standard) ■ Electrically isolated
	Multi-pin plug connection			
	Manifold block  VMPA1-MP-AP-4-1	■	4 ... 24 (max. 24)	■ Working lines (2, 4) at manifold block ■ Connection sizes: M7, QS4, QS6
	Electronics module  VMPA1-MP-EM-...-...	■	4 (8)	The electronics module contains the parallel communication system and facilitates: ■ Individual transmission of the switching voltage ■ Integrated holding current reduction

Valve terminal type 32 MPA, Modular Performance

Key features – Pneumatic components

FESTO

Manifold block variants

Code		Size 10	Number of valve positions (solenoid coils)	Notes
–	Individual connection			
	 VMPA1-M1H-...-M7-PI	■	1 (max. 2)	■ With working lines M7, QS4, QS6 ■ With ports for supply air (1, 12/14) and exhaust air (3, 5, 82/84)

Permissible combinations of manifold blocks with multi-pin plug connection

MPA1	Valve allocation per manifold block						Number of valve positions	Number of solenoid coils
Pneumatic interface	Single/double solenoid	–	–	–	–	–	4	8
	Single/double solenoid	Single/double solenoid	–	–	–	–	8	16
	Single/double solenoid	Single/double solenoid	Single/double solenoid	–	–	–	12	24
	Single/double solenoid	Single/double solenoid	Single solenoid	Single solenoid	–	–	16	24
	Single/double solenoid	Single solenoid	Single solenoid	Single solenoid	Single solenoid	–	20	24
	Single solenoid	Single solenoid	Single solenoid	Single solenoid	Single solenoid	Single solenoid	24	24

Note

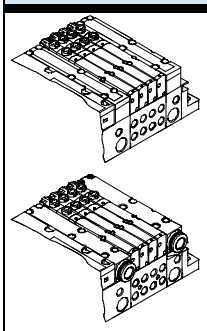
With MPA with multi-pin plug connection, parallel linking defines whether a manifold block can activate double solenoid or exclusively single solenoid valves. The double solenoid manifold blocks are mounted directly following the pneumatic interface. Note the permissible combinations as per the table above. Electronics modules for 4 or 8 solenoid coils are mounted in accordance with the above combination.

Valve terminal type 32 MPA, Modular Performance

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 auxiliary pilot air, silencer					
		1	Compressed-air/vacuum supply	Push-in fitting	QS-G¼-10-I	QS-G¼-8-I	G¼
		3/5	Exhaust air	Integrated silencer	–	–	–
		12/14	Auxiliary pilot air	–	–	–	–
		82/84	Exhaust for auxiliary pilot air	Integrated silencer	–	–	–
			Pressure compensation	Vented to atmosphere via silencer			
	T	External auxiliary pilot air, silencer					
		1	Compressed-air/vacuum supply	Push-in fitting	QS-G¼-10-I	QS-G¼-8-I	G¼
		3/5	Exhaust air	Integrated silencer	–	–	–
		12/14	Auxiliary pilot air	Push-in fitting	QSM-M7-6-I	QSM-M7-4-I	M7
		82/84	Exhaust for auxiliary pilot air	Integrated silencer	–	–	–
			Pressure compensation	Vented to atmosphere via silencer			
	V	Internal auxiliary pilot air, ducted exhaust air					
		1	Compressed-air/vacuum supply	Push-in fitting	QS-G¼-10-I	QS-G¼-8-I	G¼
		3/5	Exhaust air	Push-in fitting	QS-G¼-10-I	QS-G¼-8-I	G¼
		12/14	Auxiliary pilot air	–	–	–	–
		82/84	Exhaust for auxiliary pilot air	Push-in fitting	QSM-M7-6-I	QSM-M7-4-I	M7
			Pressure compensation	Vented into channels 82/84			
	X	External auxiliary pilot air, ducted exhaust air					
		1	Compressed-air/vacuum supply	Push-in fitting	QS-G¼-10-I	QS-G¼-8-I	G¼
		3/5	Exhaust air	Push-in fitting	QS-G¼-10-I	QS-G¼-8-I	G¼
		12/14	Auxiliary pilot air	Push-in fitting	QSM-M7-6-I	QSM-M7-4-I	M7
		82/84	Exhaust for auxiliary pilot air	Push-in fitting	QSM-M7-6-I	QSM-M7-4-I	M7
			Pressure compensation	Vented into channels 82/84			

Valve terminal type 32 MPA, Modular Performance

Key features – Assembly

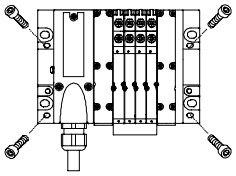
FESTO

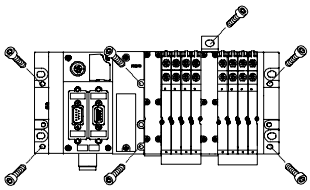
Valve terminal assembly

Sturdy terminal assembly thanks to:

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

Wall mounting





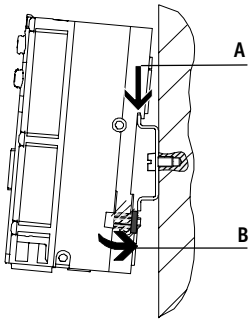
The MPA valve terminal is screwed onto the mounting surface using four M4 or M6 screws. The mounting holes are located at the following points:

- Multi-pin plug (4 pieces): at the pneumatic interface and the right-hand end plate
- Fieldbus (6 pieces): at the left-hand end plate (CPX) and right-hand end plate MPA. The pneumatic interface additionally provides further mounting holes as well as optional mounting brackets.

The fieldbus version additionally provides a bracket for wall mounting (bracket type MPA, part number 665 983).

The mounting brackets can be used with very long valve terminals (6 manifold blocks or more) to improve load capacity during vibrations or shocks.

H-rail mounting



The MPA valve terminal is attached to the H-rail (see arrow A).

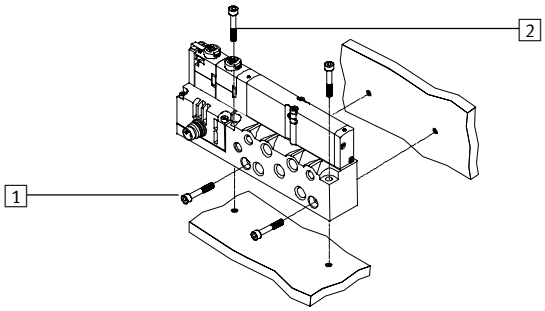
The terminal is then rotated on the H-rail and secured in place with the clamping component (see arrow B).

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 permits mounting of the valve terminal on the H-rail to DIN EN 50 022.

