Valve terminal CPV, Compact Performance

Key features

Innovative

- Cubic design for exceptional performance and low weight
- Low installation and bus connection costs
- Decentralised machines and system structures, for example
  - in handling technology
  - in conveyor technology
  - in the packaging industry
  - in sorting systems
  - in upstream machine functions
- Integrated diagnostics, condition monitoring (Fieldbus Direct)
- String extension with Fieldbus Direct from 8 ... 32 inputs and 8 ... 32 outputs is possible without any problems (depending on version).

Versatile

- Flexible and cost-effective connection of two to eight valve slices
- Highly flexible thanks to:
  - various pneumatic functions (valve variants)
  - different pressure ranges
  - vacuum switch
  - integrated vacuum generation
  - relay plates with floating electrical outputs
- Separator plates for creating pressure zones
- Valves with integrated separation of ducts 1 and 11
- Blanking plates for later extensions

Reliable

- LED displays
- Manual overrides for valves
- Protection class to IP65
- Protection class IP65 also in conjunction with pneumatic multiple connector plate for control cabinet installation
- CE marking
- ATEX certification (see Technical data)

Easy to assemble

- Assembled and inspected unit, ready for installation
- Reduced selection, ordering, installation and commissioning costs
- Secure wall mounting or H-rail mounting
- Pneumatic multiple connector plate – quick mounting with the tubing in place
- Optimised assembly for control cabinets

Key features

CPV – The benefits at a glance

The valve terminal CPV has a unique design. It allows a flexible mix of pneumatic performance, electrical connection technologies and a variety of installation types. In particular, the pneumatic multiple connector plate enables especially space-saving installation in control cabinets. The valve terminal can often be installed directly in the previously unused wall area of the control cabinet. There is no need to connect up the valves inside the cabinet. All tubes can be connected to the outside. Instead of individual drilled holes, the pneumatic multiple connector plate needs just one rectangular through-hole.

The generously sized flow ducts and powerful flat plate silencers ensure high flow rates.
All valves are provided as valve slices. They have a compact and flow-optimised design. With two functions per valve slice (e.g. 2x 3/2-way valves), double the component density can be achieved. This saves space and reduces costs.

The cubic design permits exceptional performance with a comparatively low weight. These advantages become clear when the valve terminal is moved along on a drive.
Despite it being compact, it is also very sturdy. The connecting threads and mounting attachments are metal.

The manual override for the valves can be adapted for different operating situations. If, for example, a detenting manual override is required for set-up, this can later be easily changed again so that inadvertent actuated during operation is prevented.
The clear, large labelling systems also contribute to safe operation.
One particular advantage is the large number of electrical connection technologies. All types of valve control are possible, from individual valve connection to a flexibly expandable bus system. The integration of electric input and output modules permits low-cost solutions in a range of installation concepts.

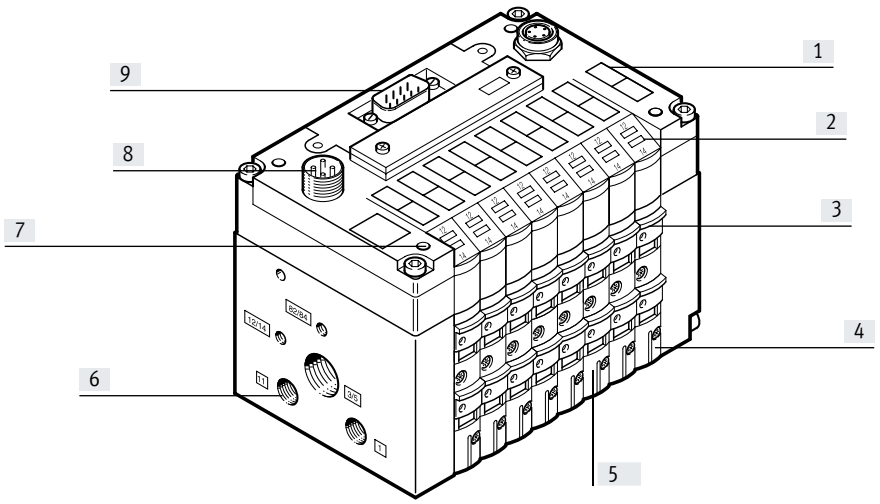
The design principle

Each side of the cubic design has its own specific function. Thus, for example, the electrical connection is mounted on the top.
An optional inscription label holder can be placed on the front of the valve terminal.

The different possible combinations allow the best possible solution for the task in hand.

- Pneumatic supply connections on the left, right or underneath
- Pneumatic working ports and function blocks (vertical stacking) underneath
- Manual operation/identification from the front
- Electrical connection surface on top
- Mounting surface on rear, or at the front via pneumatic multiple connector plate

Main features



[1] Inscription labels
[2] Reduced downtimes: on-site LED diagnostics
[3] Safe operation: Manual override, non-detenting, detenting or blocked
[4] Comprehensive range of valve functions, pressure zone formation, blanking plates
[5] Width:
- 10 mm,
- 14 mm,
- 18 mm

[6] Robust metal thread or pre-assembled QS connectors
[7] Quick mounting:
- Directly using screws
- On an H-rail
- Via the pneumatic multiple connector plate

[8] Operating voltage connection
[9] Simple electrical connections:
- Individual connection/ET200X/ET200pro
- Multi-pin
- AS-Interface
- I-Port interface/IO-Link
- Installation system CP/CPI
- Fieldbus Direct

Key features

Equipment options

Valve functions

- 5/2-way valve, single solenoid
- 5/2-way valve (with duct separation 1, 11), single solenoid
- 5/2-way valve, single solenoid, fast-switching
- 5/2-way valve, double solenoid
- 5/2-way valve (with duct separation 1, 11), double solenoid
- 2x 3/2-way valve, normally closed
- 2x 3/2-way valve (with duct separation 1, 11), normally closed
- 2x 3/2-way valve, normally open
- 2x 3/2-way valve (with duct separation 1, 11), normally open
- 2x 3/2-way valve, 1x normally open, 1x closed
- 2x 3/2-way valve, (with duct separation 1, 11) 1x normally open, 1x closed
- 2x 3/2-way valve, normally closed, integrated back pressure protection
- 5/3-way valve, mid-position closed
- 2x 2/2-way valve, normally closed
- 2x 2/2-way valve (with duct separation 1, 11), normally closed
- 2x 2/2-way valve, 1x normally open, 1x closed
- 2x 2/2-way valve, (with duct separation 1, 11) 1x normally open, 1x closed
- Vacuum generator
- Vacuum generator and 2/2-way valve with ejector pulse
- Relay plate with two floating contacts, can be selected with some versions in place of a valve plate.

Special features

Individual connection

- 2 ... 8 valve positions, max. 16 solenoid coils

Electrical connection for ET200X/ET200pro

- 8 valve positions, max. 16 solenoid coils

Note

With valve terminal CPV10-ET200pro, a moulded seal is required to achieve the IP degree of protection.

The moulded seal must be ordered separately (CPV10-...-GE-8 or CPV14-...-GE-8).

Multi-pin plug connection

- 4, 6 or 8 valve positions, max. 16 solenoid coils

AS-Interface

- 2, 4 or 8 valve positions, max. 8 solenoid coils
- 4 or 8 inputs for 4 or 8 valve positions

I-Port interface/IO-Link

- 8 valve positions, max. 16 solenoid coils
- Direct connection to the CTEU/CTEL installation system from Festo (I-Port)
- Connection to an IO-Link master

Installation system CP/CPI

- 4, 6 or 8 valve positions, max. 16 solenoid coils
- Additional valve terminals and I/O modules having CP/CPI function can be connected via CP/CPI string extension

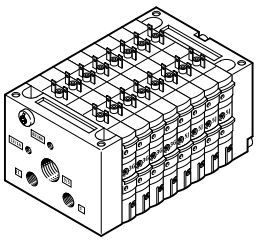
Fieldbus Direct

- 8 valve positions, max. 16 solenoid coils
- Additional valve terminals and I/O modules having CP/CPI functions can be connected via CP/CPI string extension

Key features

Electrical connections

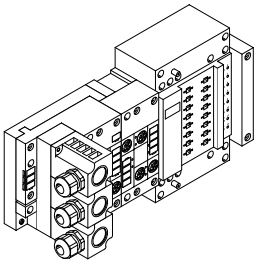
Individual connection (valve manifold assembly)



Connection is independent of the control technology and flexible using pre-assembled cables. This ensures that the connection is reverse polarity protected. The connector plug includes an LED for switching status indication and circuitry to protect against overvoltage. It also features a built-in current reduction circuit. 2 to 16 solenoid coils (divided between two to eight valve slices, including odd numbers) can be selected with individual connection.
An intrinsically safe version completes the range.

More information
→ Internet: cpv10-ex-vi

ET200X/ET200pro pneumatic interface for CPV10 and CPV14



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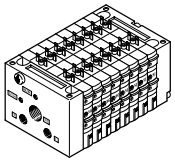
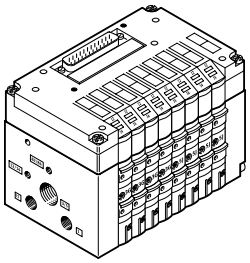


Adaptation of the valve manifold assembly CPV to the input/output module ET200X/ET200pro from Siemens: Combining the function modules of ET200X/ET200pro with the pneumatic functions of the valve manifold assembly CPV creates a highly integrative automation solution for systems for electric and pneumatic drives with:
- 8 valve slices for up to 16 CPV valves
- Fast and secure contacting to IP65

- Valve manifold assembly CPV10 and CPV14
- Not permitted for CPV10-EX-VI
- High IP65/IP67 degree of protection
- Modular design

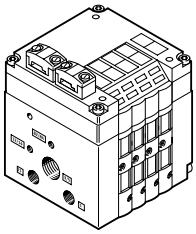
Multi-pin plug connection

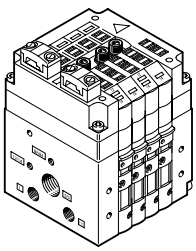


Control signals from the controller to the valve terminal are transmitted via a pre-assembled multi-wire cable, which substantially reduces installation time. The current reduction for the valves is also integrated in the multi-pin plug connection.

This valve terminal can be equipped with 4 to 16 solenoid coils (4, 6 or 8 valve slices).

AS-Interface connection





A special feature of the AS-Interface is the simultaneous transmission of data and supply power via a two-wire cable. The encoded cable profile prevents connection with reverse polarity. If the valves have to be disconnected from the mains supply in an emergency situation, these can also be supplied via a separate connection. There is a choice of two versions of valve terminals for A/B mode.

The valve terminal with AS-Interface is available in the following versions:
- Without inputs, with two or four valve slices (max. 4 solenoid coils) with additional power supply
- With four inputs and four valve slices (max. 8 solenoid coils)
- With four or eight inputs and four or eight valve slices (max. 8 solenoid coils) and additional power supply
- With four or eight inputs and four or eight valve slices incl. vacant position or vacant positions and additional power supply (max. 6 solenoid coils for A/B mode in accordance with SPEC.2.1, max. 8 solenoid coils for A/B mode in accordance with SPEC. 3.0 with Profile 7.A.7)

More information
→ Internet: as-interface

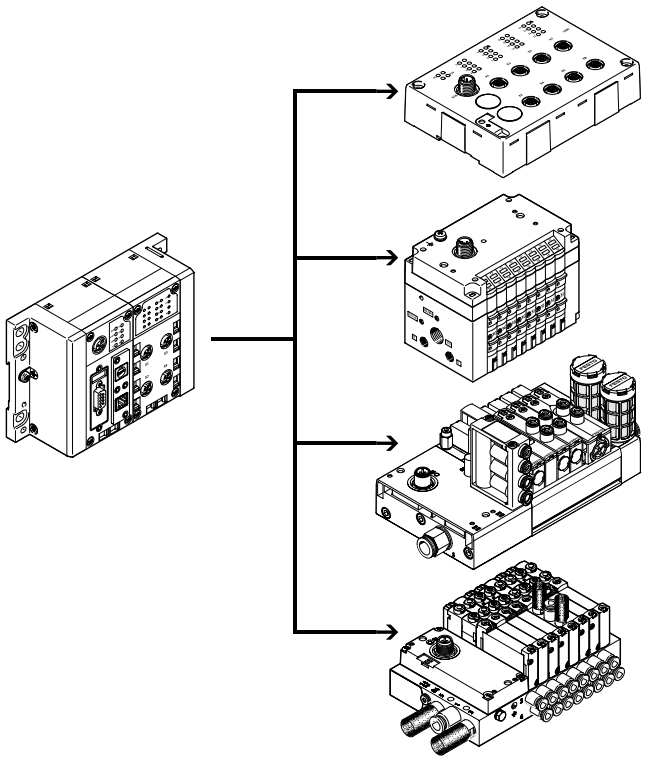
Note

Valve terminals to SPEC.2.1 can not be operated on a master to SPEC.3.0 with profile 7.A.7.

Selection and development

Electrical connections

I-Port interface/IO-Link, CTEL installation system



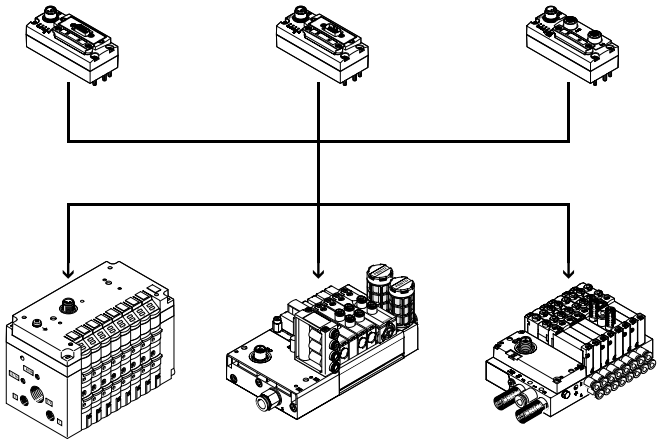
A CTEL system consists of the CTEL master and the devices with I-Port interface, which are connected using special connecting cables. This permits a decentralised layout of the devices. This means that the valve terminals and I/O modules with I-Port interface (devices) can be mounted very close to the cylinders to be controlled. This reduces the length of the air supply lines used, which minimises flow losses and pressurisation and exhaust times.
The I-Port interface from Festo is based on IO-Link and is compatible with IO-Link in certain areas.
The connection type corresponds to a star topology. In other words, only one module or valve terminal can be connected to each I-Port.

As well as communication, the I-Port interfaces also handle the power supply for the connected devices.
The maximum length of a string is 20 m.
The limitations with respect to IO-Link include:

- Permanently set baud rate of 230.4 kbps
- SIO mode is not supported
- Max. 32 bytes of input data and 32 bytes of output data
- Only one extract of the master commands is used
- Festo plug & work principle, configuration via IODD is not supported.

More information
→ Internet: cteu
→ Internet: cpx
→ Internet: cecc

I-Port interface/IO-Link, CTEU system



CTEU is a system for the compact connection of a valve terminal to different fieldbus standards such as PROFIBUS and DeviceNet®.
The bus node is mounted directly on the I-Port interface of the valve terminal.
This makes it easier to switch between the fieldbus protocols than with Fieldbus Direct, however there is no way of connecting I/O modules to the bus nodes (as with the CPI string extension).

The following fieldbus protocols are supported:

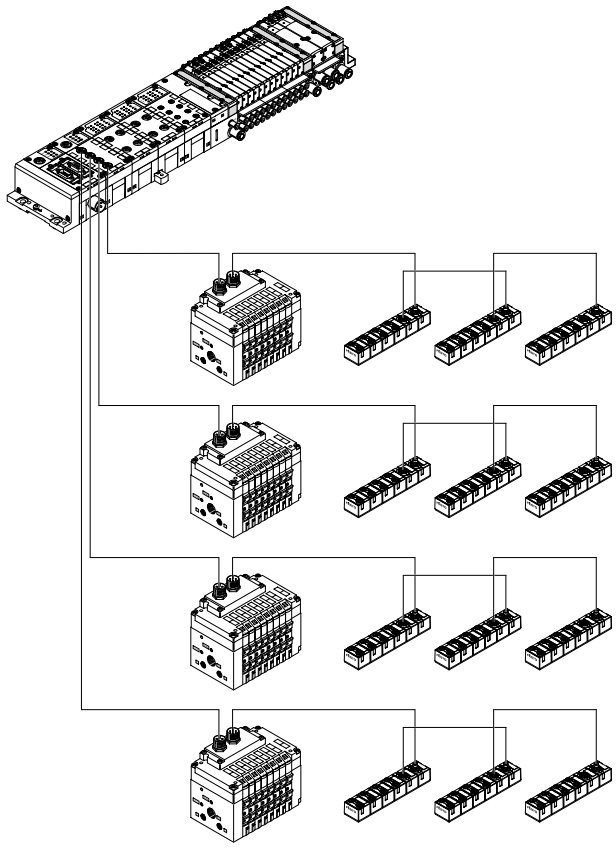
- CANopen
- DeviceNet
- CC-Link
- PROFIBUS
- EtherCAT
- AS-Interface
- PROFINET
- EtherNet/IP
- VARAN

More information
→ Internet: cteu

Key features

Electrical connections

Installation system CP/CPI



The valve terminal with CP connection is provided for connection to a higher-level bus node or to control blocks. A bus node or control block additionally enables connection of decentralised input/output units.
The following bus protocols are supported:

- PROFIBUS DP
- INTERBUS
- DeviceNet
- CANopen
- CC-Link
- EtherNet/IP
- PROFINET
- POWERLINK
- EtherCAT
- Sercos III

Four strings with up to 32 inputs and 32 outputs (depending on version) can be connected to a bus node or control block. In this case, the valve terminal CPV is treated as an output module having up to 8 outputs (4, 6 or 8 valve slices or 4 to 16 solenoid coils per terminal). The connecting cables transfer all the required electrical signals (control signals, operating voltage for the internal electronics of the modules, load voltage supply for connected valves).

More information
→ Internet: ctec

Fieldbus Direct

Fieldbus Direct is a system for the compact connection of a valve terminal CPV or CPV-SC to different fieldbus standards such as PROFIBUS and DeviceNet. The fieldbus node is directly integrated in the electrical interface of the valve terminal and therefore takes up only a minimal amount of space. The CPI string extension option enables the functions and components of the system CPI to be used.

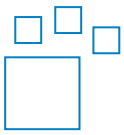
The new high-performance CPI string extension offers up to 4 supplementary CPI modules in a mix with CP- or CPI-compatible valve terminals for extension. It is possible to extend the Fieldbus Direct system from 8 ... 32 inputs and 8 ... 32 outputs without any problems.

Selection and development

Valve terminal configurator → Internet: www.festo.com

General	CPV10-VI	CPV14-VI	CPV18-VI
A valve terminal configurator is available to help you select a suitable valve terminal, making it much easier to order the right product. The valve terminals are fully assembled according to your order specification and are individually checked. This reduces assembly and installation time to a minimum.	Order a valve terminal CPV10-VI using the order code: Ordering system CPV10 → Internet: cpv10	Order a valve terminal CPV14-VI using the order code: Ordering system CPV14 → Internet: cpv14	Order a valve terminal CPV18-VI using the order code: Ordering system CPV18 → Internet: cpv18

Ordering data – Product options



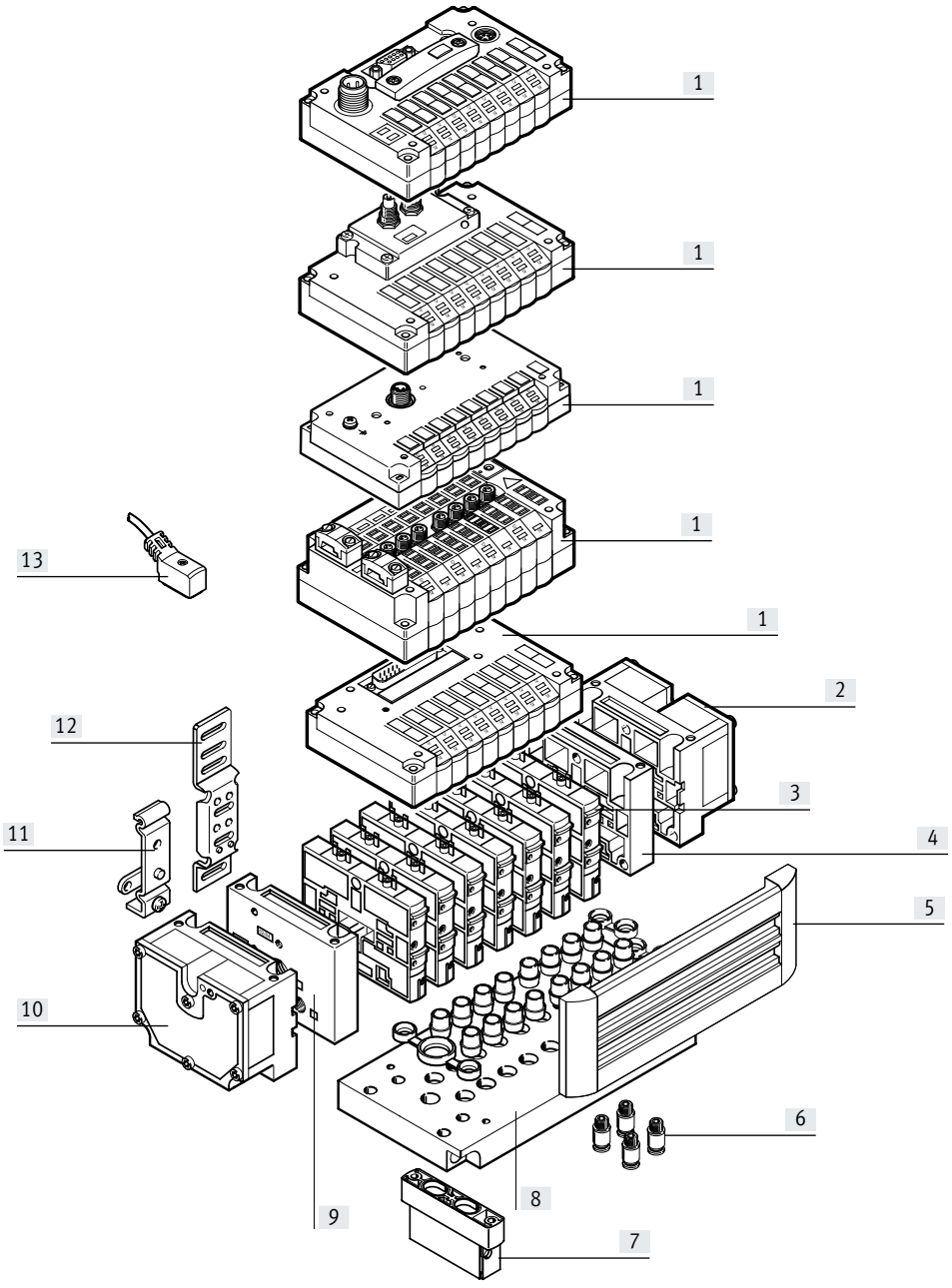
Configurable product
This product and all its product options can be ordered using the configurator.

The configurator can be found under Products on the DVD or at
→ **www.festo.com/catalogue/...**

Part no.	Type
18200	CPV10-VI
18210	CPV14-VI
18220	CPV18-VI

Peripherals overview

Overview – CPV valve terminal



[1] Basic electrical unit (Fieldbus Direct, installation system CP/CPI, I-Port interface/IO-Link, AS-Interface, multi-pin, individual connection)
[2] Right-hand end plate with flat plate silencer
[3] Comprehensive range of valve functions
[4] Right-hand end plate (threaded connections not in combination with pneumatic multiple connector plate)
[5] Inscription label holder
[6] QS push-in fittings
[7] Functional module (vertical stacking)
[8] Pneumatic multiple connector plate
[9] Left-hand end plate (threaded connections not in combination with pneumatic multiple connector plate)
[10] Left-hand end plate with flat plate silencer
[11] H-rail mounting
[12] Wall mounting
[13] Connecting cable for individual connection

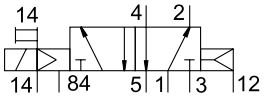
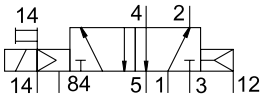
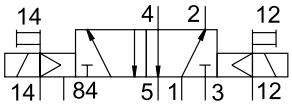
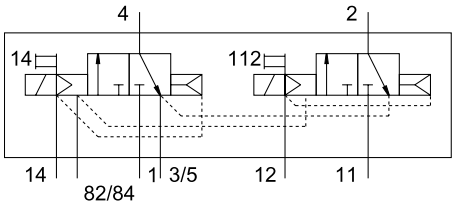
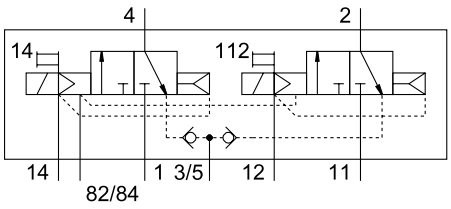
Key features – Pneumatic components

Valves

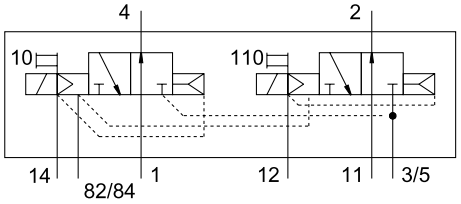
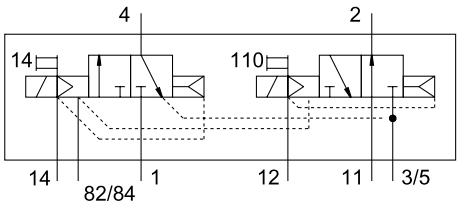
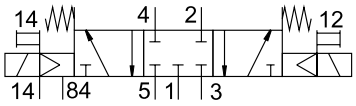
Valves CPV are implemented as valves with integrated sub-base, i.e. in addition to the valve function they also include all pneumatic ducts for supply, exhaust and for the working ports. The supply ducts are the central component of the valve slices and enable a direct flow through the valve slices slices.

This makes it possible to achieve maximum flow rates. All valves have a pneumatic pilot control for optimising performance. The valve function is based on a piston spool system with patented sealing principle, ensuring a broad range of applications and long service life.
The components for the pneumatics and the pneumatic functions are always the same for all types of control. Most functions are also available in the different valve sizes (grid dimension). Restrictions are noted where applicable.

Valve function

Code	Circuit symbol	Size			Description
		10	14	18	
M, MK		■	■	■	5/2-way valve, single solenoid • Pneumatic spring return • Piston spool valve • With duct separation 1, 11 for valve MK • Size 18 only available for valve M
F		■	–	–	5/2-way valve, single solenoid • Pneumatic spring return • Piston spool valve • Fast switching
J, JK		■	■	■	5/2-way valve, double solenoid • Piston spool valve • With duct separation 1, 11 for valve JK • Size 18 only available for valve J
C, CK		■	■	■	2x 3/2-way valve, single solenoid • Normally closed • Pneumatic spring return • Piston spool valve • With duct separation 1, 11 for valve CK • Size 18 only available for valve C
CY		■	–	–	2x 3/2-way valve, single solenoid • Normally closed • Pneumatic spring return • Integrated back pressure protection • Piston spool valve • Not suitable for vacuum **Note** If it is necessary to ensure that the back pressure flaps are securely closed in the event of a sudden loss or shutdown of the operating pressure, the valve terminal must be operated with external pilot air supply.

Key features – Pneumatic components

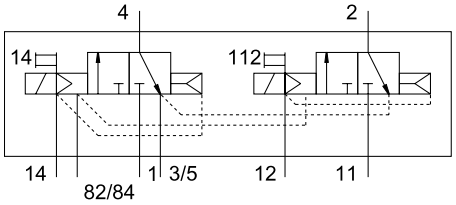
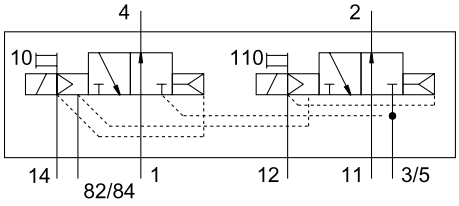
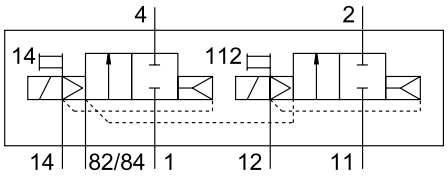
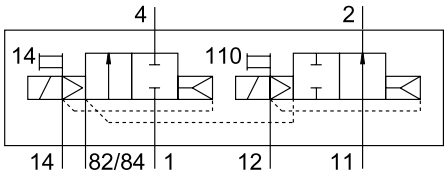
Valve function Code	Circuit symbol	Size 10	14	18	Description
N, NK		■	■	■	2x 3/2-way valve, single solenoid • Normally open • Pneumatic spring return • Piston spool valve • With duct separation 1, 11 for valve NK • Size 18 only available for valve N The function of a 5/3-way valve with mid-position pressurised can be achieved using these valves in the open initial position
H, HK		■	■	■	2x 3/2-way valve, single solenoid • Normal position – 1x open (pilot control 12) – 1x closed (pilot control 14) • Pneumatic spring return • Piston spool valve • With duct separation 1, 11 for valve HK • Size 18 only available for valve H For optimised cylinder movement. With simultaneous actuation of both solenoid coils, corresponds to valve function M (5/2-way, single solenoid). As each side of the piston surface can be pressurised or exhausted independently from each other, faster movement of the cylinder is achieved.
G		–	–	■	5/3-way valve, mid-position closed • Mechanical spring return • Piston spool valve
–	–	■	■	–	5/3G[1] function, mid-position closed for size 10 and 14. The valve function "mid-position closed" is created using a 2x 3/2-way valve, normally closed (code C). The valve kit CPV10-BS-5/3G-M7 or CPV14-BS-5/3G-1/8 (incorporating a double piloted check valve function) is used for this. The valve kit is intended for use with one working pressure for each valve slice, i.e. it must not be used in dual-pressure operation (different pressure at port 1 and 11). If other valve slices are used in dual-pressure operation, a separator plate must be used to separate the valve slice equipped with the 5/3G valve kit from the compressed air duct 1 and 11 (code T). With pneumatic multiple connector plate P and M, not in the first or last valve position. Cannot be used with pneumatic multiple connector plate GQC and GQD. • Piston spool valve

1) Cannot be installed in combination with the pneumatic multiple connector plate for control cabinets CPV10-VI-P...-C or CPV10-VI-P...-D

Note

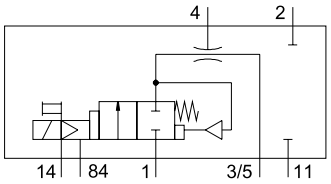
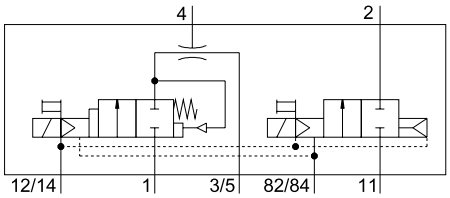
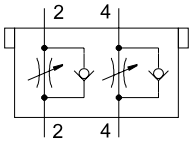
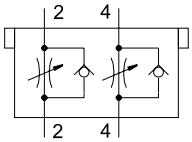
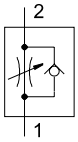
A filter must be installed upstream of valves operated in vacuum mode. This prevents any foreign matter in the intake air getting into the valve (e.g. when operating a suction cup with connector).

Key features – Pneumatic components

Valve function Code	Circuit symbol	Size 10	14	18	Description
–		■	■	■	5/3E function, mid-position exhausted The valve function "mid-position exhausted" is created using a 2x 3/2-way valve, normally closed (code C, CK). • Pneumatic spring return • Piston spool valve
–		■	■	■	5/3B function, mid-position pressurised The valve function "mid-position pressurised" is created using a 2x 3/2-way valve, normally open (code N, NK). • Pneumatic spring return • Piston spool valve
D, DK		■	■	■	2x 2/2-way valve, single solenoid • Normally closed • Pneumatic spring return • Piston spool valve • With duct separation 1, 11 for valve DK • Size 18 only available for valve D
I, IK		■	■	■	2x 2/2-way valve, single solenoid • Normal position – 1x open (control side 12) – 1x closed (control side 14) • Pneumatic spring return • Piston spool valve • With duct separation 1, 11 for valve IK • Size 18 only available for valve I
R	–	■	■	–	A relay plate (code R) with (N/O contact) can also be used in place of a valve slice. Each relay plate has two relays for controlling two electrically isolated outputs. Load capacity: 24 V DC, 1 A. • Connecting cable KRP-1-24-... • An inscription label holder cannot be used

Key features – Pneumatic components

Additional pneumatic functions

Code	Circuit symbol	Size			Description
		10	14	18	
A	Vacuum generator 	■	■	■	Vacuum generation according to the ejector principle. Vacuum discs of different width for different suction capacities. Combinations with a number of vacuum and/or directional control discs are possible on the same valve terminal. The principle consists of an open connection between the exhaust duct 3/5 and the working port 4. If a nozzle is not connected, any back pressure that occurs in the exhaust duct flows back into the working port. With a nozzle connected, the vacuum can be reduced by the back pressure that occurs. This effect is improved by optimising the exhaust. With just one vacuum generator per valve terminal and separation using the separator plate (code S), the effect does not arise.
E	Vacuum generator with ejector pulse 	■	■	■	Vacuum generator on pilot side 14 • Reset via mechanical spring and pneumatic spring • Ejector pulse on pilot side 12 (code E) • With more than two vacuum generators, pay attention to the air supply and exhaust
P	Input (valve side)  Output (cylinder side)	■	■	–	2x one-way flow control valve, supply air flow control Module (attachment) for direct flange connection to the valves CPV. Also suitable for pneumatic multiple connector plate. It is not possible to combine different valve attachments. Not with valve function G • Not in the first or last valve position with accessories M, P, V (pneumatic multiple connector plate) • Cannot be used with accessories GQC or GQD (pneumatic multiple connector plate)
Q	Input (valve side)  Output (cylinder side)	■	■	–	2x one-way flow control valve, exhaust air flow control Module (attachment) for direct flange connection to the valves CPV. Also suitable for pneumatic multiple connector plate. It is not possible to combine different valve attachments. • Not with valve function G • Not in the first or last valve position with accessories M, P, V (pneumatic multiple connector plate) • Cannot be used with accessories GQC or GQD (pneumatic multiple connector plate)
V	Input (valve side)  Output (cylinder side)	■	■	–	One-way flow control valve for vacuum The module CPV-...-BS-GRZ-V-... has a built-in check valve as well as a throttle function for adjusting the ejector pulse. The check valve temporarily maintains the vacuum, even if the vacuum generator is switched off. The module is suitable for vacuum generators (code A, E). • Not in the first or last valve position with accessories M, P, V (pneumatic multiple connector plate) • Cannot be used with accessories GQC or GQD (pneumatic multiple connector plate)

Key features – Pneumatic components

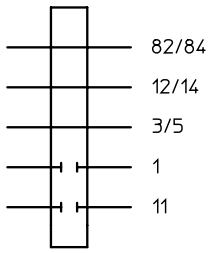
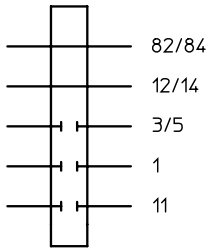
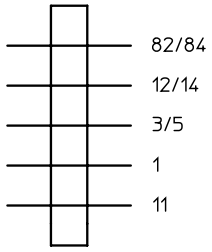
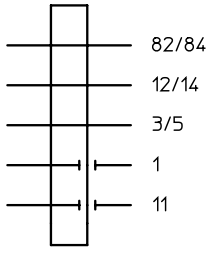
Creating pressure zones

Two pressure levels per valve are created using different pressure at port 1 and 11. Thus, for example, a cylinder drive can be advanced with high pressure and retracted with low pressure to save energy.

The maximum possible number of pressure zones is determined by the combination of the following components:
- Use of a separator plate
- Type of end plate pair
- Valve slice type
- Number of valve slices

The valve terminal CPV can be divided into 2 to 4 pressure zones using separator plates or valves with integrated duct separation.

Separator plates/valves with integrated duct separation

Code	Graphical illustration	Size			Note
		10	14	18	
T	Separator plate for creating pressure zones, supply duct 1 and 11 are separate 	■	■	■	Using one separator plate (code T), only the air supply duct (port 1 and 11) is interrupted to allow two pressure levels. • Not in the first or last valve position • Not with compressed air supply A, B, C, D, U, V, W, X
S	Separator plate for creating pressure zones, supply duct 1, 11 and exhaust 3, 5 are separate 	■	■	■	The separator plate (code S) divides the exhaust duct 3/5 as well as the supply duct 1 and 11. This plate should be used if one of the pressure zones is a vacuum, to prevent any effect on the vacuum or to prevent back pressures on adjacent valve functions. • Not in the first or last valve position • Not with compressed air supply A, B, C, D, U, V, W, X • (single-side compressed air supply)
L	Blanking plate (vacant position) 	■	■	■	A blanking plate (code L) is used to provide a vacant position at which a valve can be inserted later.
MK, JK, CK, NK, DK, IK	Valve with integrated separation of ducts 1 and 11 	■	■	–	With these valves, the air supply ducts (port 1 and 11) are sealed by a casting skin to the right of the valve. Compared with using a separator plate, this has the advantage that none of the valve positions is occupied by a separator plate. **Note** Where internal pilot air via the right-hand end plate is used as the compressed air supply, at least one further valve with the code M, F, J, C, CY, N, H, G, D, I, A or E must be used directly to the right of this valve.