Individual valve assembly



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

1 Horizontal mounting holes
2 Vertical mounting holes

Valve terminal type 32 MPA, Modular Performance

Key features – Display and operation

Display and operation

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

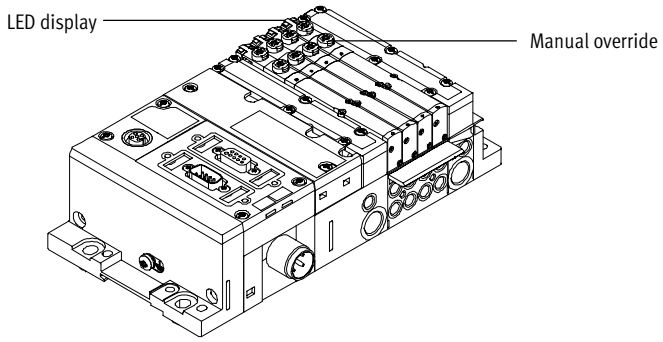
- Indicator 12 shows the switching status of the pilot control for output 2
- Indicator 14 shows the switching status of the pilot control for output 4

Manual override

The manual override (MO) allows the valve to be activated without electronic control or power supply. The valve is activated by pressing the manual override. The set switching status can also be locked by rotating the manual override (code: R).

Alternatives:

- A cover (code: N) can be fitted to prevent the manual override from being locked. The valve 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.

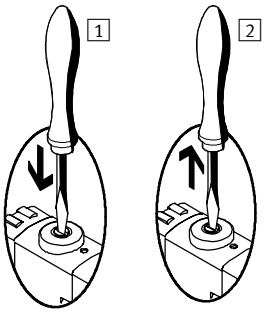


Note

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

Manual override (MO)

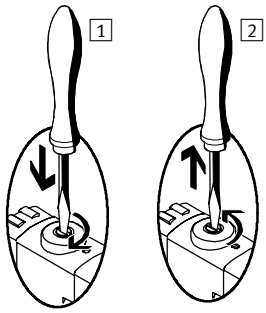
Manual override with automatic return (pushing)



1 Press in the stem of the MO using a pin or screwdriver.
⇢ Valve is activated

2 Remove pin or screwdriver. Spring force pushes the stem of the MO back.
⇢ Valve returns to initial position (not with double solenoid valve code J)

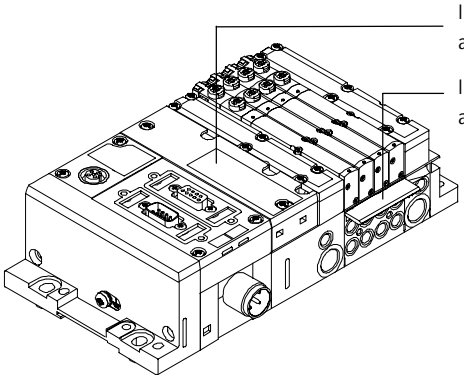
Manual override with lock (detenting)



1 Press in the stem of the MO using a pin or screwdriver until the valve activates 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



4-fold inscription label holders MPA1-ST-1-4 (part number 658 291) can be applied to each manifold block for the purpose of labelling the valves. These inscription label holders can be ordered by entering the code T in the order code.
Scope of delivery: Inscription label holder including inscription label
The following inscription labels can be used as spares:

- Inscription label MPA (38 x 9 mm): Part No. 663 739

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 terminal type 32 MPA, Modular Performance

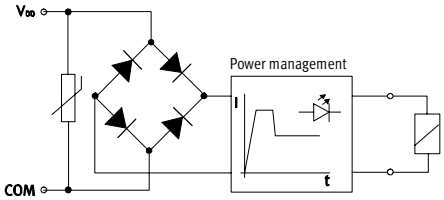
Key features – Electrical components

Electrical power as a result of current reduction

Each valve solenoid coil is protected with a spark arresting protective circuit as well as against polarity reversal.
All valve types are additionally equipped with an integrated current reduction, e.g. for fieldbus:

- Pull current: 60 mA
- Holding current after 20 ms: 25 mA

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



Fieldbus connection

All functions and features of the electrical peripherals CPX are permitted in connection with the CPX interface. This means:

- The valves and electrical outputs are supplied via the operating voltage connection of the CPX
- The valves are supplied and disconnected separately via a separate port on the CPX (code V)

Note

Further information can be found in
➔ 4 / 4.8-2 Modular electrical terminal CPX

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 coils 1 ... 24 in order.
If there are fewer than 24 coils on 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 activate exactly one valve solenoid coil. If the maximum configurable number of valve positions is 24, this means that 24 valves can be addressed with one valve solenoid coil.
With 12 or less valve positions, 2 valve 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.

The manifold blocks for valves with two solenoid coils are always mounted directly following the electrical multi-pin plug connection, followed by the manifold blocks for single solenoid valves. The following table provides details of all possible variants and their assignment to pin allocation and core colour (areas shown against a grey background indicate the manifold blocks for double solenoid valves):

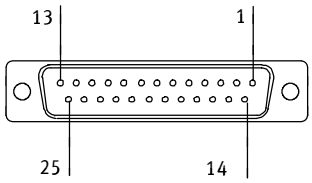
Note

If a single solenoid valve is assembled on a double solenoid valve position, the second address is unused.

Valve terminal type 32 MPA, Modular Performance

Key features – Electrical components

Pin allocation – Sub-D socket, cable



Pin	Address	Core colour	Valve positions					
			4	8	12	16	20	24
			Valve position no./coil designation					
1	0	white	0/14	0/14	0/14	0/14	0/14	0/14
2	1	green	0/12	0/12	0/12	0/12	0/12	1/14
3	2	yellow	1/14	1/14	1/14	1/14	1/14	2/14
4	3	grey	1/12	1/12	1/12	1/12	1/12	3/14
5	4	pink	2/14	2/14	2/14	2/14	2/14	4/14
6	5	blue	2/12	2/12	2/12	2/12	2/12	5/14
7	6	red	3/14	3/14	3/14	3/14	3/14	6/14
8	7	purple	3/12	3/12	3/12	3/12	3/12	7/14
9	8	grey-pink		4/14	4/14	4/14	4/14	8/14
10	9	red-blue		4/12	4/12	4/12	5/14	9/14
11	10	white-green		5/14	5/14	5/14	6/14	10/14
12	11	brown-green		5/12	5/12	5/12	7/14	11/14
13	12	white-yellow		6/14	6/14	6/14	8/14	12/14
14	13	yellow-brown		6/12	6/12	6/12	9/14	13/14
15	14	white-grey		7/14	7/14	7/14	10/14	14/14
16	15	grey-brown		7/12	7/12	7/12	11/14	15/14
17	16	white-pink			8/14	8/14	12/14	16/14
18	17	pink-brown			8/12	9/14	13/14	17/14
19	18	white-blue			9/14	10/14	14/14	18/14
20	19	brown-blue			9/12	11/14	15/14	19/14
21	20	white-red			10/14	12/14	16/14	20/14
22	21	brown-red			10/12	13/14	17/14	21/14
23	22	white-black			11/14	14/14	18/14	22/14
24	23	brown			11/12	15/14	19/14	23/14
25	0 V	black	1)					

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

Note

The drawing shows the view onto the Sub-D socket at the multi-pin cable VMPA-KMS1-....