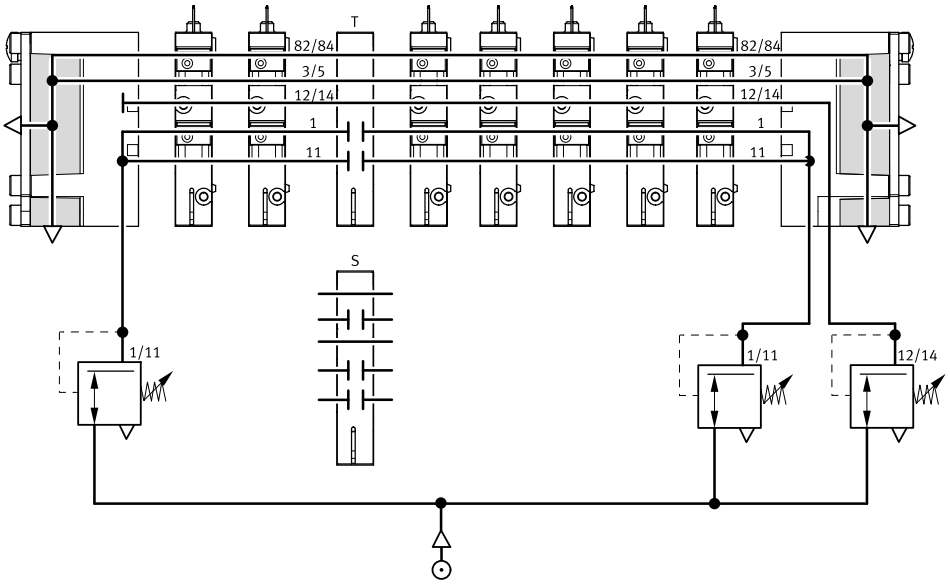
Key features – Pneumatic components

Examples: Pneumatic supply

External pilot air supply, flat plate silencer at both ends

Compressed air supply via pneumatic multiple connector plate:
Code H
The diagram on the right shows an example of the configuration and connection of the compressed air supply with external pilot air supply. Port 12/14 on the pneumatic multiple connector plate is equipped with a fitting for this purpose. Exhaust ports 3/5 and 82/84 are exhausted via the flat plate silencers.
A separating seal each can be optionally used to create pressure zones.

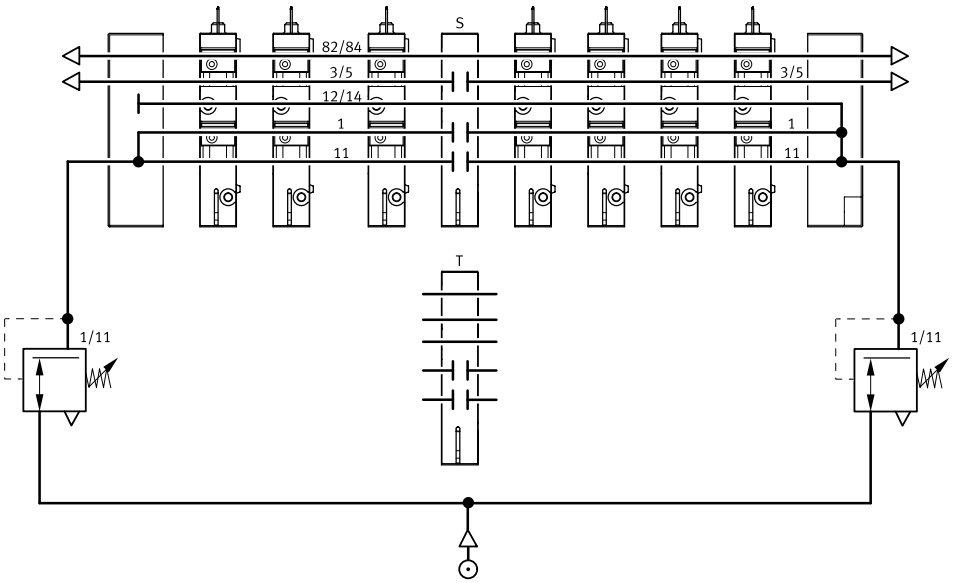
Optional separating seal



Internal pilot air supply, ducted exhaust air or threaded silencer

Compressed air supply via end plates:
Code Z
The diagram on the right shows an example of the configuration and connection of the compressed air supply with internal pilot air supply.
The pilot air is branched at the right-hand end plate of port 1 or 11. The exhaust 3/5 and 82/84 is expelled via the threaded silencer.
A separating seal each can be optionally used to create pressure zones.

Optional separating seal

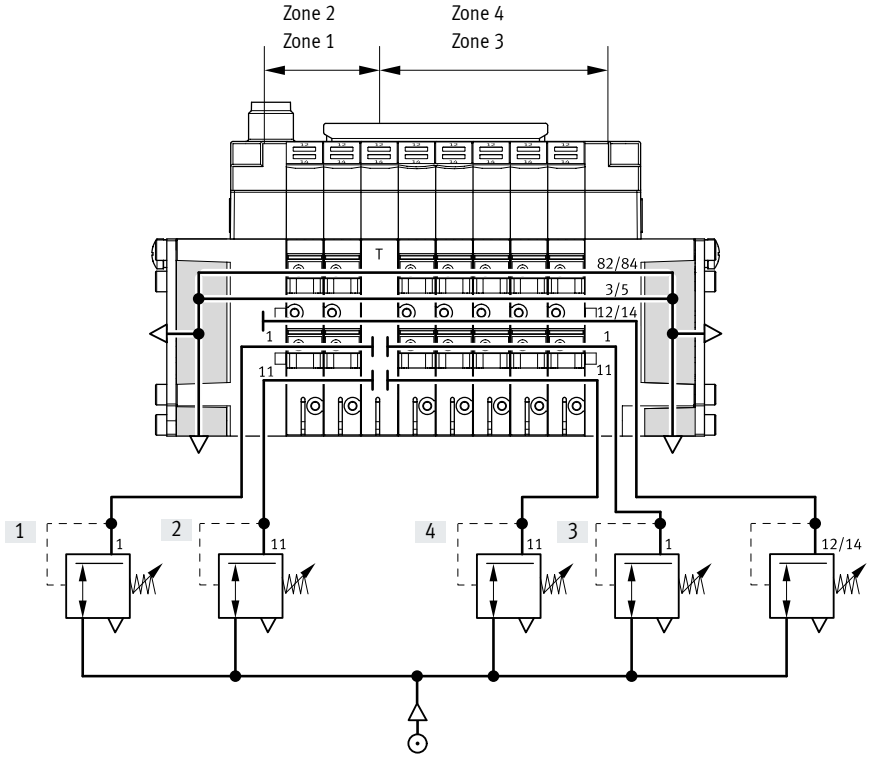


Key features – Pneumatic components

Examples: Creating pressure zones

CPV with separator plate T

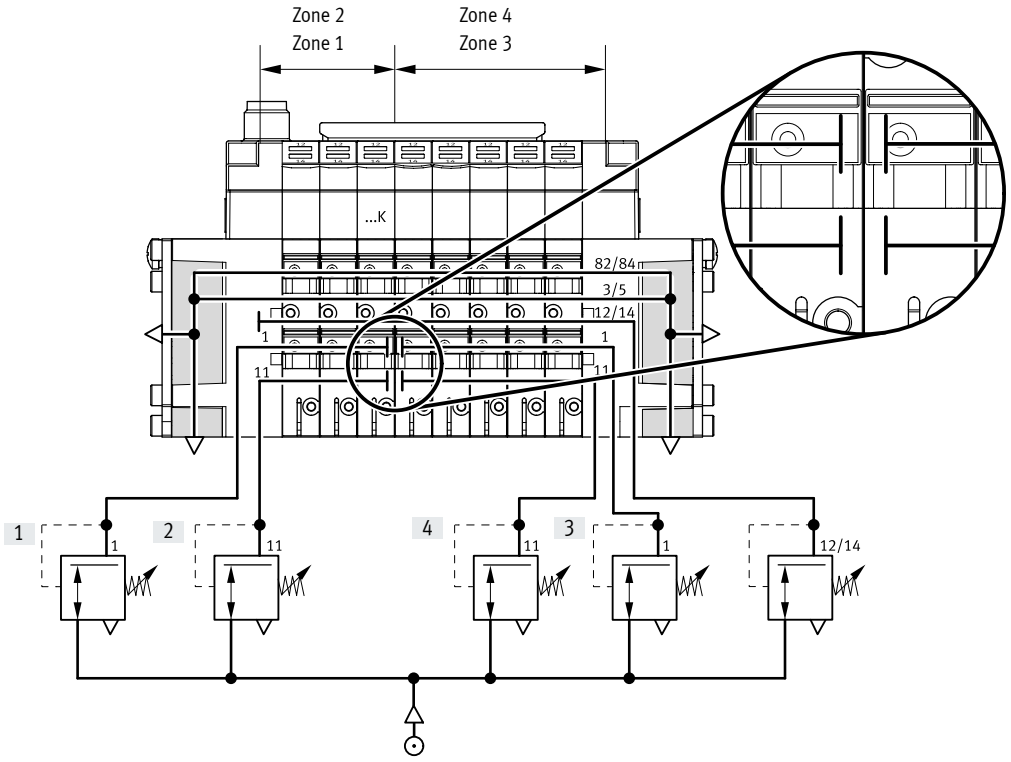
With valve terminals CPV, up to 4 pressure zones can be created. The diagram shows an example of the configuration and connection of four pressure zones using separator plate code T – with external pilot air supply.



[1] Vacuum –0.9 bar
[2] Air pulse 2 bar
[3] Forward stroke 6 bar
[4] Return stroke 4 bar

CPV with integrated separation of duct 1 and 11 in valves ...K

With valve terminals CPV, up to 4 pressure zones can be created. The diagram shows an example of the configuration and connection of four pressure zones with external pilot air supply and the use of a valve ...K with integrated separation of ducts 1 and 11.



[1] Vacuum –0.9 bar
[2] Air pulse 2 bar
[3] Forward stroke 6 bar
[4] Return stroke 4 bar

Key features – Pneumatic components

Compressed air supply and exhaust

A characteristic feature of a valve terminal CPV is the two end plates which supply the valve slices with pressure and exhaust them.

- Large duct cross sections enable very high flow rate performance, even with several valves switching simultaneously
- Large flat plate silencers in the end plates
- Internal/external pilot air supply

Each individual valve is supplied with compressed air from two individual ducts (supply ports 1/11) and exhausted via a large integrated exhaust duct (exhaust 3/5). This design allows unique functionality and flexibility, making it very easy to have multiple pressure zones per terminal or combinations of vacuum applications.
The valve terminal is supplied via end plates, either on the left, on the right or on both sides. End plate combinations other than those listed are possible (on request).

Pilot air supply

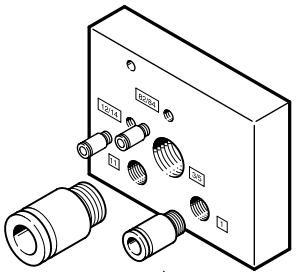
Internal pilot air supply

This can be selected if the supply pressure at pneumatic port 1 is 0.3 ... 0.8 MPa. With internal pilot air supply the branch is located in the left or right-hand end plate. There is no port 12/14.

External pilot air supply

External pilot air supply is required if the supply pressure at pneumatic port 1 is lower than 0.3 MPa or higher than 0.8 MPa. In this case, a pressure of 0.3 ... 0.8 MPa is applied at port 12/14.
If a gradual pressure build-up in the system using a soft-start valve is required, an external pilot air supply should be selected. In this case, the control pressure applied during switch-on is already very high.
External pilot air supply is also required if need to be the back pressure valves (valve order code CY) are securely closed in the event of a sudden loss or shutdown of the operating pressure.

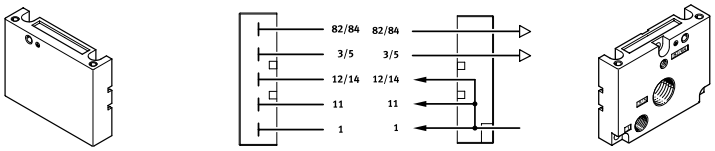
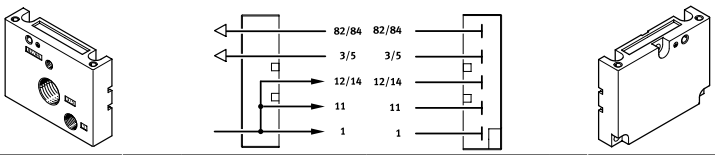
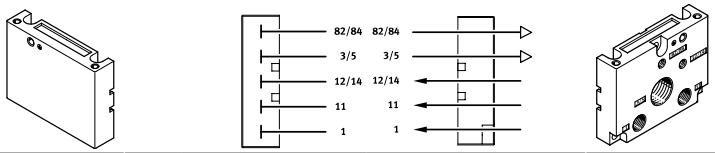
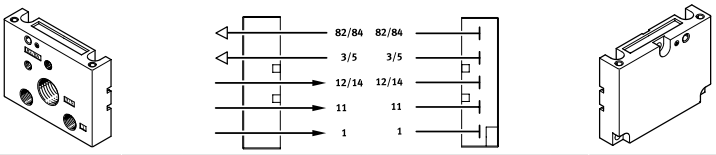
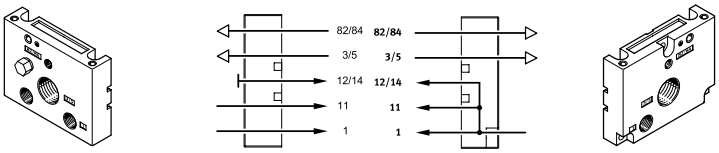
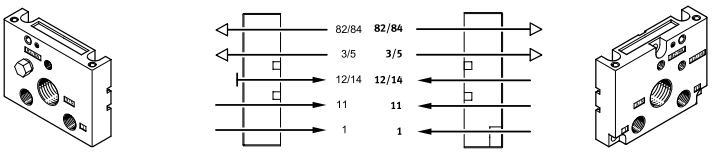
End plates



Example of an end plate:
The diagram shows a left-hand end plate with external pilot air supply. The exhaust ports 3/5 and 82/84 can be equipped with fittings or silencers. An end plate for internal pilot air supply does not have ports 12/14 and 11. Port 82/84 is always present and should be fitted with a silencer. With an end plate for internal pilot air supply, port 12/14 is connected internally to port 1.

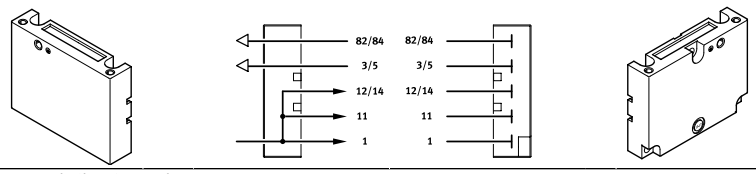
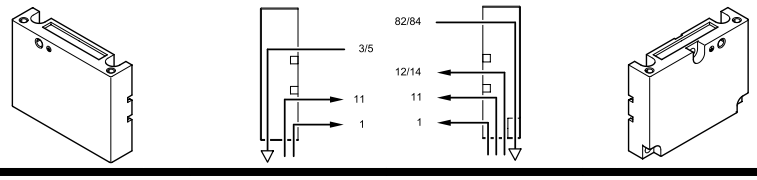
Key features – Pneumatic components

End plate combination for compressed air supply via end plate

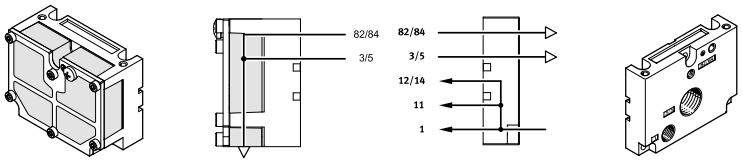
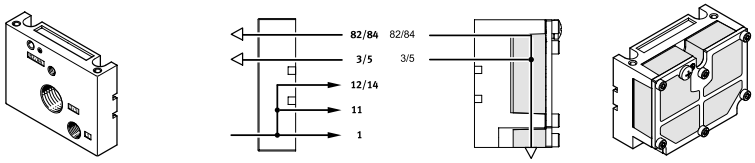
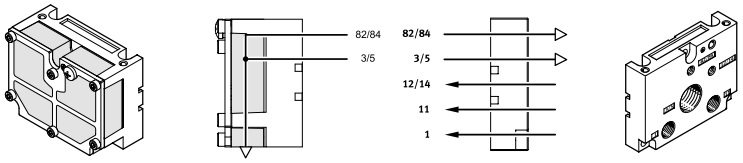
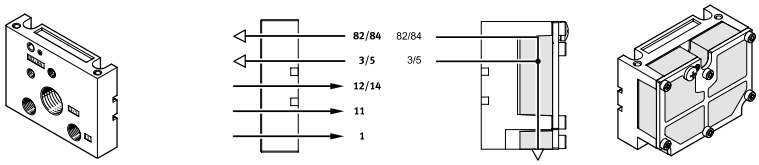
Code	Graphical illustration Type of pilot air supply (internal/external)	Size			Note
		10	14	18	
U	Internal pilot air supply 	■	■	■	• Ports in right-hand end plate only • No pressure zone separation permissible • Not suitable for vacuum
V	Internal pilot air supply 	■	■	■	• Ports in left-hand end plate only • No pressure zone separation permissible • Not suitable for vacuum
W	External pilot air supply 	■	■	■	• Ports in right-hand end plate only • No pressure zone separation permissible • Suitable for vacuum
X	External pilot air supply 	■	■	■	• Ports in left-hand end plate only • No pressure zone separation permissible • Suitable for vacuum
Y	Internal pilot air supply 	■	■	■	• Ports in left- and right-hand end plate • Maximum three pressure zones • Valves on the left of the separator plate suitable for vacuum
Z	External pilot air supply 	■	■	■	• Ports in left- and right-hand end plate • Maximum four pressure zones • Suitable for vacuum

Key features – Pneumatic components

End plate combination for compressed air supply via pneumatic multiple connector plate