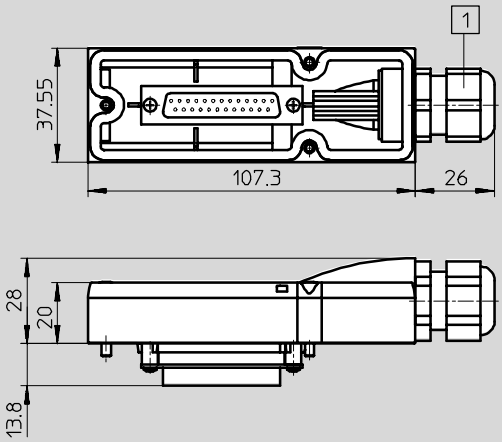
Valve terminal type 32 MPA, Modular Performance

Key features – Electrical components

FESTO

Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

Multi-pin cable



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

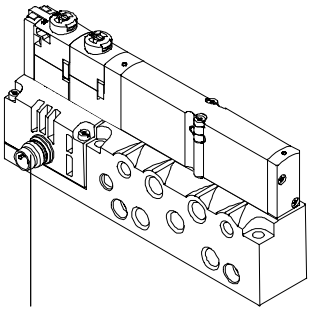
Type	Sheath	Length [m]	Core x mm^2	D [mm]	Part No.
VMPA-KMS1-8-2.5	PVC	2.5	10 x 0.34	6.9	**533 195**
VMPA-KMS2-8-2.5-PUR	PUR	2.5	10 x 0.25	8.3	**533 504**
VMPA-KMS1-8-5	PVC	5	10 x 0.34	6.9	**533 196**
VMPA-KMS2-8-5-PUR	PUR	5	10 x 0.25	8.3	**533 505**
VMPA-KMS1-8-10	PVC	10	10 x 0.34	6.9	**533 197**
VMPA-KMS2-8-10-PUR	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 terminal type 32 MPA, Modular Performance

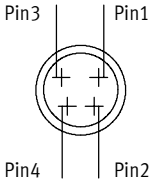
Key features – Electrical components

FESTO

Electrical connection, individual valve



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



Pin allocation on individual valve to VDMA 24 571

With positive logic:
Pin1 – Not allocated
Pin2 – U_B for coil 12
Pin3 – 0 V for coils 12 and 14
Pin4 – U_B for coil 14

With negative logic:
Pin1 – Not allocated
Pin2 – 0 V for coil 12
Pin3 – U_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 cable

Type	Designation	Version	Cable length [m]	Part No.
SIM-M8-4GD-2,5-PU	Plug socket with cable	Straight socket	2.5	**158 960**
SIM-M8-4GD-5-PU	Plug socket with cable	Straight socket	5	**158 961**
SIM-M8-4WD-2,5-PU	Plug socket with cable	Angled socket	2.5	**158 962**
SIM-M8-4WD-5-PU	Plug socket with cable	Angled socket	5	**158 963**

Valve terminal type 32 MPA, Modular Performance

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, yet 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 51 524-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/m^3 must not be exceeded (see ISO 8573-1 Class 2).

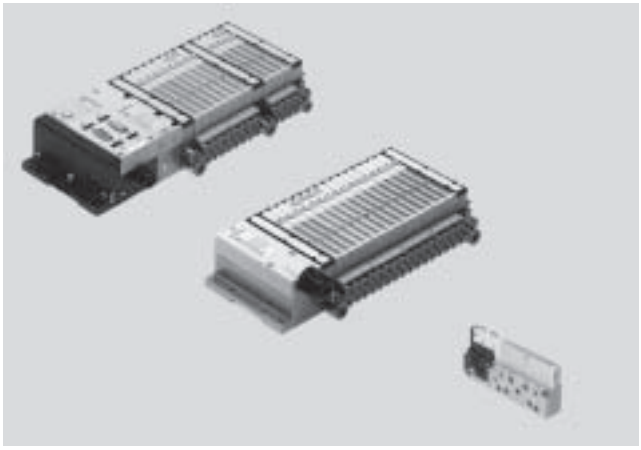
Mineral oils
When using mineral oils (e.g. HLP oils to DIN 51 524, parts 1 through 3) or similar oils based on poly-alpha-olefins (PAO), the maximum residual oil content of 5 mg/m^3 must not be exceeded (see ISO 8573-1 Class 4).
A higher residual oil content irrespective of the compressor oil cannot be permitted, as the basic lubricant would be washed away over time.

Valve terminal type 32 MPA, Modular Performance

Technical data

FESTO

- Flow rates of up to 360 l/min
- Valve width 10 mm
- Voltage 24 V DC



General technical data											
Valve function	5/2-way valve		2x 3/2-way valve Normal position			5/3-way valve Mid-position			1x 3/2-way valve	2x 2/2-way valve
	Single sole-noid	Double sole-noid	Open	Closed	1x open 1x closed	Pressur-ised	Closed	Ex-hausted	Closed	Closed
Valve function order code	M	J	N	K	H	B	G	E	X	D

Constructional design		Electromagnetically actuated piston spool valve
Width	[mm]	10
Nominal size	[mm]	2.5
Lubrication		Lubrication for life, PWIS-free (free of paint-wetting impairment substances)
Type of mounting		Wall mounting On H-rail to DIN EN 50 022
Mounting position		Any
Manual override		Push-in, rotary/detenting, covered
Pneumatic connections		
Pneumatic connection		Via manifold block or individual connection
Supply port	1	G¼ (M5 with individual sub-base)
Exhaust port	3/5	G¼ (M5 with individual sub-base)
Working lines	2/4	Depending on the connection type selected ■ M7 ■ QS-4 ■ QS-6
Pilot air port	12/14	M7 (M3 with individual sub-base)
Pilot exhaust air port	82/84	M7 (M3 with individual sub-base)
Pressure compensation port		With ducted exhaust air: M7 via port 82/84 (M3 with individual sub-base) With integrated silencer: Venting to atmosphere

Valve terminal type 32 MPA, Modular Performance

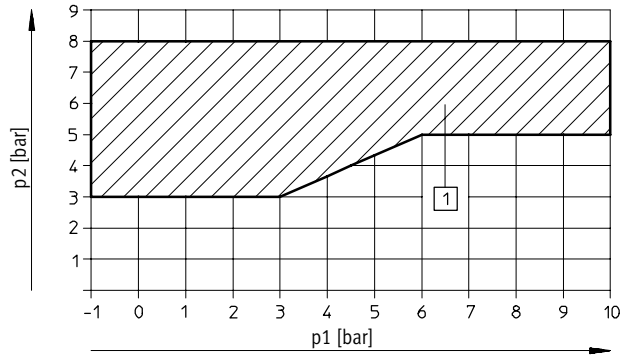
Technical data

FESTO

Operating pressure [bar]										
Valve function order code	M	J	N	K	H	B	G	E	X	D
Without pilot air supply	3 ... 8									
With pilot air supply	–0.9 ... +10		3 ... 10			–0.9 ... +10				3 ... 10

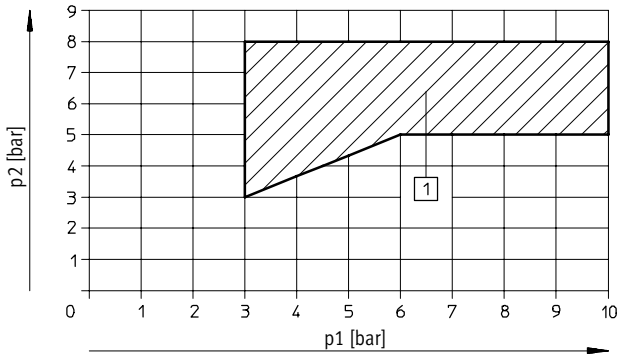
Pilot pressure p2 as a function of the working pressure p1 with external auxiliary pilot air