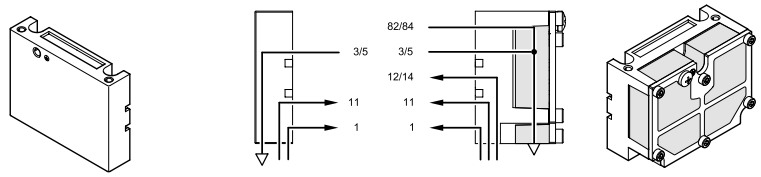
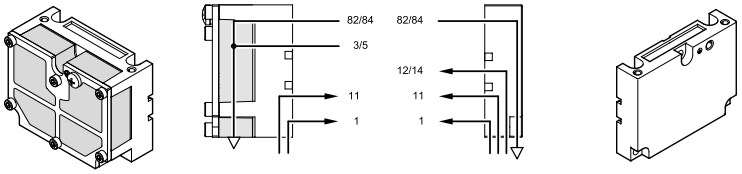
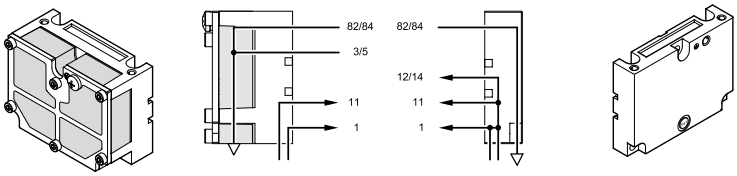
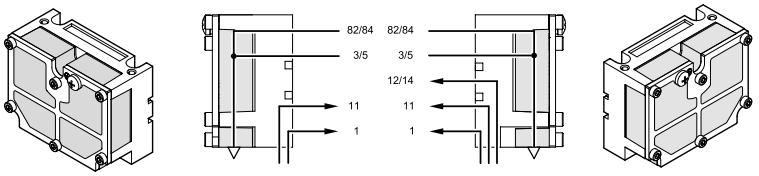
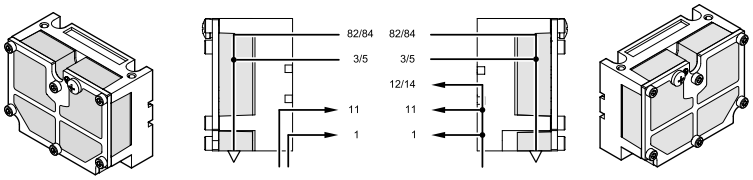
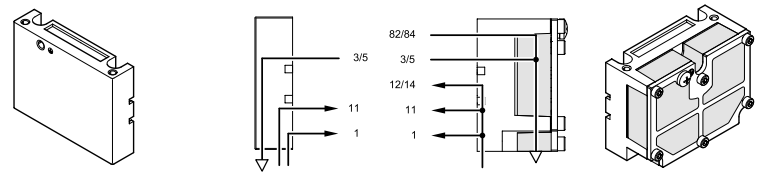
Code	Graphical illustration Type of pilot air supply (internal/external)	Size 10	14	18	Note
Y	Internal pilot air supply 	■	■	■	• Ports on pneumatic multiple connector plate • Pressure zone separation only permissible with separator plate (code T) • Maximum two pressure zones • Valves on the left of the separator plate suitable for vacuum • Only for accessories M, P, V, GQC, GQD (pneumatic multiple connector plate)
Z	External pilot air supply 	■	■	■	• Ports on pneumatic multiple connector plate • Pressure zone separation only permissible with separator plate (code T) • Maximum three pressure zones • Suitable for vacuum • Only for accessories M, P, V, GQC, GQD (pneumatic multiple connector plate)

End plate combination for compressed air supply via end plate with flat plate silencer

Code	Graphical illustration Type of pilot air supply (internal/external)	Size 10	14	18	Note
A	Internal pilot air supply 	■	■	■	• Ports in right-hand end plate • No pressure zone separation permissible • Not suitable for vacuum
B	Internal pilot air supply 	■	■	■	• Ports in left-hand end plate • No pressure zone separation permissible • Not suitable for vacuum
C	External pilot air supply 	■	■	■	• Ports in right-hand end plate • No pressure zone separation permissible • Suitable for vacuum
D	External pilot air supply 	■	■	■	• Ports in left-hand end plate • No pressure zone separation permissible • Suitable for vacuum

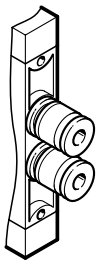
Key features – Pneumatic components

End plate combination for compressed air supply via pneumatic multiple connector plate with flat plate silencer

Code	Graphical illustration Type of pilot air supply (internal/external)	Size 10	14	18	Note
E	External pilot air supply 	■	■	■	• Ports on pneumatic multiple connector plate • Exhaust air vented via flat plate silencer on the right • Pressure zone separation only permissible with separator plate (code T) • Maximum four pressure zones • Suitable for vacuum • Only for accessories M, P, V, GQC, GQD (pneumatic multiple connector plate)
F	External pilot air supply 	■	■	■	• Ports on pneumatic multiple connector plate • Exhaust air vented via flat plate silencer on the left • Pressure zone separation only permissible with separator plate (code T) • Maximum four pressure zones • Suitable for vacuum • Only for accessories M, P, V, GQC, GQD (pneumatic multiple connector plate)
G	Internal pilot air supply 	■	■	■	• Ports on pneumatic multiple connector plate • Exhaust air vented via flat plate silencer on the left • Pressure zone separation only permissible with separator plate (code T) • Maximum three pressure zones • Not suitable for vacuum • Only for accessories M, P, V, GQC, GQD (pneumatic multiple connector plate)
H	External pilot air supply 	■	■	■	• Ports on pneumatic multiple connector plate • Exhaust air vented via flat plate silencers at both ends • Pressure zone separation permissible • Suitable for vacuum • Only for accessories M, P, V, GQC, GQD (pneumatic multiple connector plate)
J	Internal pilot air supply 	■	■	■	• Ports on pneumatic multiple connector plate • Exhaust air vented via flat plate silencers at both ends • Pressure zone separation permissible • Maximum three pressure zones • Valves on the left of the separator plate suitable for vacuum • Only for accessories M, P, V, GQC, GQD (pneumatic multiple connector plate)
K	Internal pilot air supply 	■	■	■	• Ports on pneumatic multiple connector plate • Exhaust air vented via flat plate silencer on the right • Pressure zone separation permissible • Maximum three pressure zones • Suitable for vacuum in combination with separator plate • Only for accessories M, P, V, GQC, GQD (pneumatic multiple connector plate)

Key features – Pneumatic components

Pneumatic connection



The working lines are located directly in the valve slices.
Threaded connections and Quick Star push-in fittings (QS) are available for different tubing sizes.
The supply ports are located in the end plates or in the pneumatic multiple connector plate.

Push-in fittings are available fully assembled.
The following working lines can be selected:
- Push-in fittings, large: code A
- Push-in fittings, small: code B
- Threaded connections: code C

Connection sizes for threads and QS push-in fittings can be found in the table below.

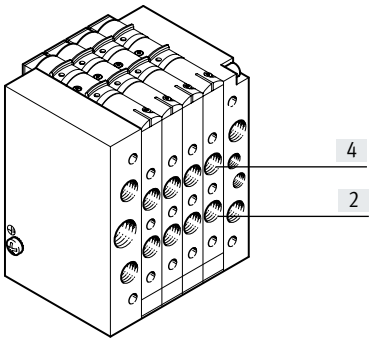
Pneumatic multiple connector plate

One-piece sub-bases are available for use with a pneumatic multiple connector plate; these contain both the working ports and also the supply ports. This allows the valve terminal as a pneumatic "function" to be separated from the ports.

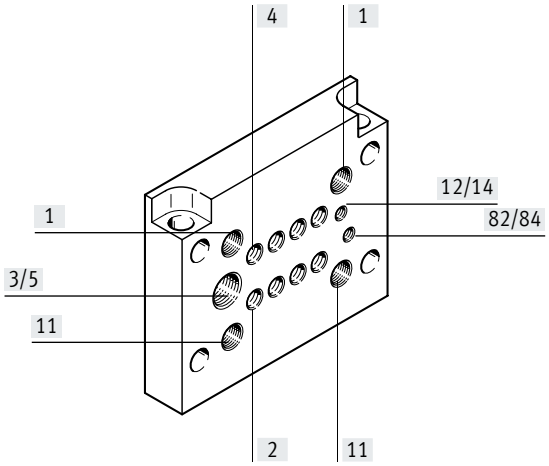
The pneumatic multiple connector plate enables different types of mounting, from wall mounting to direct passage through a housing wall.

Easy-to-service and flexible connection technology thanks to:
- Common connection via the pneumatic multiple connector plate with all connections on one side
- For mounting/dismounting, the valve terminal is secured/released using just four screws while the pneumatic tubing remains connected
- Minimal time required for mounting/dismounting
- No faults during recommissioning caused by incorrectly connected tubing

CPV valve terminal



Pneumatic multiple connector plate



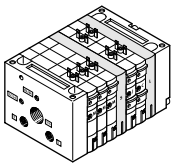
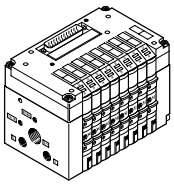
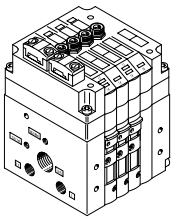
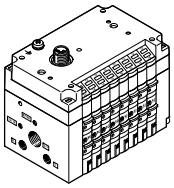
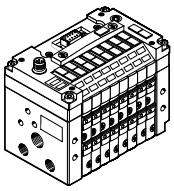
Connection sizes

Connection to ISO 5599		CPV10	CPV14	CPV18	Comment
1/11	Working air	G1/8	G1/4	G3/8	Fitting in end plate or pneumatic multiple connector plate
2/4	Working port	M7 (QS6/QS4)	G1/8 (QS8/QS6)	G1/4 (QS10/QS8)	Port in valve slice, push-in fitting via clips
3/5	Exhaust air port	G3/8	G1/2	G1/2	Via right-hand/left-hand end plate
		G1/4	G3/8	G1/2	Pneumatic multiple connector plate
12/14	Pilot air supply port	M5	G1/8	G1/4	Fitting in end plate or pneumatic multiple connector plate
82/84	Pilot exhaust air port	M5	G1/8	G1/4	Via right-hand/left-hand end plate
		M7 (M5)[1)]	G1/8	G1/4	Pneumatic multiple connector plate

1) With pneumatic multiple connector plate with flange

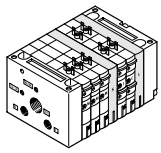
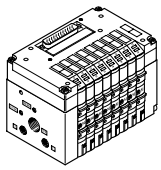
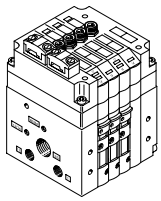
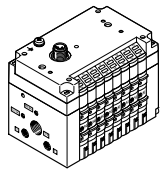
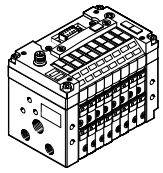
Key features – Pneumatic components

Pneumatic connection: fitting set for compressed air supply

	Code Compressed air supply	Connection	Designation	Size 10 QS6 Type	Size 14 QS8 Type	Size 18 QS10 Type
	**Without pneumatic multiple connector plate**					
	U, V	82/84	Silencer	AMTE-M-LH-M5	U-1/8-B	U-1/4-B
		3/5	Silencer	U-3/8-B	U-1/2-B	U-1/2-B
		1	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
	W, X	82/84	Silencer	AMTE-M-LH-M5	U-1/8-B	U-1/4-B
		3/5	Silencer	U-3/8-B	U-1/2-B	U-1/2-B
		1	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
		12/14	Push-in fitting	QSM-M5-6-I	QS-1/8-8-I	QS-1/4-10-I
	Y	82/84 on right	Silencer	AMTE-M-LH-M5	U-1/8-B	U-1/4-B
		82/84 on left	Blanking plug	B-M5	B-1/8	B-1/4
		3/5 on right	Silencer	U-3/8-B	U-1/2-B	U-1/2-B
		3/5 on left	Blanking plug	B-3/8	B-1/2	B-1/2
		1/11 on left	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
	Z	82/84 on right	Silencer	AMTE-M-LH-M5	U-1/8-B	U-1/4-B
		82/84 on left	Blanking plug	B-M5	B-1/8	B-1/4
		3/5 on right	Silencer	U-3/8-B	U-1/2-B	U-1/2-B
		3/5 on left	Blanking plug	B-3/8	B-1/2	B-1/2
		12/14 on right	Push-in fitting	QSM-M5-6-I	QS-1/8-8-I	QS-1/4-10-I
		12/14 on left	Blanking plug	B-M5	B-1/8	B-1/4
		1/11	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
	With pneumatic multiple connector plate; code M					
	Y	82/84	Silencer	UC-M7	U-1/8-B	U-1/4-B
		12/14	Blanking plug	B-M7	B-1/8	B-1/4
		3/5	Silencer	U-1/4-B	U-3/8-B	U-1/2-B
		1/11 on left	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
		11 on right	Blanking plug	B-1/8	B-1/4	B-3/8
	Z	82/84	Silencer	UC-M7	U-1/8-B	U-1/4-B
		3/5	Silencer	U-1/4-B	U-3/8-B	U-1/2-B
		12/14	Push-in fitting	QSM-M7-6-I	QS-1/8-8-I	QS-1/4-10-I
		1/11 on left	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
	**With pneumatic multiple connector plate; code P, GQC**					
	Y	82/84	Silencer	AMTE-M-LH-M5	U-1/8-B	U-1/4-B
		12/14	Blanking plug	B-M5	B-1/8	B-1/4
		3/5	Silencer	U-1/4-B	U-3/8-B	U-1/2-B
		1/11 on left	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
		11 on right	Blanking plug	B-1/8	B-1/4	B-3/8
	Z	82/84	Silencer	AMTE-M-LH-M5	U-1/8-B	U-1/4-B
		3/5	Silencer	U-1/4-B	U-3/8-B	U-1/2-B
		12/14	Push-in fitting	QSM-M5-6-I	QS-1/8-8-I	QS-1/4-10-I
		1/11 on left	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I

Key features – Pneumatic components

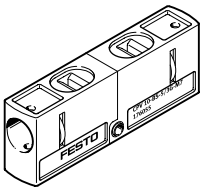
Pneumatic connection: fitting set for compressed air supply

	Code Compressed air supply	Connection	Designation	Size 10 QS6 Type	Size 14 QS8 Type	Size 18 QS10 Type
	**Without pneumatic multiple connector plate**					
	A, B	82/84	Blanking plug	B-M5	B-1/8	B-1/4
		3/5	Blanking plug	B-3/8	B-1/2	B-1/2
		1	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
	C, D	82/84	Blanking plug	B-M5	B-1/8	B-1/4
		3/5	Blanking plug	B-3/8	B-1/2	B-1/2
		1	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
		12/14	Push-in fitting	QSM-M5-6-I	QS-1/8-8-I	QS-1/4-10-I
	**With pneumatic multiple connector plate; code M**					
	E, F, H	82/84	Blanking plug	B-M7	B-1/8	B-1/4
		3/5	Blanking plug	B-1/4	B-3/8	B-1/2
		1/11	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
		12/14	Push-in fitting	QSM-M7-6-I	QS-1/8-8-I	QS-1/4-10-I
	G, J, K	82/84	Blanking plug	B-M7	B-1/8	B-1/4
		3/5	Blanking plug	B-1/4	B-3/8	B-1/2
		On right in 1, left	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
		On right in 11	Blanking plug	B-1/8	B-1/4	B-3/8
		12/14	Blanking plug	B-M7	B-1/8	B-1/4
	**With pneumatic multiple connector plate; code P, GQC**					
	E, F, H	82/84	Blanking plug	B-M5	B-1/8	B-1/4
		3/5	Blanking plug	B-1/4	B-3/8	B-1/2
		1/11	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
		12/14	Push-in fitting	QSM-M5-6-I	QS-1/8-8-I	QS-1/4-10-I
	G, J, K	82/84	Blanking plug	B-M5	B-1/8	B-1/4
		3/5	Blanking plug	B-1/4	B-3/8	B-1/2
		On right in 1, left	Push-in fitting	QS-1/8-8-I	QS-1/4-10-I	QS-3/8-12-I
		On right in 11	Blanking plug	B-1/8	B-1/4	B-3/8
		12/14	Blanking plug	B-M5	B-1/8	B-1/4

Key features – Pneumatic components

CPV valve terminal size 10 and 14 with valve extensions

Function blocks

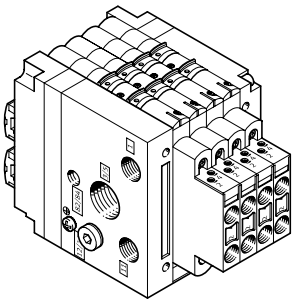


CPV10-BS-5/3G-M7
CPV14-BS-5/3G-1/8

Valve kit 5/3G for creating a 5/3-way function, mid-position closed, for size 10 and 14:
The valve function "mid-position closed" is created using a valve slice with 2x 3/2-way valve, normally closed (code C).
The valve kit CPV10-BS-5/3G-M7 or CPV14-BS-5/3G-1/8 (incorporating a double piloted check valve function) is used for this.

The valve kit is intended for use with one working pressure for each valve slice, i.e. it must not be used in dual-pressure operation (different pressure at port 1 and 11).

Additional functions for valve positions

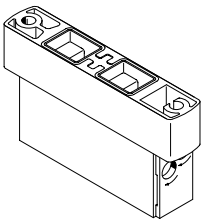


The valve terminal CPV in size 10 and 14 can be enhanced with further pneumatic functions with the aid of these valve extensions (vertical stacking):

- One-way flow control valves x2 for flow control directly at the valve terminal for
  – Supply air flow control
  – Exhaust air flow control
- The vacuum flow control module must be used with the vacuum generator with or without ejector pulse and offers a one-way function and an adjustable ejector pulse.

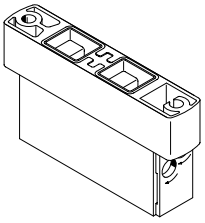
Note

The additional functions cannot be used on the first or last valve position in combination with a pneumatic multiple connector plate M, P, and cannot be used at all in combination with a pneumatic multiple connector plate GQC, GQD.



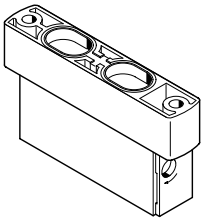
CPV10-BS-2xGRZZ-M7
CPV14-BS-2xGRZZ-1/8

- 2x one-way flow control valve for supply air flow control
- Additional function code P



CPV10-BS-2xGRAZ-M7
CPV14-BS-2xGRAZ-1/8

- 2x one-way flow control valve for exhaust air flow control
- Additional function code Q



CPV10-BS-GRZ-V-M7
CPV14-BS-GRZ-V-1/8

- Vacuum flow control module
- Additional function code V

Key features – Mounting

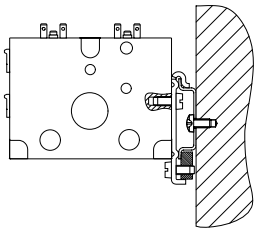
Mounting options

The valve terminals have drilled holes for four retaining screws, with the side for the pneumatic fittings being the screw-on surface. These drilled holes are also used to mount the valve terminal on the pneumatic multiple connector plate.

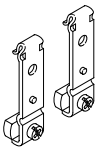
As well as this type of mounting, there are other mounting options:
- H-rail mounting
- Wall mounting
- Wall mounting via pneumatic multiple connector plate with flange
- On rear side via wall mounting
- On the front (CPV10/14 with IC connection only)
- Mounting via through-hole in wall

The mountings are attached to the left- and right-hand end plates using a screw and a fixing bolt.