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



1 Operating range for valves with external auxiliary pilot air

for valves with code N, K, H, D



1 Operating range for valves with external auxiliary pilot air

Valve response times [ms]											
Valve function order code		M	J	N	K	H	B	G	E	X	D
Response times	on	10	–	10	10	10	10	10	10	10	10
	off	20	–	20	20	20	35	35	35	20	20
	change-over	–	10	–	–	–	–	–	–	–	–

Operating and environmental conditions		
Valve function order code		M, J, N, K, H, B, G, E, X, D
Operating medium		Filtered compressed air, lubricated or unlubricated, inert gases ➔ 4 / 2.2-24
Grade of filtration	[µm]	40 (average pore size)
Ambient temperature	[°C]	–5 ... +50
Storage temperature[2]	[°C]	–20 ... +40
Corrosion resistance class CRC[1]		1

1) Corrosion resistance class 1 according to 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.
2) Long-term storage

Valve terminal type 32 MPA, Modular Performance

Technical data

FESTO

Electrical data											
Valve function order code	M	J	N	K	H	B	G	E	X	D	
Electromagnetic compatibility of the MPA valve terminal with Sub-D or fieldbus connection	Interference emission tested to EN 61 000-6-4, industry										
	Interference immunity[1] tested to EN 61 000-6-2, industry										
Protection against electric shock (protection against direct and indirect contact to EN 60204-1/IEC 204)	Through PELV power supply unit										
Operating voltage [V]	24 (±25%)										
Intrinsic current consumption at operating voltage 24 V with CPX terminal [mA]	13 … 20[2]										
Load voltage with CPX terminal [V]	24 (±25%)										
Intrinsic current consumption at load voltage 24 V [mA]											
■ Not electrically isolated	8[2]										
■ Electrically isolated	25[2]										
Current consumption per solenoid coil											
■ With CPX terminal	Nominal pull current (up to 20 ms) 60 mA/nominal current with current reduction (after 20 ms) 25 mA										
■ With MP connection at 18 V	Nominal pull current (up to 20 ms) 60 mA/nominal current with current reduction (after 20 ms) 20 mA										
at 24 V	Nominal pull current (up to 20 ms) 80 mA/nominal current with current reduction (after 20 ms) 20 mA										
at 30V	Nominal pull current (up to 20 ms) 100 mA/nominal current with current reduction (after 20 ms) 20 mA										
Electrical power consumption [W]	Pull: 1 Hold: 0.24										
Duty cycle	100% at 40°C ambient temperature										
Protection class to EN 60 529	IP65 (in assembled state and with detenting plug)										
Relative air humidity	90% at 40°C, non-condensing										
Vibration resistance	To DIN/IEC 68/EN 60 068, Parts 2-6 ■ Up to 5 manifold blocks (without additional mounting): 0.35 mm at 10 … 60 Hz, 5 g at 60 … 150 Hz ■ Up to 6 manifold blocks (with additional mounting): 0.35 mm at 10 … 60 Hz, 5 g at 60 … 150 Hz ■ 6 manifold blocks or more (without additional mounting): 0.15 mm at 10 … 58 Hz, 2 g at 58 … 150 Hz										
Shock resistance	To DIN/IEC 68/EN 60 068, Parts 2-27 ■ Up to 5 manifold blocks (without additional mounting): +/−30 g at 11 ms, 15 cycles ■ Up to 6 manifold blocks (with additional mounting): +/−30 g at 11 ms, 15 cycles ■ 6 manifold blocks or more (without additional mounting): +/−15 g at 11 ms, 15 cycles										
Continuous shock resistance	To DIN/IEC 68/EN 60 068, Parts 2-29: +/−15 g at 6 ms, 1000 cycles										

1) The maximum signal line length is 10 m
2) Intrinsic current consumption per electronics module

Materials											
Valve function order code	M	J	N	K	H	B	G	E	X	D	
Manifold block	Die-cast aluminium										
Valve	Die-cast aluminium, PPS, ST, PA-GF										
Seals	NBR, HNBR, Viton										
Supply plate	Die-cast aluminium										
Right-hand end plate	Die-cast aluminium										
Left-hand pneumatic interface	Die-cast aluminium, polyamide 6 (cover)										
Exhaust plate	Polyamide										
Integrated silencer	Polyethylene										
Electronics module	POM/polycarbonate										
Electrical manifold module	CuBe/PBT										

Valve terminal type 32 MPA, Modular Performance

Technical data

FESTO

Product weight [g]	Approx. weights									
Valve function order code	M	J	N	K	H	B	G	E	X	D
Basic manifold block weight (4-off)[1]	185									
Individual sub-base	45									
Per valve M, X	49									
Per valve J, N, K, H, B, G, E, D	56									
Per vacant position L	24									
Right-hand end plate	55									
Left-hand pneumatic interface[1]										
■ With integrated silencer	315									
■ With ducted exhaust air	324									
Supply plate[1]										
■ With integrated silencer	111									
■ With ducted exhaust air	120									
QSM-M5-3-I	3									
QSM-M5-4-I	4									
QSM-M5-6-I	5									
QSM-M7-4-I	4									
QSM-M7-6-I	5									
QS-G¼-8-I	22									
QS-G¼-10-I	23									

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

Nominal flow rate [l/min][1]			
Code	Valve function	Valve (1 → 2)[2]	Valve (2 → 3)[2]
Sub-base valve			
M	5/2-way valve, single solenoid	360	360
J	5/2-way valve, double solenoid	360	360
N	2x 3/2-way valve, normally open	300	300
K	2x 3/2-way valve, normally closed	230	310
H	2x 3/2-way valve, 1x normally open 1x normally closed	280	305
B	5/3-way valve, mid-position pressurised	300	270
G	5/3-way valve, mid-position closed	320	320
E	5/3-way valve, mid-position exhausted	240	240
X	1x 3/2-way valve	255	295
D	2x 2/2-way valve	230	230