Mounting for H-rail

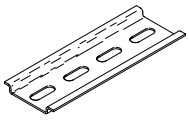


For valve terminal CPV10/14:
CPV10/14-VI-BG-NRH-35
(Mounting code H)

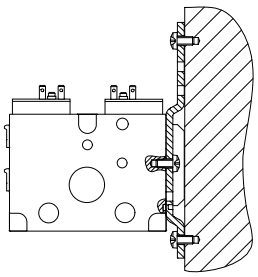


For valve terminal CPV18:
CPV18-VI-BG-NRH-35
(Mounting code H)

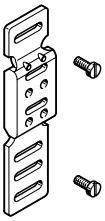
H-rail to EN 60715 not for accessories M, P, V (pneumatic multiple connector plate)



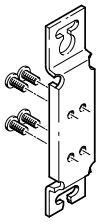
Attachment for wall mounting



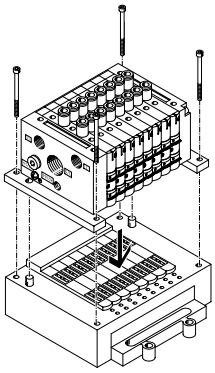
For valve terminal CPV10/14:
CPV10/14-VI-BG-RWL-B
(Mounting code U)



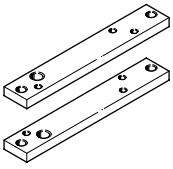
For valve terminal CPV18:
CPV18-VI-BG-RW
(mounting code W)



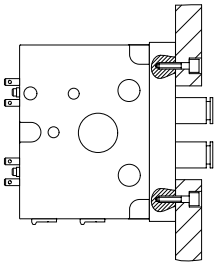
Attachment for individual connection and ET200X/ET200pro (included in the scope of delivery)



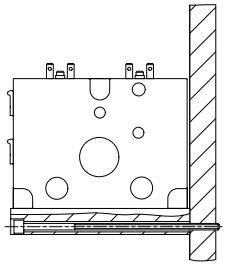
For valve terminal CPV10/14:
CPV...-VI-BG-ET200X
(mounting code X)



Through-hole in wall, e.g. on the machine



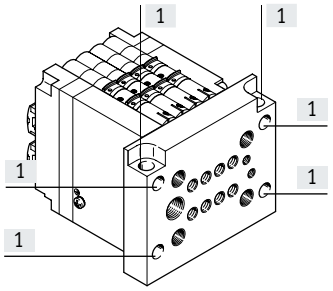
Wall mounting via pneumatic multiple connector plate



Key features – Mounting

Pneumatic multiple connector plate for wall/machine mounting

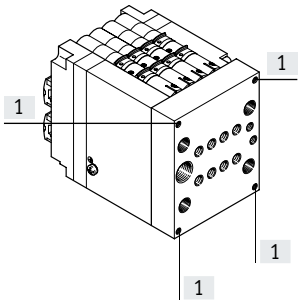
With flange, with all pneumatic connections, code P



- For 10 mm, 14 mm and 18 mm
- Multiple connector plate protrudes at the end plates
- Through-holes for mounting (no thread) in the flange
- Two additional holes running crossways through this pneumatic multiple connector plate also allow rear mounting of valve terminal CPV.

[1] Mounting holes

Without flange, with all pneumatic connections, code M

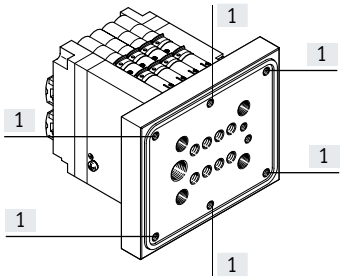


- For 10 mm, 14 mm and 18 mm
- Multiple connector plate ends flush with the end plates
- Mounting holes (with thread) for wall or base mounting in the connection side of the pneumatic multiple connector plate

[1] Mounting holes

Pneumatic multiple connector plate for control cabinet installation

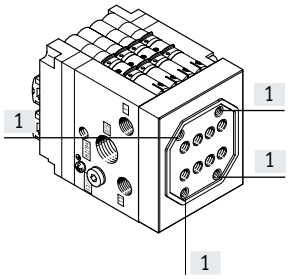
With all pneumatic connections, code GQC



- For 10 mm and 14 mm
- Multiple connector plate protrudes at the end plates
- Mounting holes (with thread) in the flange
- Multiple connector plate with seal

[1] Mounting holes

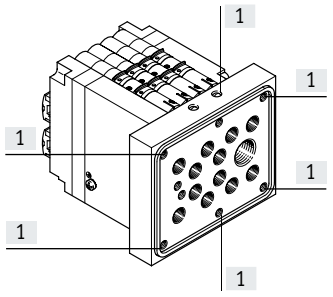
With pneumatic ports 2 and 4, code GQD



- For 10 mm and 14 mm
- Multiple connector plate ends flush with the end plates
- The mounting holes (with thread) are in the connection side of the pneumatic multiple connector plate
- Multiple connector plate with seal

[1] Mounting holes

With all pneumatic connections, code GQE



- For 10 mm
- Multiple connector plate protrudes at the end plates
- Mounting holes (with thread) in the flange
- Multiple connector plate with seal

[1] Mounting holes

Note

When using the pneumatic multiple connector plate M or P, the outermost valve slices cannot be fitted with valve extensions (e.g. one-way flow control valve).

Valve terminals CPV with flat plate silencer can only be mounted on a wall.

When using the pneumatic multiple connector plate GQC, GQD or GQE, the following restrictions apply:

- In general, no valve extensions can be fitted
- Cannot be combined with H-rail mounting
- Cannot be combined with wall mounting
- Only with 10 mm and 14 mm

Key features – Display and operation

Manual override

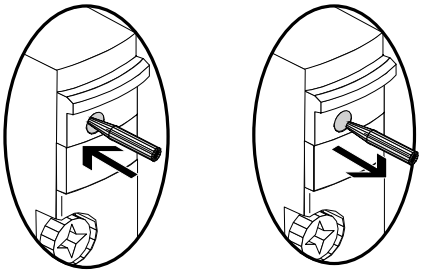
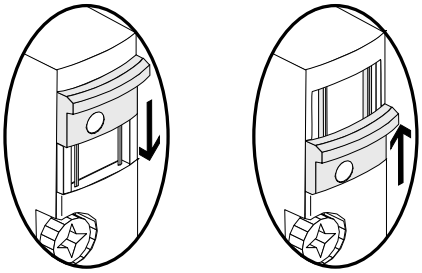
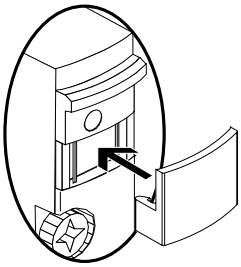
Three types of manual override are available:
- Non-detenting via slide
- Detenting
- Blocked

A subsequent conversion of the manual override (MO) from non-detenting to detenting or blocked is possible at any time.

To do this, the valve locking mechanism must first be removed. This is only possible when the individual valve is not installed or by removing the tie rod on the valve terminal.

Note

Follow the instructions in the user documentation when doing this.

Code	Graphical illustration	Size			Note
		10	14	18	
N	Manual override, non-detenting 	■	■	■	In the "non-detenting" version, a locking mechanism prevents the blue slider from moving. The manual override is activated using a pointed object (ballpoint pen or similar) through the opening.
R	Manual override, detenting 	■	■	■	In the "detenting" version, the manual override is activated by sliding the slider. An interlock can be used to provide the non-detenting function.
V	Manual override, blocked 	■	■	■	In the "blocked" version, the detenting and non-detenting activation is prevented by a cover. As with the non-detenting locking mechanism, this cover can be added subsequently, but cannot then be removed from the valve.

Key features – Display and operation

Display and operation

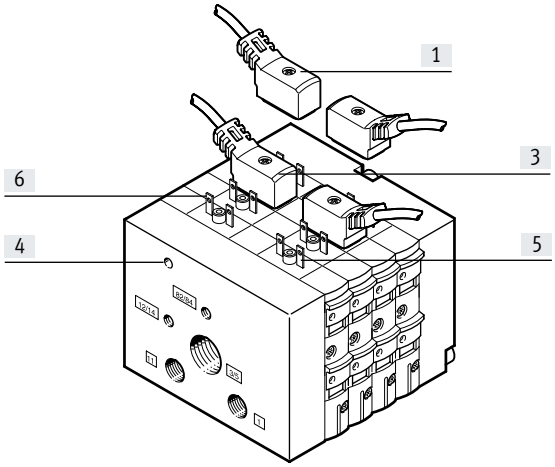
LEDs for indicating the switching status are located on the electrical connection for the valve terminal CPV:

- Indicating the switching status of the pilot solenoid coil 12 for output 2
- Indicating the switching status of the pilot solenoid coil 14 for output 4
- Can be read from "above" as well as from the "front"

With individual connection, an LED for indicating the switching status is located in the connector plug.

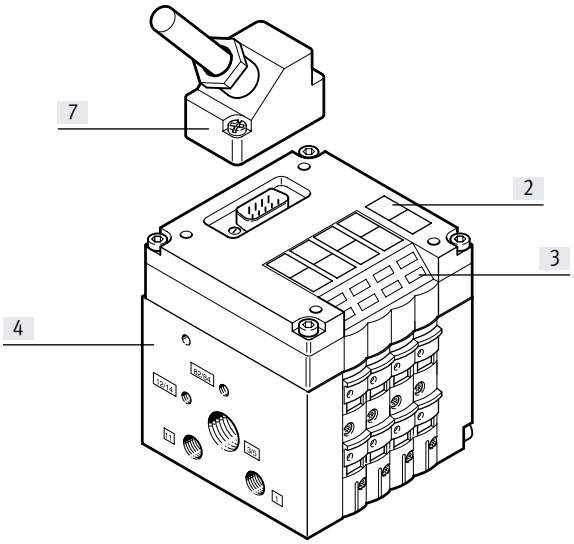
Inscription labels
- Clip with identification field on the connector plug (for individual connection)
- Labelling clips on the connection node (multi-pin, AS-Interface, installation system CP, Fieldbus Direct)

Valve manifold assembly CPV with individual connection



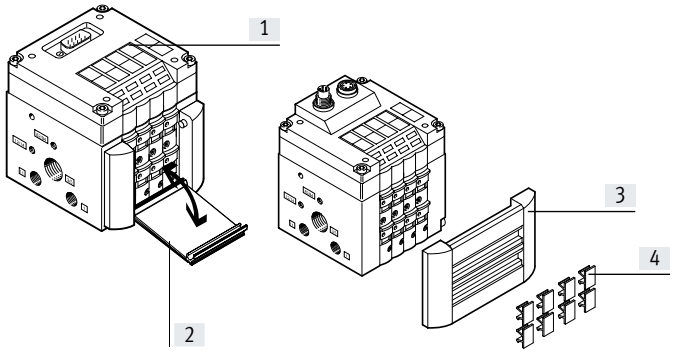
[1] Pre-assembled connecting cable for each pilot solenoid coil
[2] Slot for inscription label
[3] Yellow LED, signal status indication of the pilot solenoid coils (for each connecting cable)
[4] Earthing connection

CPV valve terminal with multi-pin plug connection



[5] Terminal lug for solenoid coil 14
[6] Terminal lug for solenoid coil 12
[7] Sub-D multi-pin plug (9-pin for valve terminals with 4 valves, 25-pin for valve terminals with 6 or 8 valves)

Inscription system



[1] Inscription labels
Type IBS-6x10 for CPV10/14
Type IBS 9x20 for CPV18
[2] Transparent inscription label holder
for large paper labels (can be read from both sides)
[3] Inscription label holder
[4] Inscription labels
type IBS 6x10

Inscription labels can be affixed as follows:
- On the top of the basic electrical unit
- On the inscription label holder

The inscription label holder enables additional inscription labels to be attached while covering the manual override, protecting it from unintentional activation. The inscription labels are used to record additional information regarding the valves.
They can be ordered together with the valve terminal using the code. The relevant inscription labels are supplied in a frame and are ordered separately.

The inscription label holder cannot be used together with the relay plate.

Transparent inscription label holder
The transparent inscription label holder CPV...-VI-ST-... offers an additional option for labelling, e.g. for large paper labels that can be read from both sides.

Note
MS Word templates for CPV inscription label holders can be found at:
www.festo.com

Key features – Electrical components

Electrical connection

The valve slice contacts that are directed upwards form the interface to different types of electrical connection. The electrical connection is secured from above using 4 screws.

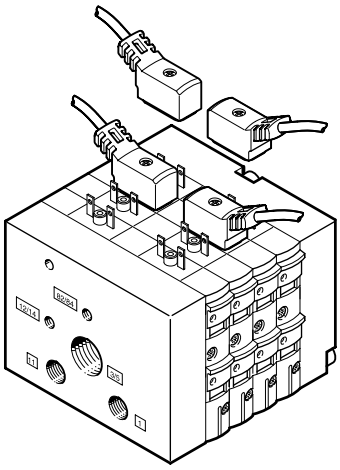
With the same pneumatic part, the valve terminal can thus be adapted to the different electrical requirements or fieldbus protocols.

Electrical power

Valves CPV10/14 are controlled via a current reduction which reduces the power consumption and prevents the generation of heat.

This current reduction is already integrated into the respective basic electrical unit (multi-pin connection or fieldbus interface) or into the connecting cable.
When switching off, voltage peaks are limited to 38 V DC.

Individual connection

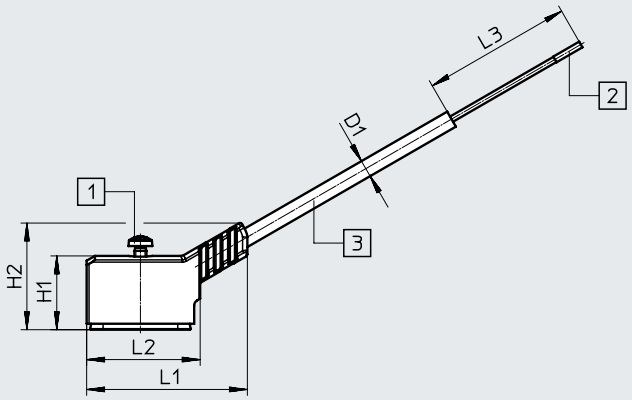


With individual connection, integration is on the pneumatic part only; the solenoid valves are connected with individual cables.

Key features – Electrical components

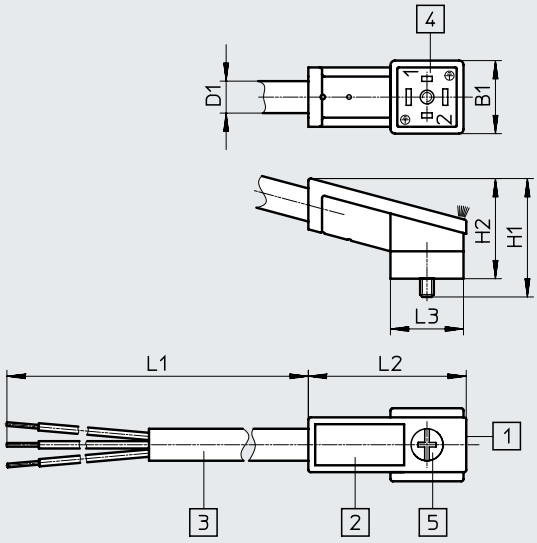
Dimensions – Connecting cable, individual connection Download CAD data ➔ www.festo.com

NEBV-...



[1] Retaining screw
[2] Wire end sleeve
[3] Cable, length depending on the order

KMEB-2-24-...-LED

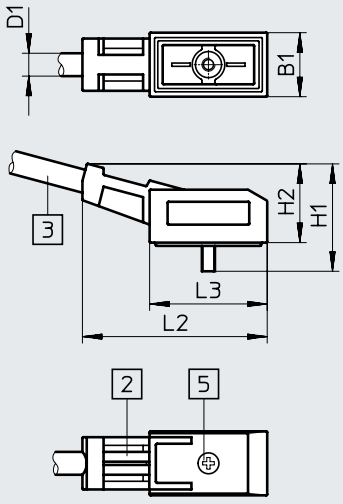


[1] LED illuminated area
[2] Inscription label IBS-9x20 Part no. 18182
[3] 3-wire cable 2.5 or 5 m (3x 0.75 mm²)
[4] Plug pattern to EN 175301-803, type C
[5] M2.5 screw, captive, screwdriver: Pozidriv combi cross-slot to EN 7045

Type	B1	D1	H1	H2	L1	L2	L3	L5
NEBV-Z3WA2L-...	9.7	2.9	12.4	–	26.9	19	50	8.4
KMEB-2-24-2.5-LED	16	7	26	22	2500	34.6	16	–
KMEB-2-24-5-LED					5000			

Dimensions – Connecting cable for relay plate Download CAD data ➔ www.festo.com

KRP-1-24-...



[2] Location for inscription labels (order code IBS6x10, Part no. 18576)
[3] Cable, length depending on the order
[5] Retaining screw (self-tapping KB 1.8x9)

Type	B1	D1	H1	H2	L2	L3
KRP-1-24-...	9.8	3.4	16.4	12	28.3	18

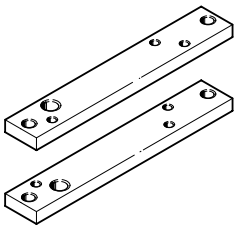
Key features – Electrical components

ET200X/ET200pro pneumatic interface for CPV10 and CPV14

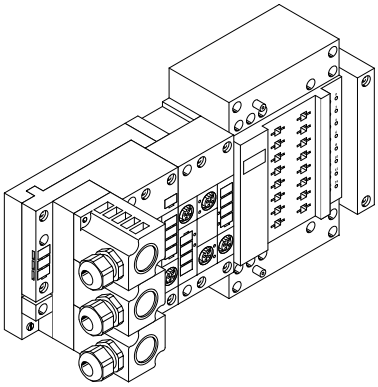
Adaptation of the valve manifold assembly CPV to the input/output module ET200X/ET200pro from Siemens. Combining the function modules of ET200X/ET200pro with the pneumatic functions of the valve manifold assembly CPV creates a highly integrative automation solution for systems for electric and pneumatic drives with:

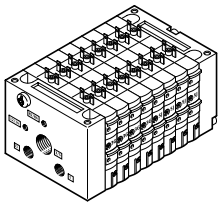
- 8 valve slices for up to 16 CPV valves
- Faster and more reliable contacting
- Valve manifold assembly CPV10 and CPV14
- High IP65/IP67 degree of protection
- Modular design
- Large number of I/O modules
  - Digital I/O
  - Analogue I/O
  - Usage branching to control three-phase motors
- PROFIBUS DP interface

Mounting set for ET200X CPV-...-VI-BG-ET200X (included in scope of delivery)



Specific data for the ET200X/ET200pro pneumatic interface can be found in the Siemens product catalogues.

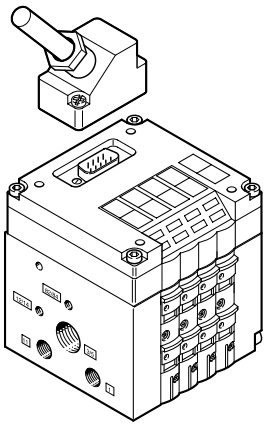




Note

With valve manifold assembly CPV10-ET200pro, a moulded seal is required to achieve the IP degree of protection.
The moulded seal CPV10-...-GE-8 or CPV14-...-GE-8 must be ordered separately.

– Multi-pin plug connection



The multi-pin plug connection provides electrical integration in addition to pneumatic integration, and enables connection between the control cabinet and the valve terminal using a single cable.

IP65 protection is guaranteed even with the Sub-D push-in connectors thanks to the plug housing of the cable KMP-...

The following plug sizes are used:

- Valve terminal with 4 valves: 9-pin
- Valve terminal with 6 valves: 25-pin
- Valve terminal with 8 valves: 25-pin

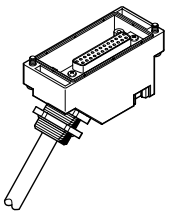
Pre-assembled connecting cables are supplied for ease of connection.

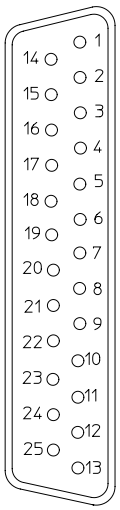
Lengths of 5 m and 10 m can be supplied as standard. The pre-assembled connecting cables are also available in a version suitable for energy chains. The cable KMP6-... can be used instead for applications with IP40 protection.

Key features – Electrical components

Pin allocation – Pre-assembled multi-pin cable (view from plug-in direction)

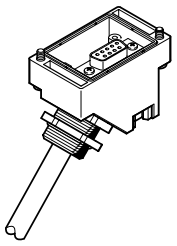
Cable KMP3-25P-16... or KMP4-25P... with 25-pin Sub-D plug for valve terminals with 6 or 8 valves

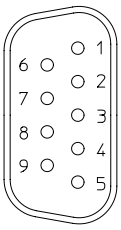




View of plug	Pin	Wire colour	Valve 24 V DC	
	1	White	1	14
	2	Green		12
	3	Yellow	2	14
	4	Grey		12
	5	Pink	3	14
	6	Blue		12
	7	Red	4	14
	8	Violet		12
	9	Grey-pink	5	14
	10	Red-blue		12
	11	White-green	6	14
	12	Brown-green		12
	13	White-yellow	7	14
	14	Yellow-brown		12
	15	White-grey	8	14
	16	Grey-brown		12
	17	White-pink (KMP4 only)		
	18	Pink-brown (KMP4 only)		
	19	White-blue (KMP4 only)		
	20	Brown-blue (KMP4 only)		
	21	White-red (KMP4 only)		
	22	Brown-red (KMP4 only)		
	23	White-black (KMP4 only)		
	24	Brown	(0 V)[1)]	
	25	Black	(0 V)[1)]	

Cable KMP3-9P... or KMP4-9P... with 9-pin Sub-D plug for valve terminals with 4 valves





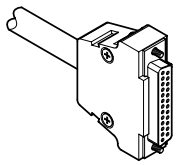
	1	White	1	14
	2	Green		12
	3	Yellow	2	14
	4	Grey		12
	5	Pink	3	14
	6	Blue		12
	7	Red	4	14
	8	Violet		12
	9	Black	Common	

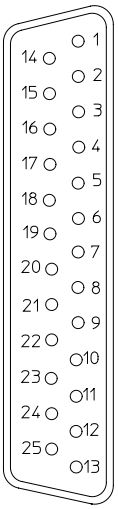
1) 0 V for positive switching control signals; connect 24 V for negative switching control signals; mixed operation is not permitted.

Key features – Electrical components

Pin allocation – Pre-assembled multi-pin cable (view from plug-in direction)

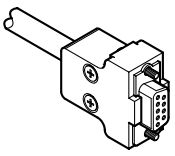
Cable KMP6-25P-20... with 25-pin Sub-D plug for valve terminals with 6 or 8 valves

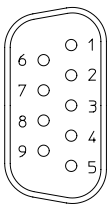




View of plug	Pin	Wire colour	Valve 24 V DC	
	1	White	1	14
	2	Brown		12
	3	Green	2	14
	4	Yellow		12
	5	Grey	3	14
	6	Pink		12
	7	Blue	4	14
	8	Red		12
	9	Black	5	14
	10	Violet		12
	11	Grey-pink	6	14
	12	Red-blue		12
	13	White-green	7	14
	14	Brown-green		12
	15	White-yellow	8	14
	16	Yellow-brown		12
	17	White-grey		
	18	Grey-brown		
	19	White-pink		
	20	Pink-brown		
	21	White-blue[1)]		
	22	Brown-blue[1)]		
	23	White-red[1)]		
	24	Brown-red[1)]	(0 V)[2)]	
	25	White-black[1)]	(0 V)[2)]	

Cable KMP6-9P-20... with 9-pin Sub-D plug for valve terminals with 4 valves





	1	White	1	14
	2	Brown		12
	3	Green	2	14
	4	Yellow		12
	5	Grey	3	14
	6	Pink		12
	7	Blue	4	14
	8	Red		12
	9	Black	Common	

1) Wire cross section 0.34 mm²

2) 0 V for positive switching control signals; connect 24 V for negative switching control signals; mixed operation is not permitted.

Note

Two threaded sleeves (NEAU-TA-M35-U4, → p. 65) are required to secure the multi-pin cable KMP6.

Key features – Electrical components

Valve terminal CPV – AS-Interface valve terminal

The AS-Interface allows individual components or small component groups to be widely distributed in terms of space.
The AS-Interface connection of valve terminal CPV can be used to control 2, 4 or 8 solenoid coils.
The valve terminal cover contains the LEDs that indicate the operating status and the protective circuit for the valves.
The standard AS-Interface protocol permits a maximum of 4 inputs and 4 outputs in one unit. By using 2 AS-Interface slaves in one valve terminal, it is possible to control 8 inputs and 8 outputs in a valve terminal with 8 valves (8 solenoid coils).
All valve terminals CPV can be operated with other functions such as relay plates or vacuum generators.

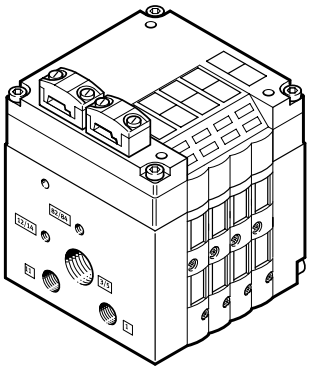
Valve terminals CPV with inputs are also available for A/B mode to SPEC 2.1 and 3.0.

AS-Interface control
- For 2, 4 or 8 valves
- Wide range of variants from the broad modular offering

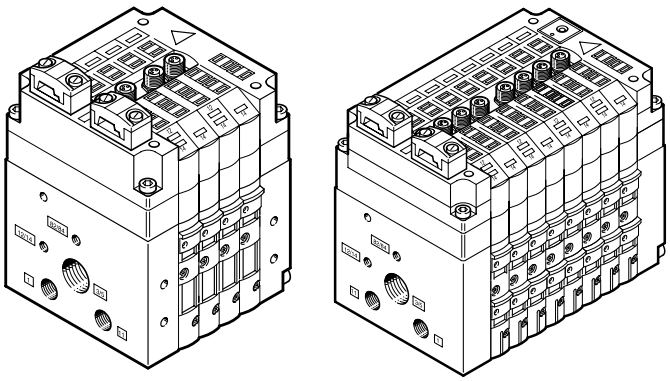
AS-Interface with A/B operation
- For 3 or 4 or 6 or 8 valves, depending on the specification
- It still provides all the benefits of the straightforward installation system
- 100% more inputs/master
- 50% more outputs/master
- Improved diagnostics of faults in peripherals
- More functions on the AS-Interface within Spec 2.1 and 3.0.

➔ Internet: as-interface

AS-Interface valve terminal with auxiliary power supply



AS-Interface valve terminal with auxiliary power supply and inputs



Key features – Electrical components

I-Port interface/IO-Link

The I-Port interface/IO-Link enables the valve terminal CPV to be connected to the following systems:
- I-Port master from Festo (CPX terminal, CECC)
- Bus node CTEU from Festo
- IO-Link master

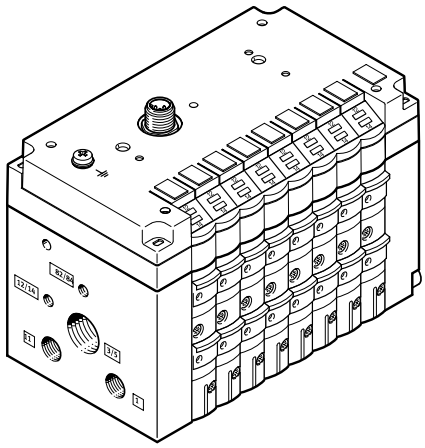
A maximum of 16 solenoid coils can be actuated, distributed over a maximum of 8 valve positions.

The maximum distance between the I-Port/IO-Link master and valve terminal with I-Port interface/IO-Link is 20 m.
The 5-pin connecting cables contain the power supply for the valves; the power supply for the internal valve terminal electronics and the control signals are separate from this.

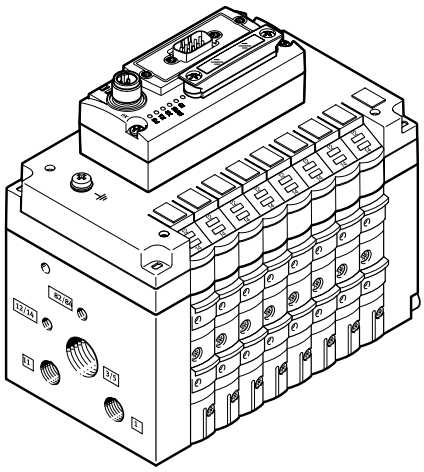
The valve terminal cover contains the LEDs that indicate the operating status and the protective circuit for the valves.
All valve terminals CPV can be operated with other functions such as relay plates or vacuum generators.

→ Internet: cteu
→ Internet: cpx
→ Internet: cecc

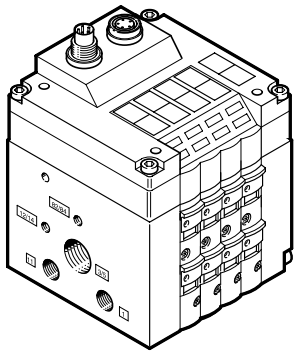
CPV valve terminal with I-Port interface/IO-Link



CPV valve terminal with I-Port interface with fieldbus node



Installation system CP/CPI, valve terminal



The valve terminals CPV are integrated into fieldbus systems or stand-alone control systems by connecting the terminals using single, pre-assembled terminal connections to the corresponding fieldbus node or control block.

The system integrates the valve terminal CPV and various I/O modules, etc. into a single installation concept.

The 5-pin connecting cables carry the supply power and control signals.
The valve terminal cover contains the LEDs that indicate the operating status and the protective circuits for the valves.

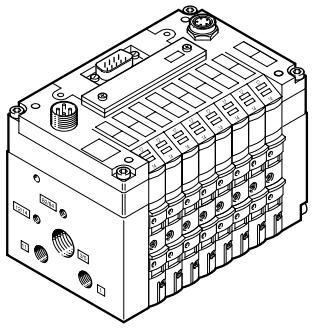
- Max. 8 valve slices for up to 16 CPV valves

The input and output statuses of the connected module are exchanged with the CP fieldbus node via the CP string.

→ Internet: ctec

Instructions for use

Fieldbus Direct valve terminal



Fieldbus Direct is a system for the connection of a valve terminal to 9 different fieldbus standards. The most important systems, such as PROFIBUS, INTERBUS, DeviceNet and CANopen, are covered.

The CP string extension option enables the functions and components of the CPI installation system to be used.

The optional string extension permits additional valve terminals and I/O modules with CP/CPI function to be connected to the Fieldbus Direct fieldbus node.

Depending on version, the valve terminals are available in all three sizes, 10, 14 and 18 mm, each having 8 valve slices.

Service fluids

Operate your system with unlubricated compressed air if possible. Festo valves and cylinders are designed so that, if used as intended, they will not require additional lubrication and will still achieve a long service life.
The quality of compressed air downstream of the compressor must correspond to that of unlubricated compressed air. If possible, do not operate the entire system with lubricated compressed air. The lubricators should, where possible, always be installed directly upstream of the actuator requiring them.

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 on synthetic or native esters, 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 51524, parts 1 to 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 is not permitted, regardless of the compressor oil, because permanent lubrication would otherwise be flushed out over a period of time.

Data sheet

- Flow rate up to
  CPV10: 400 l/min
  CPV14: 800 l/min
  CPV18: 1600 l/min

- Valve width
  CPV10: 10 mm
  CPV14: 14 mm
  CPV18: 18 mm

- Voltage
  24 V DC

General technical data				
		CPV10	CPV14	CPV18
Design		Electromagnetically actuated piston spool valve		
Lubrication		Life-time lubrication, PWIS-free (free of paint-wetting impairment substances)		
Type of mounting		Via pneumatic multiple connector plate		
		Via backwall		
		On H-rail		
Mounting position		Any		
Lap		Overlap		
Manual override		Non-detenting/detenting/blocked		
Width	[mm]	10	14	18
Nominal width	[mm]	4	6	8
Nominal flow rate without fitting	[l/min]	400	800	1600 1400[3]
b value		0.4	0.42 0.37[2]	0.38 0.41[2] 0.40[3]
c value	[l/sbar]	1.6	3.2	6.3 5.66[3]
Pneumatic connections[1]				
Pneumatic connection		Via end plate or pneumatic multiple connector plate		
Supply port	1/11	G1/8	G1/4	G3/8
Exhaust port	3/5	G3/8 (G1/4)	G1/2 (G3/8)	G1/2
Working ports	2/4	M7	G1/8	G1/4
Pilot air port	12/14	M5 (M7)	G1/8	G1/4
Pilot exhaust air port	82/84	M5 (M7)	G1/8	G1/4

1) Connection dimensions in brackets for pneumatic multiple connector plate
2) Values for 2x 2/2-way valve
3) Values for 5/3-way valve with mechanical spring return

Safety characteristics				
		CPV10	CPV14	CPV18
Tried-and-tested component		Yes		
Max. positive test pulse with 0 signal	[µs]	1400	1400	1900
Max. negative test pulse with 1 signal	[µs]	700	400	1700
Shock resistance		Shock test with severity level 2, to EN 60068-2-27		
Vibration resistance		Transport application test with severity level 2, to EN 60068-2-6		

Data sheet

Operating and environmental conditions – Valves of width 10 mm													
Valve function order code		M, MK	F	J, JK	N, NK	C, CK	H, HK	D, DK	I, IK	CY	G[2]	A	E
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4] ➔ 36											
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)											
Operating pressure	[MPa]	–0.09 ... +1								+0.01 ... +1	–	–	–
	[bar]	–0.9 ... +10								+0.1 ... +10	2.5 ... +10	3 ... +8	2 ... +10
Operating pressure for valve terminal with internal pilot air supply	[MPa]	0.3 ... 0.8									–	–	–
	[bar]	3 ... 8											
Pilot pressure	[MPa]	0.3 ... 0.8									–	–	–
	[bar]	3 ... 8									–	–	–
Ambient temperature	[°C]	–5 ... +50										0 ... +50	
Temperature of medium	[°C]	–5 ... +50										0 ... +50	
Storage temperature	[°C]	–20 ... +40											
Duty cycle	[%]	100 (in conjunction with holding current reduction)											
Relative air humidity at 25°C	[%]	95 with no condensation											
Corrosion resistance class CRC[1]		2										1	
Note on materials		RoHS-compliant											

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.
Corrosion resistance class CRC 1 to Festo standard 940070
Components subject to low corrosion stress. 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) Function 5/3G possible as kit for width 10 mm and 14 mm

Operating and environmental conditions – Valves of width 14 mm											
Valve function order code		M, MK	J, JK	N, NK	C, CK	H, HK	D, DK	I, IK	G[2]	A	E
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4] ➔ 36									
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)									
Operating pressure	[MPa]	–0.09 ... +1							–	–	–
	[bar]	–0.9 ... +10							2.5 ... +10	3 ... +8	2 ... +10
Operating pressure for valve terminal with internal pilot air supply	[MPa]	0.3 ... 0.8							–	–	–
	[bar]	3 ... 8									
Pilot pressure	[MPa]	0.3 ... 0.8							–	–	–
	[bar]	3 ... 8							–	–	–
Ambient temperature	[°C]	–5 ... +50								0 ... +50	
Temperature of medium	[°C]	–5 ... +50								0 ... +50	
Storage temperature	[°C]	–20 ... +40									
Duty cycle	[%]	100 (in conjunction with holding current reduction)									
Relative air humidity at 25°C	[%]	95 with no condensation									
Corrosion resistance class CRC[1]		2								1	
Note on materials		RoHS-compliant									

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.
Corrosion resistance class CRC 1 to Festo standard 940070
Components subject to low corrosion stress. 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) Function 5/3G possible as kit for width 10 mm and 14 mm

Data sheet

Operating and environmental conditions – Valves of width 18 mm											
Valve function order code		M	J	N	C	H	D	I	G	A	E
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4] → 36									
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)									
Operating pressure	[MPa]	–0.09 ... +1								–	–
	[bar]	–0.9 ... +10								3 ... +8	2 ... +10
Operating pressure for valve terminal with internal pilot air supply	[MPa]	0.3 ... 0.8								–	–
	[bar]	3 ... 8									
Pilot pressure	[MPa]	0.3 ... 0.8	0.2 ... 0.8	0.3 ... 0.8					0.35 ... 0.8	–	–
	[bar]	3 ... 8	2 ... 8	3 ... 8					3.5 ... 8	–	–
Ambient temperature	[°C]	–5 ... +50								0 ... +50	
Temperature of medium	[°C]	–5 ... +50								0 ... +50	
Storage temperature	[°C]	–20 ... +40									
Duty cycle	[%]	100									
Relative air humidity at 25°C	[%]	95 with no condensation									
Corrosion resistance class CRC[1)]		2								1	
Note on materials		RoHS-compliant									

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.
Corrosion resistance class CRC 1 to Festo standard 940070
Components subject to low corrosion stress. 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.

Data sheet

ATEX	
ATEX category gas	II 3G
Type of ignition protection for gas	Ex nA IIC T4 X Gc
ATEX category for dust	−5 ≤ Ta ≤ +50
Certification	c UL us Recognized (OL)
	C-Tick
Explosion protection certification outside the EU	NEC 500 Class I, Div. 2
CE marking (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)
	To EU EMC Directive
KC mark	KC EMC
Certification	RCM compliance mark
	c UL us - Recognized (OL)

Note

The ATEX certification in accordance with the EU ATEX Directive only applies to fully assembled valve terminals.