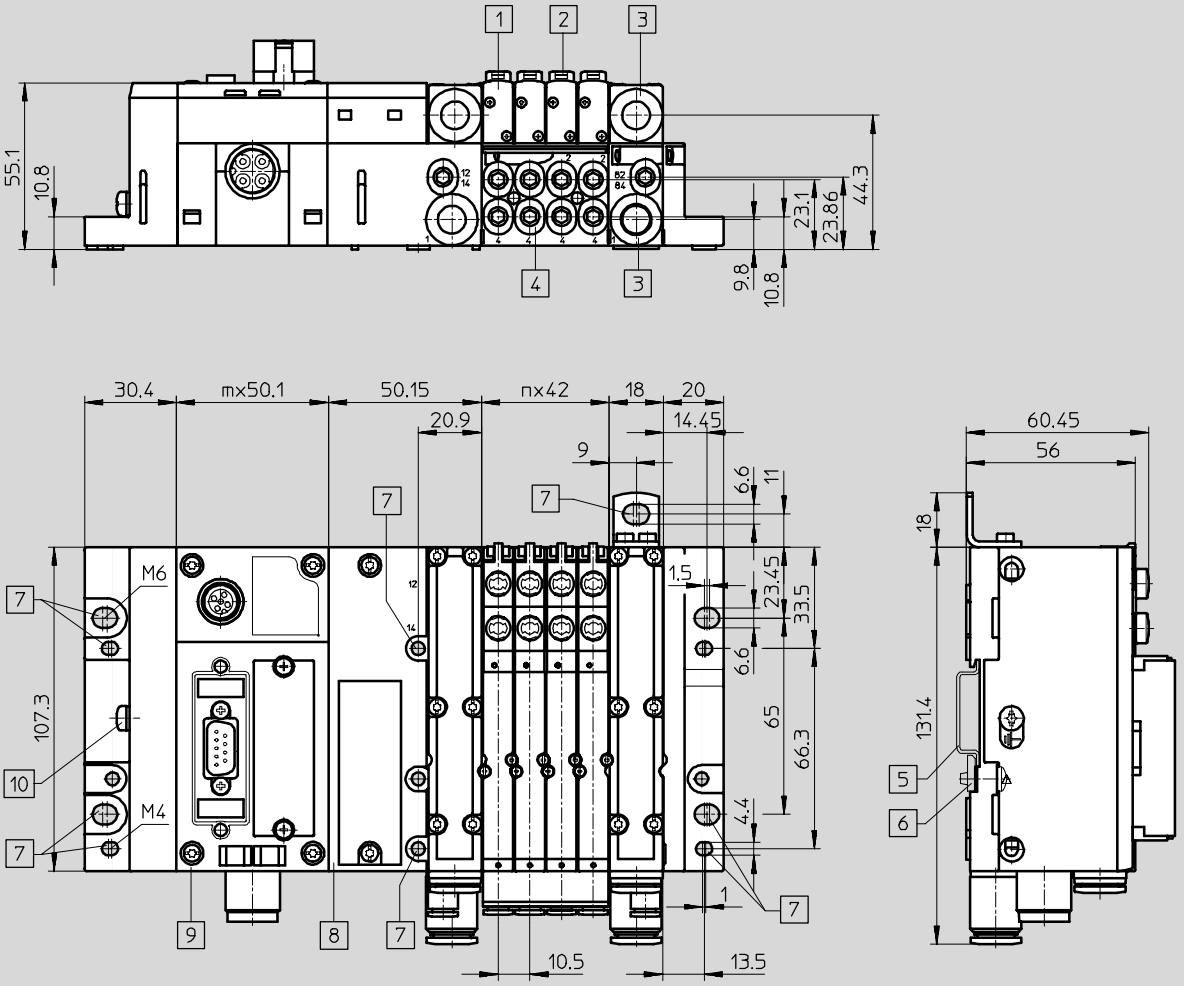
1) Flow rates measured on sub-base with QS-6 push-in connectors
2) Values refer to the flow direction 1 → 2 or 2 → 3, values also apply to individual sub-bases

Valve terminal type 32 MPA, Modular Performance

Technical data

Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

Valve terminal with fieldbus connection



1 Solenoid valve
2 Manual override
3 Supply/exhaust ports
4 Working lines
5 H-rail
6 Mounting for H-rail
7 Mounting holes
8 Pneumatic interface (CPX interface)
9 CPX module
10 Earthing screw
n Number of sub-bases in a grid of 4 valves
m Number of CPX modules

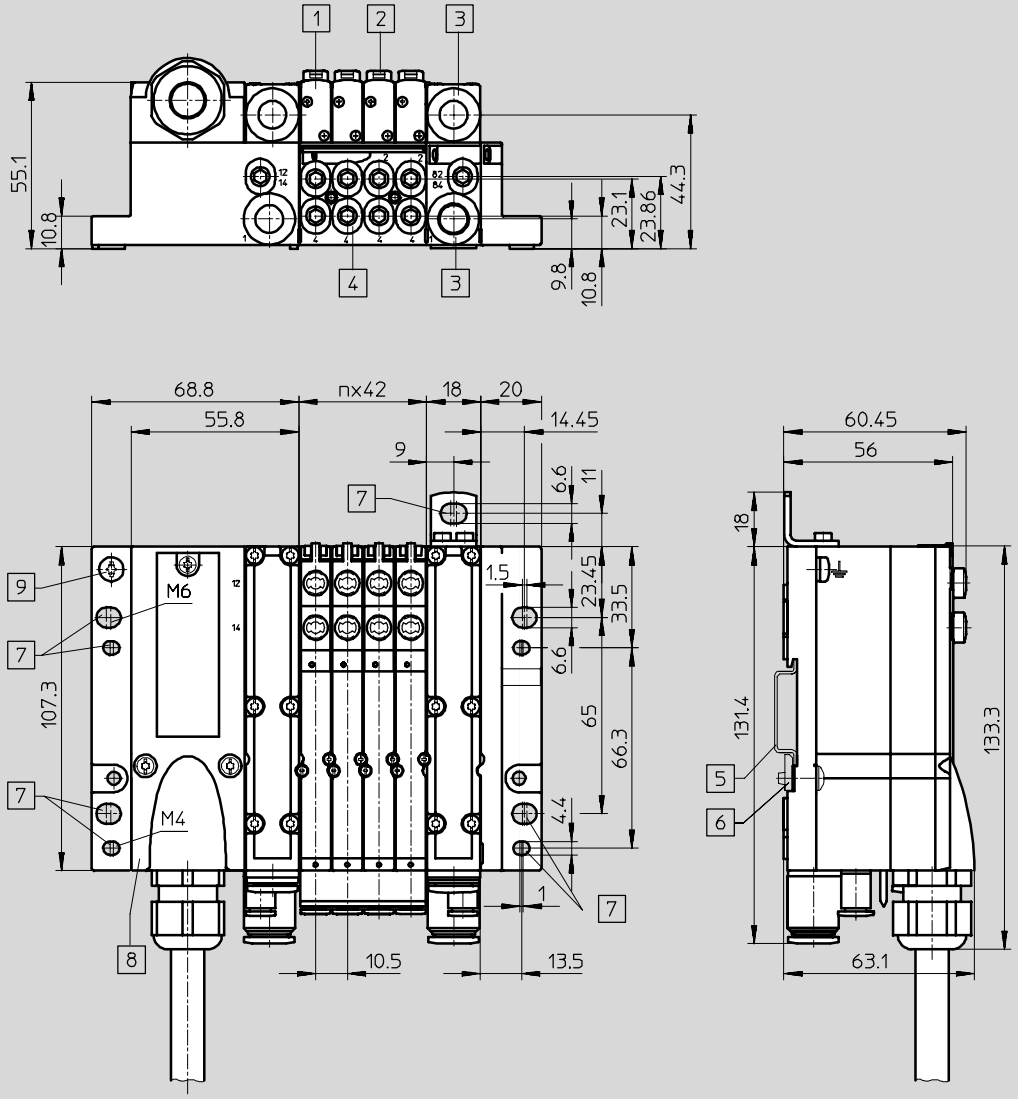
Valve terminal type 32 MPA, Modular Performance

Technical data

FESTO

Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

Valve terminal with multi-pin plug connection



1 Solenoid valve
2 Manual override
3 Supply/exhaust ports
4 Working lines
5 H-rail
6 Mounting for H-rail
7 Mounting holes
8 Multi-pin plug connection
9 Earthing screw
n Number of sub-bases in a grid of 4 valves

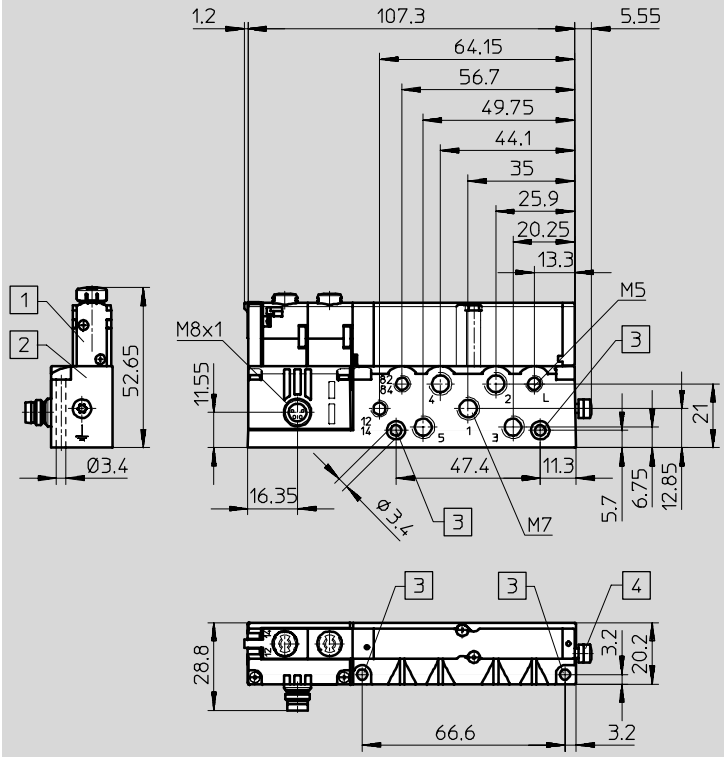
Valve terminal type 32 MPA, Modular Performance

Technical data

FESTO

Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

Valve on individual sub-base



1 Solenoid valve
2 Individual sub-base
3 4x mounting holes for screw M3
4 Earthing screw

Valve terminal type 32 MPA, Modular Performance – Electrical part MP1

FESTO

Ordering data – Modular products

M Mandatory data					O Options	
Module No.	**Valve terminal, electrical part**		**Electrical actuation**	**User documentation**	**Electrical accessories**	
533 203	32E		MP1	D E F I S V B	H A B C D E F GA GB GC GD GE GF	
Ordering example						
533 203	**32E**	**–**	**MP1**	**–**	**D**	**+** **HGD**

Ordering table

Size		10	Condi-tions	Code	Enter code
M	Module No.	**533 203**			
	Valve terminal, electrical part	MPA valve terminal with multi-pin plug connection		**32E**	32E
	Electrical actuation	Multi-pin plug connection		**-MP1**	-MP1
	User documentation	German		**-D**	
		English		**-E**	
		French		**-F**	
		Italian		**-I**	
		Spanish		**-S**	
		Swedish		**-V**	
		Express waiver - no manual to be included (already available)		**-B**	
O	Electrical accessories			**+**	+
	Attachment for H-rail mounting	1		**H**	
	Pre-assembled multi-pin cable	Pre-assembled multi-pin cable for 8 valves, 2.5 m, Sub-D, PVC	1	**A**	
		Pre-assembled multi-pin cable for 8 valves, 5 m, Sub-D, PVC	1	**B**	
		Pre-assembled multi-pin cable for 8 valves, 10 m, Sub-D, PVC	1	**C**	
		Pre-assembled multi-pin cable for 24 valves, 2.5 m, Sub-D, PVC		**D**	
		Pre-assembled multi-pin cable for 24 valves, 5 m, Sub-D, PVC		**E**	
		Pre-assembled multi-pin cable for 24 valves, 10 m, Sub-D, PVC		**F**	
		Pre-assembled multi-pin cable for 8 valves, 2.5 m, Sub-D, PUR	1	**GA**	
		Pre-assembled multi-pin cable for 8 valves, 5 m, Sub-D, PUR	1	**GB**	
		Pre-assembled multi-pin cable for 8 valves, 10 m, Sub-D, PUR	1	**GC**	
		Pre-assembled multi-pin cable for 24 valves, 2.5 m, Sub-D, PUR		**GD**	
		Pre-assembled multi-pin cable for 24 valves, 5 m, Sub-D, PUR		**GE**	
		Pre-assembled multi-pin cable for 24 valves, 10 m, Sub-D, PUR		**GF**	

1 **A, B, C, GA, GB, GC**
Only 1 manifold block can be selected for size 1.

Transfer order code

533 203	**32E**	**–**	**MP1**	**–**		**+**

Valve terminal type 32 MPA, Modular Performance – Pneumatic part MP1

Ordering data – Modular products

FESTO

M Mandatory data →

Module No.	Valve terminal, pneumatic part		Compressed-air supply to valve terminal	Pneumatic working line	Pneumatic connection to supply		Manual override		Pneumatic module blocks 0 … 6
533 203	32P		S, T, V, X	G, F, C	L, K, D		N, R, V		Type of module block: M, A
Ordering example									Module position: 0 1 2 3 4 5 6
533 203	32P	–	X	C	L	–	V	–	M A
									R
									U
									U
									Supply plate
									S, T, R
									Channel separation
									O Options

Ordering table

Size		10	Conditions	Code	Enter code
M	Module No.	**533 203**			
	Valve terminal, pneumatic part	MPA modular sub-base valves		**32P**	32P
	Compressed-air supply to valve terminal	Internal auxiliary pilot air, silencer		**-S**	
		External auxiliary pilot air, silencer		**-T**	
		Internal auxiliary pilot air, ducted	2	**-V**	
		External auxiliary pilot air, ducted	2	**-X**	
	Pneumatic working line	Push-in connector large on working line		**G**	
		Push-in connector small on working line		**F**	
		Thread on working line		**C**	
	Pneumatic connection to supply	Push-in connector large for supply		**L**	
		Push-in connector small for supply		**K**	
		Thread for supply		**D**	
	Manual override	Push-in		**-N**	
		Push-in/detenting		**-R**	
		Covered		**-V**	
	Pneumatic module blocks 0 … 6			**-**	-
	Type of module block 0 … 6	Pneumatic interface	3	**M**	Enter equipment selection for module positions in order code (use commas to separate module positions)
		Manifold block for size 1		**A**	
O	Channel separation for block 0 … 6	Separating seal for channel 1, 3, 5		**S**	
		Separating seal for channel 1		**T**	
		Separating seal for channel 3, 5		**R**	
↓	Supply plate for block 1 … 6	Supply plate	4	**U**	

2 **V, X** Supply plate U must be selected.
3 **M** Only at module position 0.
4 **U** Only at the end of the pneumatic part.