ATEX Permitted pneumatic multiple connector plates for the valve terminal CPV					
Pneumatic multiple connector plate		CPV10-VI-P...-C	CPV10-VI-P...-D	CPV14-VI-P...-C.	CPV14-VI-P...-D
ATEX category gas		II 2G			
Type of ignition protection for gas		Ex ec IIC Gb			
ATEX category for dust		II 2D			
Type of ignition protection for dust		Ex tc IIIC Db			
ATEX ambient temperature	[°C]	−10°C <= Ta <= +60°C			
Certificate issuing authority		IECEx TUR 12.0002X			
		TÜV 06 ATEX 7334 X			
Explosion protection certification outside the EU		EPL Db (IEC Ex)			
		EPL Gb (IECEx)			
CE marking (see declaration of conformity)		To EU Explosion Protection Directive (ATEX)			

Electrical data				
		CPV10	CPV14	CPV18
Operating voltage	[V DC]	24 (+10/−15%)		
Ramp steepness (IC and MP only)	[V/ms]	> 0.4 minimum voltage rise time to reach the high-current phase		
Limitation of the voltage peaks when switching off	[V DC]	38		
Residual ripple	[Vss]	4		
Electrical power consumption	[W]	0.6 (0.45 at 21 V); (with CPV10-M11H-... 0.65)	0.9 (0.65 at 21 V)	1.5 (0.95 at 21 V)
Protection against electric shock (protection against direct and indirect contact as per EN 60204-1/IEC 204)		Through PELV power supply unit		
Degree of protection to EN 60529	[IP]	65 (for all types of signal transmission in mounted state)		

Data sheet

Relay plate					
			CPV10	CPV14	CPV18
Operating voltage		[V DC]	20.4 ... 26.4		–
Electrical power consumption		[W]	1.2		–
No. of relays			2 with galvanically isolated outputs		–
Load current circuit			Each 1 A/24 V DC +10%		–
Relay response times	On	[ms]	5		–
	Off	[ms]	2		–

Valve switching times [ms]																				
Valve function order code		M	MK	F	J	JK	N	NK	C	CK	CY	H	COG	G	D	DK	I	IK	A	E
CPV10																				
Switching times	On	17	17	12	–	–	17	17	17	17	17	17	17	20	15	15	15	15	–	15
	Off	27	27	17	–	–	25	25	25	25	25	25	25	30	17	17	17	17	–	17
	Changeover	–	–	–	10	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CPV14																				
Switching times	On	25	25	–	–	–	24	24	24	24	–	24	24	22	13	13	13	13	–	13
	Off	35	35	–	–	–	30	30	30	30	–	30	30	30	16	16	16	16	–	16
	Changeover	–	–	–	12	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CPV18																				
Switching times	On	18	–	–	–	–	18	–	18	–	–	–	–	14	14	–	14	–	–	14
	Off	26	–	–	–	–	24	–	24	–	–	–	–	32	20	–	20	–	–	20
	Changeover	–	–	–	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Materials			
	CPV10	CPV14	CPV18
Basic electrical unit	Die-cast aluminium, PA, NBR		
Valve slices	Die-cast aluminium		
Valve module 5/3G	Die-cast aluminium, POM		
Relay plate	PA, brass		
Blanking plate/separator plate	PA		
End plates	Die-cast aluminium		
Flat plate silencer	Die-cast aluminium, PE		
Pneumatic multiple connector plate	Wrought aluminium alloy		
Inscription label holder	POM, PVC		
Seal	NBR, HNBR		

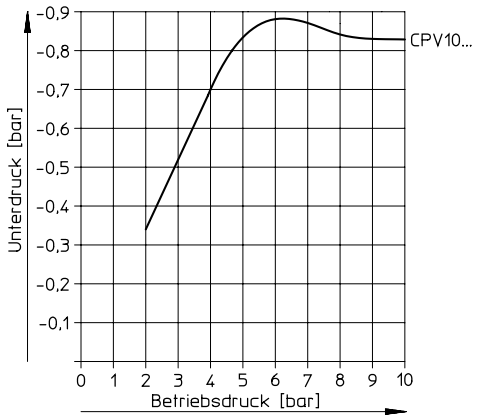
Data sheet

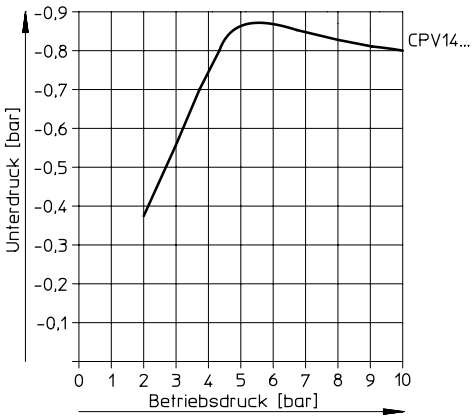
Product weight Approx. weights [g]	CPV10	CPV14	CPV18
Electrical connecting plate with AS-Interface connection			
• on CP valve terminals with 2 valve positions	85	130	275
• on CP valve terminals with 4 valve positions	110	175	355
• on CP valve terminals with 8 valve positions	400	460	–
Electrical connecting plates with CP connection			
• on CP valve terminals with 4 valve positions	145	230	–
• on CP valve terminals with 6 valve positions	180	250	–
• on CP valve terminals with 8 valve positions	200	300	–
Electrical connecting plates with MP connection			
• on CP valve terminals with 4 valve positions	110	170	400
• on CP valve terminals with 6 valve positions	140	230	425
• on CP valve terminals with 8 valve positions	165	275	515
End plates (2 pieces)	160	280	740
Pneumatic multiple connector plate			
• on CP valve terminals with 2 valve positions	120	270	520
• on CP valve terminals with 4 valve positions	165	390	750
• on CP valve terminals with 6 valve positions	225	510	870
• on CP valve terminals with 8 valve positions	270	630	1300
Flat plate silencer	147	234	–
Relay plate	35	55	–
Blanking plate	25	45	90
Separator plate	25	45	90
Valve sub-bases, vacuum generators	70	110	260
Function element: 5/3G function	46	105	–
Function element: one-way flow control valve	25	54	125

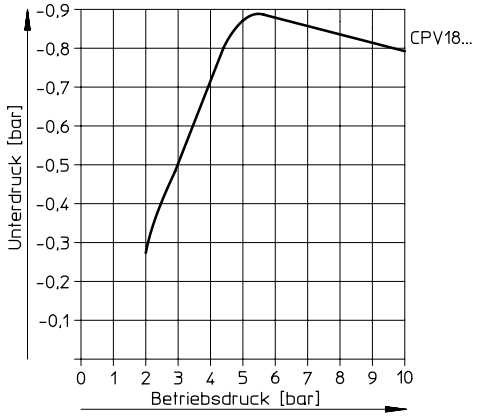
Data sheet

Vacuum generators

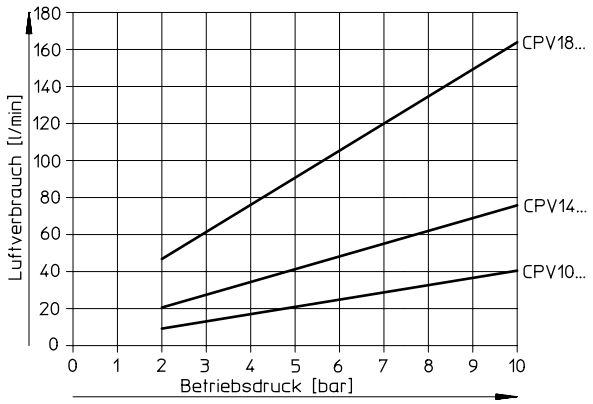
Vacuum as a function of operating pressure



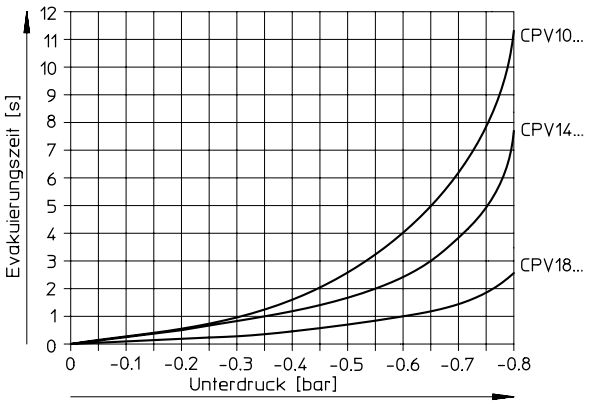




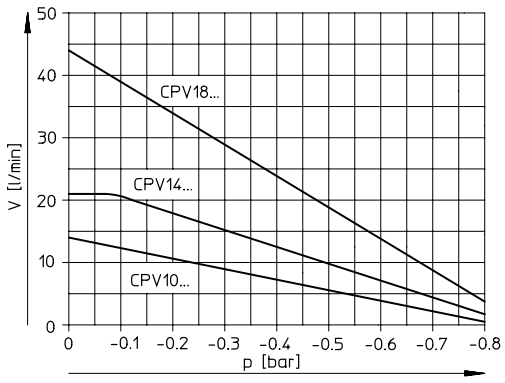
Air consumption as a function of operating pressure



Evacuation time for a volume of 1 litre at P_{nom}



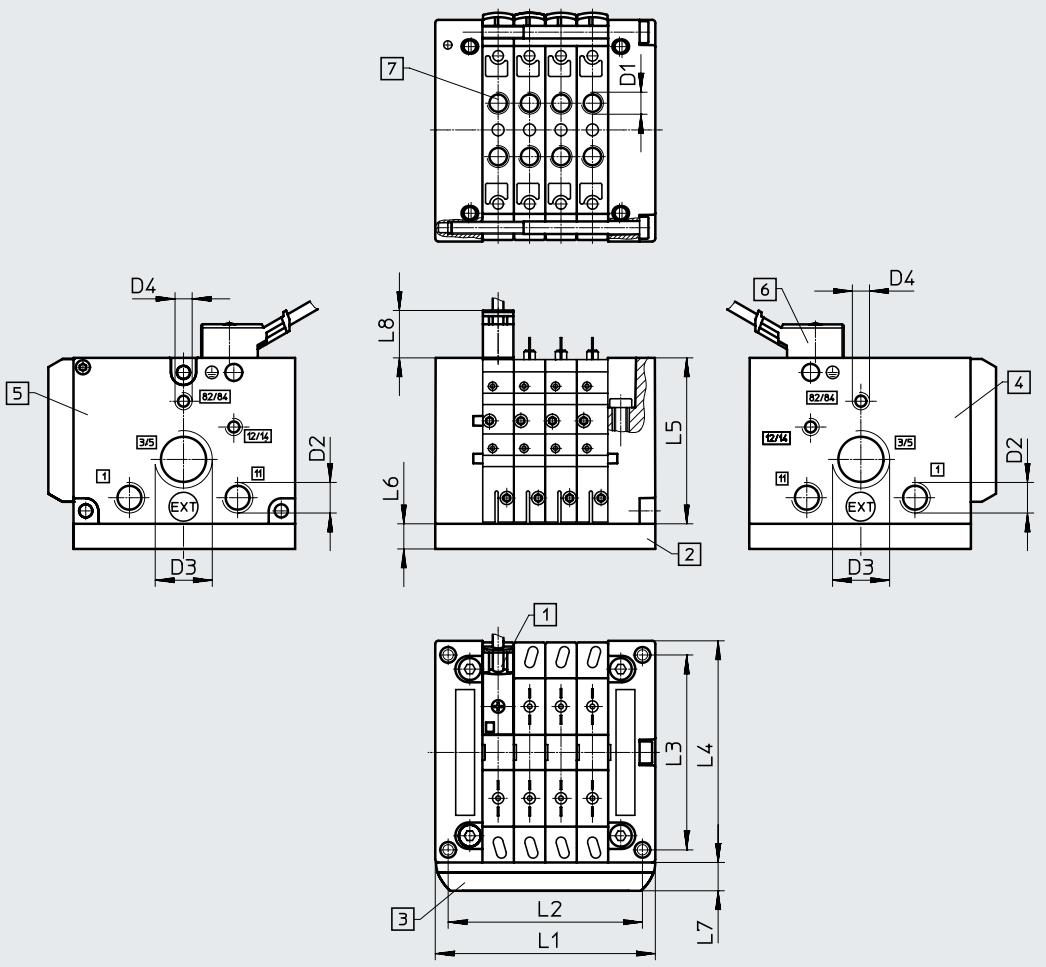
Suction capacity as a function of negative pressure at P_{nom}



Data sheet

Dimensions Download CAD data ➔ www.festo.com

Valve manifold assembly with individual connection – CPV10/14/18



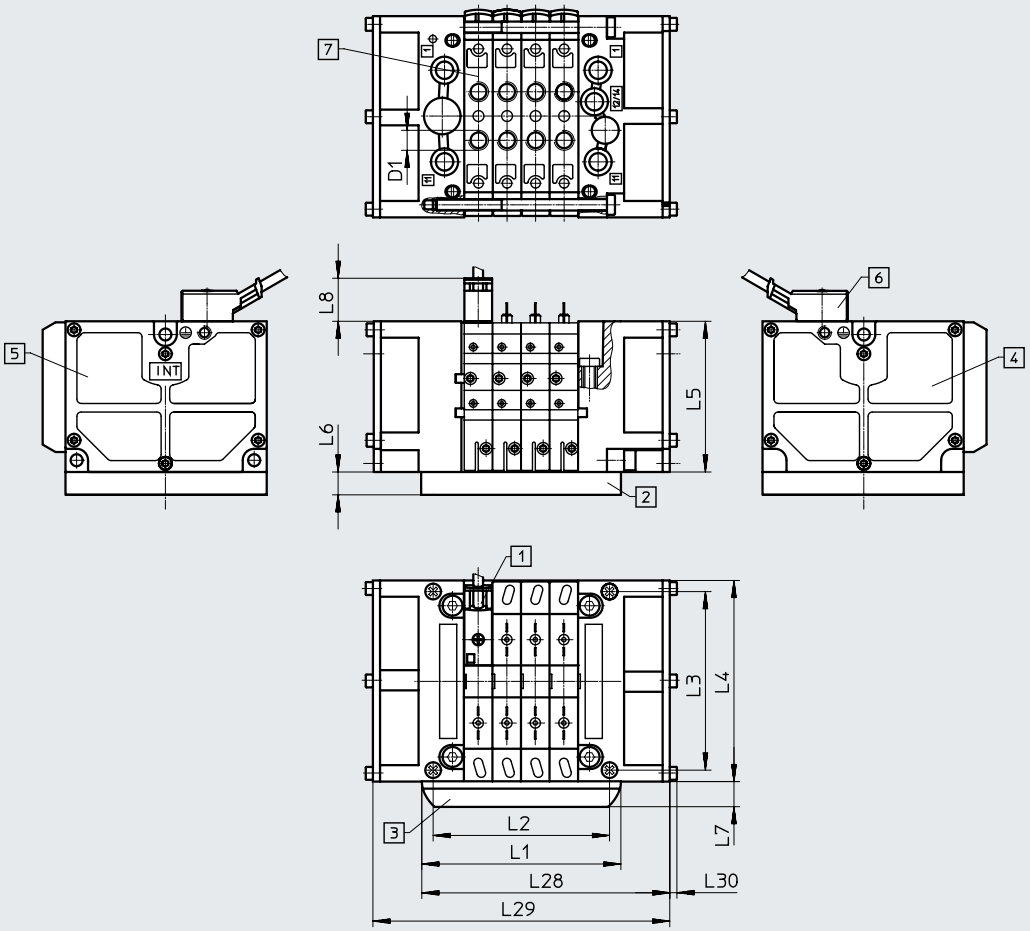
[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)
[4] Left-hand end plate (threaded connections not in combination with pneumatic multiple connector plate)
[5] Right-hand end plate (threaded connections not in combination with pneumatic multiple connector plate)
[6] Connecting cable
NEBV-... for CPV10/14
KMEB-2-... for CPV18
[7] Individual threaded connection (without pneumatic multiple connector plate)

		L1	L2	L3	L4	L5	L6	L7	L8	D1	D2	D3	D4
CPV10	2 valves	50	41.8	62	71	52.8	15	9.5	11.8	M7	G1/8	G3/8	M5
	3 valves	60	51.8										
	4 valves	70	61.8										
	5 valves	80	71.8										
	6 valves	90	81.8										
	7 valves	100	91.8										
	8 valves	110	101.8										
CPV14	2 valves	68	58	78	89	58.8	20	9.5	11.8	G1/8	G1/4	G1/2	G1/8
	3 valves	82	72										
	4 valves	96	86										
	5 valves	110	100										
	6 valves	124	114										
	7 valves	138	128										
	8 valves	152	142										
CPV18	2 valves	96	85.5	106.5	118	73	20	9.5	21.6	G1/4	G3/8	G1/2	G1/4
	3 valves	114	103.5										
	4 valves	132	121.5										
	5 valves	150	139.5										
	6 valves	168	157.5										
	7 valves	186	175.5										
	8 valves	204	193.5										

Data sheet

Dimensions Download CAD data ➔ www.festo.com

Valve manifold assembly with individual connection and flat plate silencer – CPV10/14/18



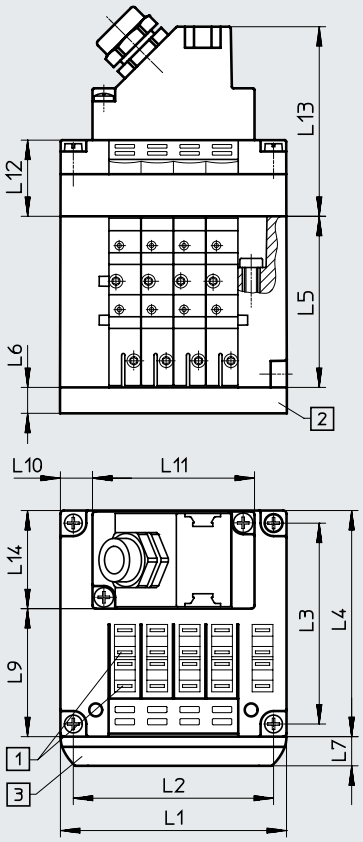
[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)
[4] Left-hand flat plate silencer
[5] Right-hand flat plate silencer
[6] Connecting cable
NEBV-... for CPV10/14
KMBE-2-... for CPV18
[7] Individual threaded connection (without pneumatic multiple connector plate)

		L1	L2	L3	L4	L5	L6	L7	L8	L28	L29	L30	D1
CPV10	2 valves	50	41.8	62	71	52.8	15	9.5	11.8	67	84	2.5	M7
	3 valves	60	51.8							77	94		
	4 valves	70	61.8							87	104		
	5 valves	80	71.8							97	114		
	6 valves	90	81.8							107	124		
	7 valves	100	91.8							117	134		
	8 valves	110	101.8							127	144		
CPV14	2 valves	68	58	78	89	58.8	20	9.5	11.8	85	102	3	G1/8
	3 valves	82	72							99	116		
	4 valves	96	86							113	130		
	5 valves	110	100							127	144		
	6 valves	124	114							141	158		
	7 valves	138	128							155	172		
	8 valves	152	142							169	186		
CPV18	2 valves	96	85.5	106.5	118	73	20	9.5	21.6	127	158	4.55	G1/4
	3 valves	114	105.5							145	176		
	4 valves	132	121.5							163	194		
	5 valves	150	139.5							181	212		
	6 valves	168	157.5							199	230		
	7 valves	186	175.5							217	248		
	8 valves	204	193.5							235	266		

Data sheet

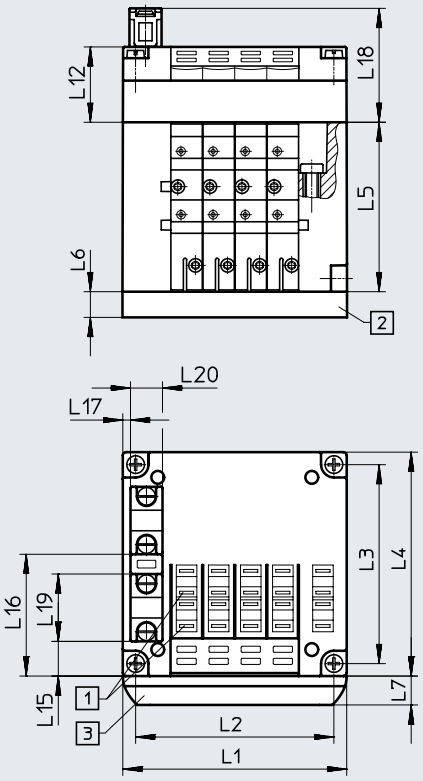
Dimensions Download CAD data ➔ www.festo.com