Transfer order code

533 203	32P	–				–		–	, , , , , ,

Valve terminal type 32 MPA, Modular Performance – Pneumatic part MP1

FESTO

Ordering data – Modular products

M Mandatory data	O Options
Pneumatic valve positions 0 ... 23	Pneumatic accessories
M, J, N, K, H, B, G, E, D, X, L	...T

Valve position

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
–	J	K	M	M	M	D	L	J																	+	8T

Ordering table

Size		10	Condi-tions	Code		Enter code
↓	Equipment at valve position 0 ... 23			-		-
M	Valves	5/2-way valve, single solenoid		M		Enter equip-ment selection for valve positions in order code
		5/2-way valve, double solenoid	5	J		
		2x3/2-way valve, normally open	5	N		
		2x3/2-way valve, normally closed	5	K		
		2x3/2-way valve, 1x normally open, 1x closed	5	H		
		5/3-way valve, mid-position pressurised	5	B		
		5/3-way valve, mid-position closed	5	G		
		5/3-way valve, mid-position exhausted	5	E		
		2x2/2-way valve, normally closed	5	D		
		3/2-way valve, normally closed, external air supply		X		
		Vacant position		L		
O	Pneumatic accessories			+		+
	Inscription label, size 1	1 ... 99		...T		

5 **J, N, K, H, B, G, E, D**
Position 0 ... 11 only.

Transfer order code

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
–																									+	

Valve terminal type 32 MPA, Modular Performance – Pneumatic part CPX

Ordering data – Modular products

FESTO

M Mandatory data →

Module No.	Valve terminal, pneumatic part	Compressed-air supply to valve terminal	Pneumatic working line	Pneumatic connection to supply	Manual override	Pneumatic module blocks 0 ... 8
530 411	32P	S, T, V, X	G, F, C	L, K, D	N, R, V	Type of module block: M, A
Ordering example						Module position: 0 1 2 3 4 5 6 7 8
530 411	**32P**	– **V**	**C**	**K**	– **R**	– **M**

S

V U

U, V, W
Supply plate

S, T, R
Channel separation

0 Options

Ordering table

Size		10	Conditions	Code	Enter code
M	Module No.	**530 411**			
	Valve terminal, pneumatic part	MPA modular sub-base valves		**32P**	32P
	Compressed-air supply to valve terminal	Internal auxiliary pilot air, silencer		**-S**	
		External auxiliary pilot air, silencer		**-T**	
		Internal auxiliary pilot air, ducted	1	**-V**	
		External auxiliary pilot air, ducted	1	**-X**	
	Pneumatic working line	Push-in connector large on working line		**G**	
		Push-in connector small on working line		**F**	
		Thread on working line		**C**	
	Pneumatic connection to supply	Push-in connector large for supply		**L**	
		Push-in connector small for supply		**K**	
		Thread for supply		**D**	
	Manual override	Push-in		**-N**	
		Push-in/detenting		**-R**	
		Covered		**-V**	
	Pneumatic module blocks 0 ... 8			-	-
	Type of module block 0 ... 8	Pneumatic interface	2	**M**	Enter equipment selection for module positions in order code (use commas to separate module positions)
		Manifold block for size 1	3	**A**	
0	Channel separation for block 0 ... 8	Separating seal for channel 1, 3, 5	4	**S**	
		Separating seal for channel 1	4	**T**	
		Separating seal for channel 3, 5	4	**R**	
	Supply plate for block 0 ... 8	Supply plate	5	**U**	
		Supply plate with separating seal on left	6	**V**	
↓		Supply plate with separating seal on right	6	**W**	

1 **V, X** At least 1 supply plate U, V or W must be selected (position freely selectable).
2 **M** Only at module position 0.
3 **A** Uses 4 valve positions and occupies 8 digital outputs. Each manifold block must be fully equipped.
4 **S, T, R** If the same channel is separated a number of times, a supply plate must be placed in between.
5 **U** Must be selected if no separating seal R, S or T was selected.
6 **V, W** Must be selected if no separating seal R, S or T was selected.

Ordering example

530 411	**32P**	–				–		–	,	,	,	,	,	,	,	,	,	,	,

Valve terminal type 32 MPA, Modular Performance – Pneumatic part CPX

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Ordering data – Modular products

M Mandatory data	O Options
Pneumatic valve positions 0 ... 31	Pneumatic accessories
M, J, N, K, H, B, G, E, D, X, L	...T, ...J

Valve position

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
–	J	J	L	G	M	M	B																										+	7T7J

Ordering table

Size		10	Condi-tions	Code		Enter code
↓	Equipment at valve position 0 ... 31			-		-
M	Valves	5/2-way valve, single solenoid		M		Enter equip-ment selection for valve positions in order code
		5/2-way valve, double solenoid		J		
		2x 3/2-way valve, normally open		N		
		2x 3/2-way valve, normally closed		K		
		2x 3/2-way valve, 1x normally open, 1x closed		H		
		5/3-way valve, mid-position pressurised		B		
		5/3-way valve, mid-position closed		G		
		5/3-way valve, mid-position exhausted		E		
		2x 2/2-way valve, normally closed		D		
		3/2-way valve, normally closed, external air supply		X		
		Vacant position		L		
O	Pneumatic accessories			+		+
	Inscription label, size 1	1 ... 99		...T		
	Mounting bracket for additional wall mounting	1 ... 99		...J		

Transfer order code

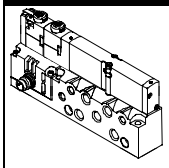
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
–																																	+	

Valve terminal type 32 MPA, Modular Performance

Ordering data – Individual valve

Ordering data

Valves on individual sub-base



Code	Valve function	Type	Part No.
Internal auxiliary pilot air			
M	5/2-way valve, single solenoid	**VMPA1-M1H-M7-PI**	**533 376**
J	5/2-way valve, double solenoid	**VMPA1-M1H-J-M7-PI**	**533 377**
N	2x 3/2-way valve, normally open	**VMPA1-M1H-N-M7-PI**	**533 382**
K	2x 3/2-way valve, normally closed	**VMPA1-M1H-K-M7-PI**	**533 381**
H	2x 3/2-way valve, 1x normally open 1x normally closed	**VMPA1-M1H-H-M7-PI**	**533 383**
B	5/3-way valve, mid-position pressurised	**VMPA1-M1H-B-M7-PI**	**533 378**
G	5/3-way valve, mid-position closed	**VMPA1-M1H-G-M7-PI**	**533 379**
E	5/3-way valve, mid-position exhausted	**VMPA1-M1H-E-M7-PI**	**533 380**
D	2x 2/2-way valve normally closed	**VMPA1-M1H-D-M7-PI**	**533 384**
External auxiliary pilot air			
M	5/2-way valve, single solenoid	**VMPA1-M1H-MS-M7-PI**	**533 385**
J	5/2-way valve, double solenoid	**VMPA1-M1H-JS-M7-PI**	**533 386**
N	2x 3/2-way valve, normally open	**VMPA1-M1H-NS-M7-PI**	**533 391**
K	2x 3/2-way valve, normally closed	**VMPA1-M1H-KS-M7-PI**	**533 390**
H	2x 3/2-way valve, 1x normally open 1x normally closed	**VMPA1-M1H-HS-M7-PI**	**533 392**
B	5/3-way valve, mid-position pressurised	**VMPA1-M1H-BS-M7-PI**	**533 387**
G	5/3-way valve, mid-position closed	**VMPA1-M1H-GS-M7-PI**	**533 388**
E	5/3-way valve, mid-position exhausted	**VMPA1-M1H-ES-M7-PI**	**533 389**
D	2x 2/2-way valve normally closed	**VMPA1-M1H-DS-M7-PI**	**533 393**

Valve terminal type 32 MPA, Modular Performance

Accessories

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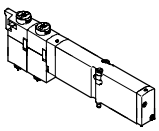
Ordering data

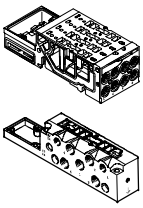
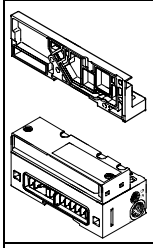
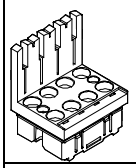
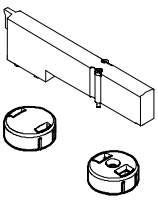
Individual sub-base valve

	Code	Valve function	Electrical plug-in connection	
			Type	Part No.
	M	5/2-way valve, single solenoid	**VMPA1-M1H-M-PI**	**533 342**
	J	5/2-way valve, double solenoid	**VMPA1-M1H-J-PI**	**533 343**
	N	2x 3/2-way valve, normally open	**VMPA1-M1H-N-PI**	**533 348**
	K	2x 3/2-way valve, normally closed	**VMPA1-M1H-K-PI**	**533 347**
	H	2x 3/2-way valve, 1x normally open 1x normally closed	**VMPA1-M1H-H-PI**	**533 349**
	B	5/3-way valve, mid-position pressurised	**VMPA1-M1H-B-PI**	**533 344**
	G	5/3-way valve, mid-position closed	**VMPA1-M1H-G-PI**	**533 345**
	E	5/3-way valve, mid-position exhausted	**VMPA1-M1H-E-PI**	**533 346**
	X	1x 3/2-way valve normally closed, external compressed-air supply	**VMPA1-M1H-X-PI**	**534 415**
	D	2x 2/2-way valve normally closed	**VMPA1-M1H-D-PI**	**533 350**

Valve terminal type 32 MPA, Modular Performance

Accessories

FESTO

Ordering data				
Designation			Type	Part No.
Inscription labels				
	6 x 10 in frames, pack of 64 for CPX identification		**IBS-6x10**	**18 576**
	Inscription label holder for manifold block, 4-fold		**VMPA1-ST-1-4**	**533 362**
	38 x 9 for manifold block		**MPA**	**663 739**
	20 x 45 for pneumatic interface		**MPA**	**663 010**
Mounting				
	For H-rail	MPA with fieldbus	**CPX-CPA-BG-NRH**	**526 032**
	For H-rail	MPA with multi-pin plug connection	**CPA-BG-NRH**	**173 498**
	Mounting bracket		**VMPA-BG-RW**	**534 416**
Sub-base				
	4-fold		**VMPA1-FB-AP-4-1**	**533 352**
	Individual connection, internal auxiliary pilot air		**VMPA1-IC-AP-1**	**533 394**
	Individual connection, external auxiliary pilot air		**VMPA1-IC-AP-S-1**	**533 395**
End plates and pneumatic interface fieldbus				
	Right-hand end plate		**VMPA-EPR**	**533 373**
	Pneumatic interface, ducted exhaust air, internal auxiliary pilot air		**VMPA-FB-EPL-G**	**533 370**
	Pneumatic interface, ducted exhaust air, external auxiliary pilot air		**VMPA-FB-EPL-E**	**533 369**
	Pneumatic interface, integrated silencer, internal auxiliary pilot air		**VMPA-FB-EPL-GU**	**533 372**
	Pneumatic interface, integrated silencer, external auxiliary pilot air		**VMPA-FB-EPL-EU**	**533 371**
Electronics modules				
	Fieldbus, standard		**VMPA1-FB-EMS-8**	**533 360**
	Fieldbus, electrically isolated		**VMPA-FB-EMG-8**	**533 361**
	Multi-pin, 4 coils		**VMPA-MP-EMS-4**	**533 367**
	Multi-pin, 8 coils		**VMPA-MP-EMS-8**	**533 368**
Blanking plate				
	Blanking plate for vacant position[1)]		**VMPA1-RP**	**533 351**
	Cover for manual override, detenting (10 pieces)		**VMPA1-HBT**	**533 366**
	Cover for manual override, covered (10 pieces)		**VMPA1-HBV**	**535 257**

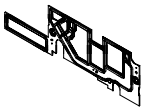
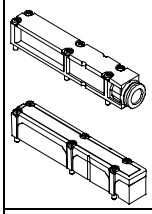
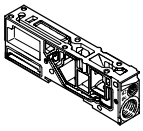
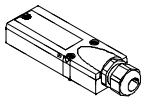
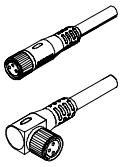
1) One self-adhesive label supplied.

Valve terminal type 32 MPA, Modular Performance

Accessories

FESTO

Ordering data

Designation			Type	Part No.
Seals for manifold block				
	MPA with ducted exhaust air	No channel separated	**VMPA1-DP**	**533 359**
		Channel 1 separated	**VMPA1-DP-P**	**533 363**
		Channel 3/5 separated	**VMPA1-DP-RS**	**533 364**
		Channel 1 and 3/5 separated	**VMPA1-DP-PRS**	**533 365**
	MPA with integrated silencer	No channel separated	**VMPA1-DPU**	**533 355**
		Channel 1 separated	**VMPA1-DPU-P**	**533 356**
		Channel 3/5 separated	**VMPA1-DPU-RS**	**533 357**
		Channel 1 and 3/5 separated	**VMPA1-DPU-PRS**	**533 358**
Exhaust plate				
	With ducted exhaust air		**VMPA-AP**	**533 375**
	With integrated silencer		**VMPA-APU**	**533 374**
Supply plates (without exhaust plate)				
	With ducted exhaust air		**VMPA1-FB-SP**	**533 354**
	With integrated silencer		**VMPA1-FB-SPU**	**533 353**
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-KMS1-8-2,5**	**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-KMS2-24-2,5-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**
Individual connection, electrical				
	Plug socket with cable, straight	2.5 m	**SIM-M8-4GD-2,5-PU**	**158 960**
		5 m	**SIM-M8-4GD-5-PU**	**158 961**
	Plug socket with cable, angled	2.5 m	**SIM-M8-4WD-2,5-PU**	**158 962**
		5 m	**SIM-M8-4WD-5-PU**	**158 963**
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 G¼ for tubing O.D.	8 mm (10 pieces)	**QS-G¼-8-I**	**186 110**
		10 mm (10 pieces)	**QS-G¼-8-I**	**186 112**

Valve terminal type 32 MPA, Modular Performance

Accessories

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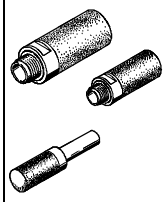
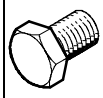
Ordering data

Designation			Type	Part No.
Silencer				
	Connecting thread	M5	**UC-M5**	**165 003**
		M7	**UC-M7**	**161 418**
		G¼	**UC-G¼**	**165 004**
	Connection type, push-in sleeve	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**
	Integrated silencer MPA			**662 567**
Blanking plug				
	Thread M5		**B-M5**	**3 843**
	Thread M7		**B-M7**	**174 309**
	Thread G¼		**B-¼**	**3 569**
Plug				
	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**
User documentation				
	User documentation – MPA	German	**P.BE-MPA-DE**	**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**