Valve terminal with multi-pin plug connection – CPV10/14/18



[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)

Valve terminal with AS-Interface connection – CPV10/14/18



[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)

Multi-pin plug connection

		L1	L2	L3	L4	L5	L6	L7	L9	L10	L11	L12	L13	L14
CPV10	4 valves	70	61.8	62	71	52.8	15	9.5	39.5	10	50	23.5	58.8	30
	6 valves	90	81.8							10	70			
	8 valves	110	101.8							20	70			
CPV14	4 valves	96	86	78	89	58.8	20	9.5	61.8	23	50	23.5	58.8	30
	6 valves	124	114							27	70			
	8 valves	152	142							41	70			
CPV18	4 valves	132	121.5	106.5	118	73	20	9.5	88.4	41	50	28	63	30
	6 valves	168	157.5							49	70			
	8 valves	204	193.5							67	70			

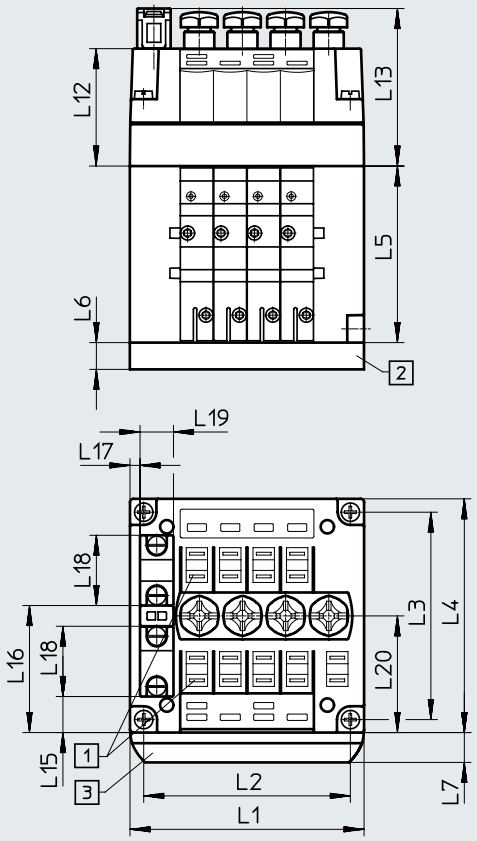
AS-Interface connection

		L1	L2	L3	L4	L5	L6	L7	L12	L15	L16	L17	L18	L19	L20
CPV10	2 valves	50	41.8	62	71	52.8	15	9.5	–	10.9	38.1	2.5	35.5	21	10
	4 valves	70	61.8						23.5						
	8 valves	110	101.8							–	–	–	–		
CPV14	2 valves	68	58	78	89	58.8	20	9.5	–	14	52	5	35.5	21	10
	4 valves	96	86						23.5						
	8 valves	152	142							–	–	–	–		
CPV18	2 valves	96	85.5	106.5	118	73	20	9.5	–	27.4	68.2	10.4	40	21	10
	4 valves	132	121.5						28						
	8 valves	204	193.5							–	–	–	–		

Data sheet

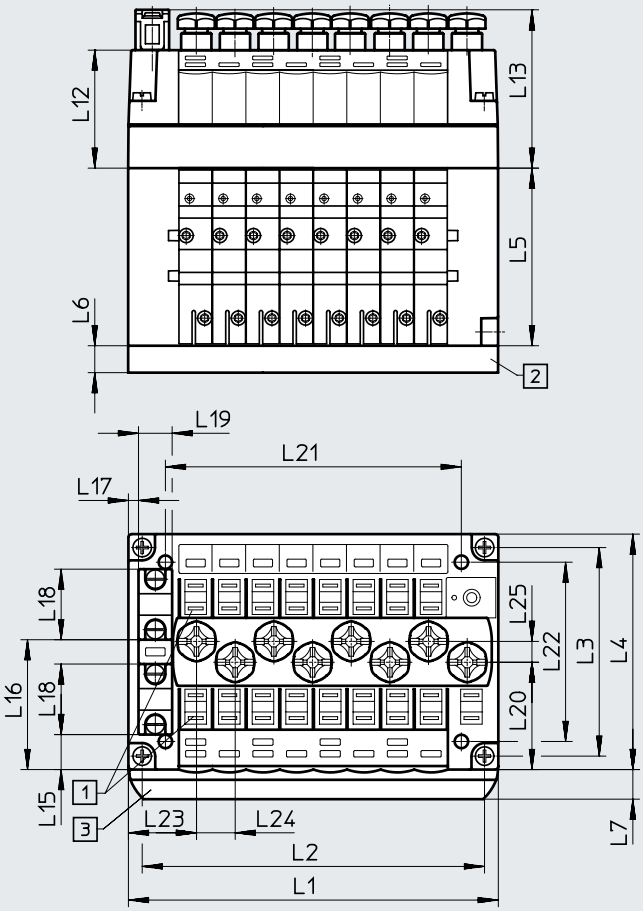
Dimensions Download CAD data ➔ www.festo.com

Valve terminal with AS-Interface connection and additional inputs – CPV10/14



[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)

Valve terminal with AS-Interface connection and additional inputs – CPV10



[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)

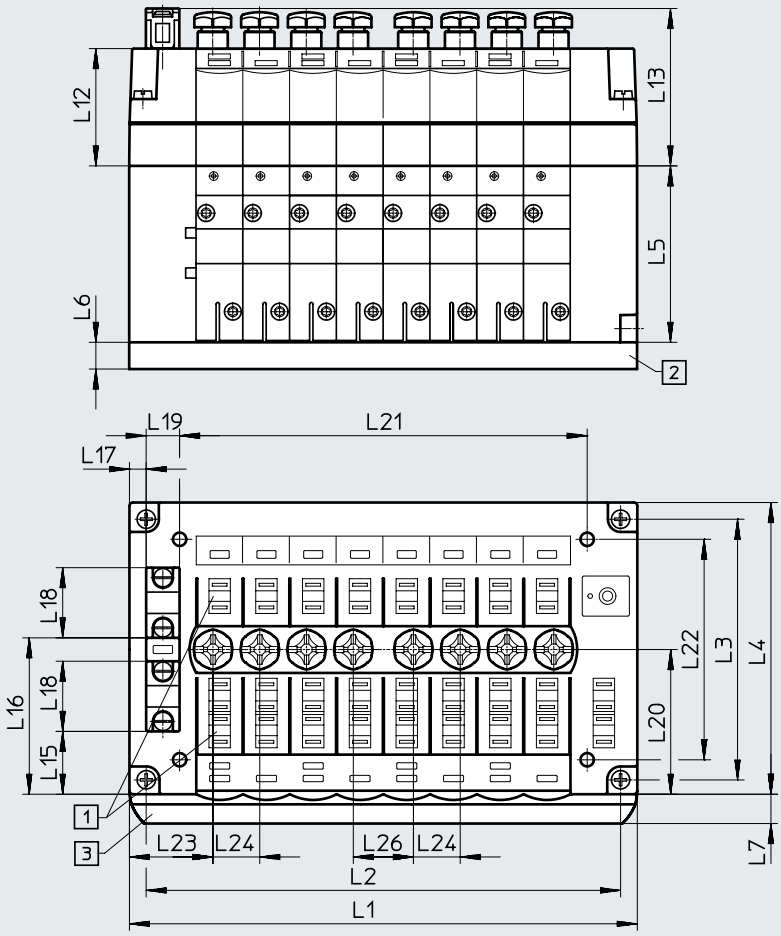
		L1	L2	L3	L4	L5	L6	L7	L12	L13	L15	L16	L17
CPV10	4 valves	70	61.8	62	71	52.8	15	9.5	35.1	47.1	10.9	38.1	3
	8 valves	110	101.8								10.4	38.6	3
CPV14	4 valves	96	86	78	89	58.8	20				18.8	46.8	5

		L18	L19	L20	L21	L22	L23	L24	L25
CPV10	4 valves	21	10	35	–	–	–	–	–
	8 valves			31.9	88	53.3	20.3	11.5	6.2
CPV14	4 valves			43.3	–	–	–	–	–

Data sheet

Dimensions Download CAD data ➔ www.festo.com

Valve terminal with AS-Interface connection and additional inputs – CPV14



[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)

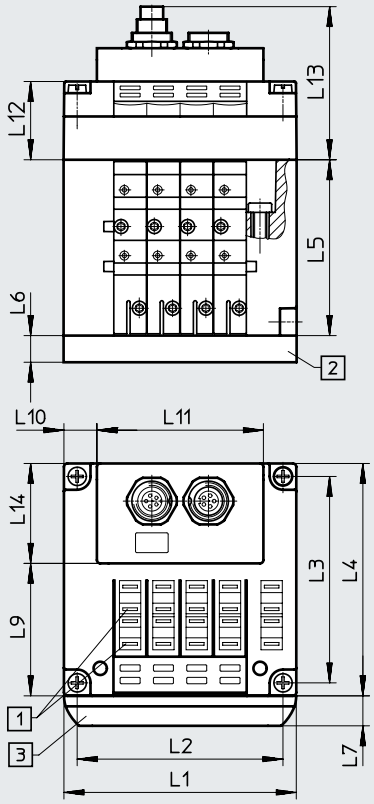
		L1	L2	L3	L4	L5	L6	L7	L12	L13	L15
CPV14	8 valves	152	142	78	89	58.8	20	9.5	35.1	47.1	18.8

		L16	L17	L18	L19	L20	L21	L22	L23	L24	L26
CPV14	8 valves	46.8	5	21	10	46.3	122	66	25	14	18

Data sheet

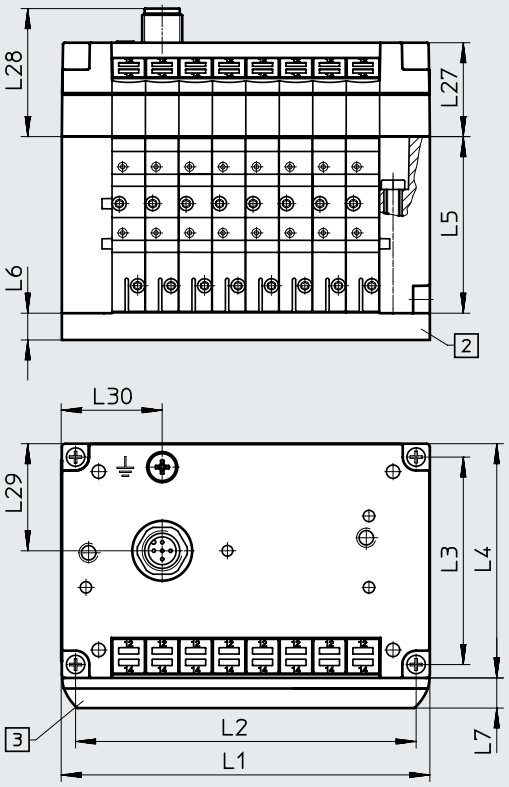
Dimensions Download CAD data ➔ www.festo.com

Valve terminal with installation system CPI – CPV10/14



[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14-VI-BZ-T-... or CPV10/14-VI-ST-T-...)

Valve terminal with I-Port interface/IO-Link – CPV10/14



[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels

Valve terminal with installation system CPI

		L1	L2	L3	L4	L5	L6	L7	L9	L10	L11	L12	L13	L14
CPV10	4 valves	70	61.8	62	71	52.8	15	9.5	39.5	13.5	43	23.5	46	30
	6 valves	90	81.8							17	56			
	8 valves	110	101.8							27	56			
CPV14	4 valves	96	86	78	89	58.8	20	9.5	61.8	20	56	23.5	46	30
	6 valves	124	114							34				
	8 valves	152	142							48				

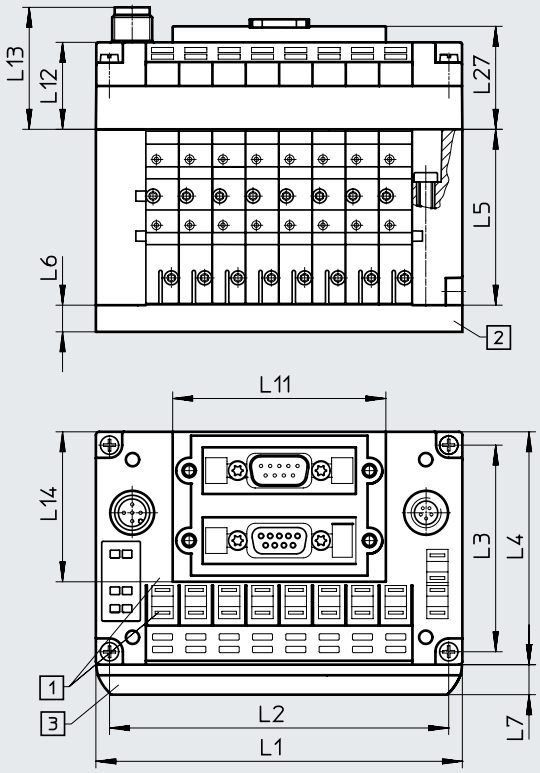
Valve terminal with I-Port interface/IO-Link

		L1	L2	L3	L4	L5	L6	L7	L27	L28	L29	L30
CPV10	8 valves	110	101.8	62	71	52.8	15	9.5	26.2	38.3	32	30.2
CPV14	8 valves	152	142	78	89	58.8	20	9.5	26.2	38.3	32.4	56.5

Data sheet

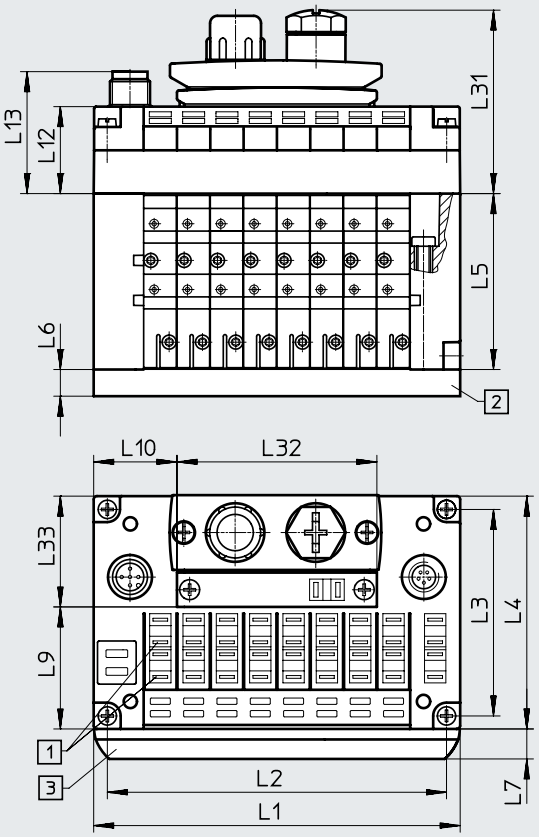
Dimensions Download CAD data ➔ www.festo.com

Valve terminal with Fieldbus Direct – CPV10/14/18
INTERBUS



[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)

Valve terminal with Fieldbus Direct – CPV10/14/18
DeviceNet, CANopen, CC-Link



[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)

		L1	L2	L3	L4	L5	L6	L7	L9
CPV10	8 valves	110	101.8	62	71	52.8	15	9.5	35.8
CPV14	8 valves	152	142	78	89	58.8	20		52.8
CPV18	8 valves	204	193.5	106.5	118	73	20		79.8

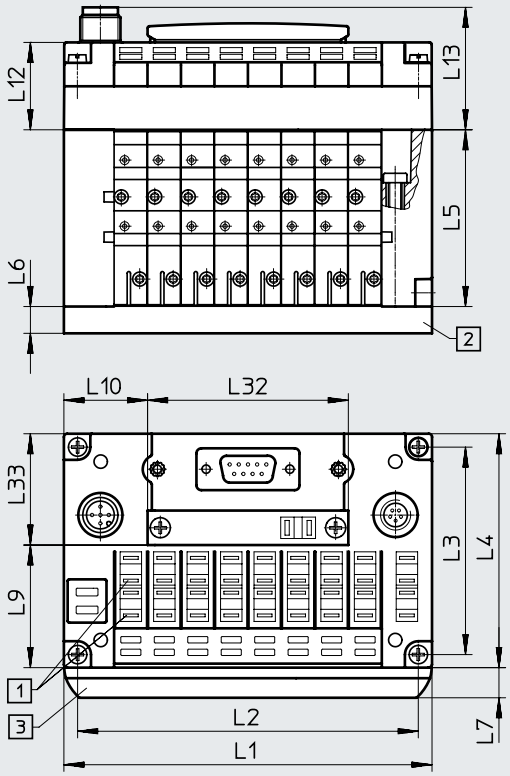
		L10	L11	L12	L13	L14	L27	L31	L32	L33
CPV10	8 valves	25	64	26.2	36.7	45	30.9	55.1	60	34.6
CPV14	8 valves	46		26.2	36.7		30.9	55.1		34.6
CPV18	8 valves	72		31.2	41.7		35.9	59.6		36.6

Data sheet

Dimensions Download CAD data ➔ www.festo.com

Valve terminal with Fieldbus Direct – CPV10/14/18

PROFIBUS DP including Festo fieldbus, ABB CS31, Moeller Suconet K



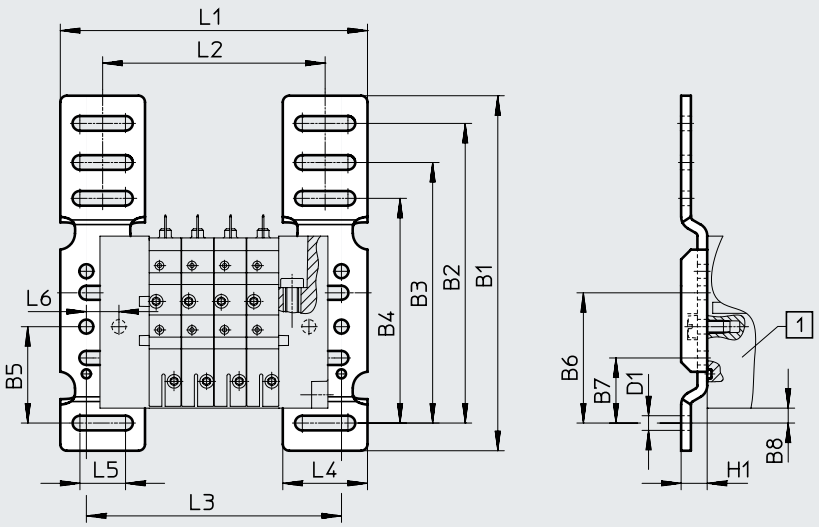
[1] Slots for inscription labels
[2] Pneumatic multiple connector plate
[3] Holder for inscription labels (CPV10/14/18-VI-BZ-T-... or CPV10/14/18-VI-ST-T-...)

		L1	L2	L3	L4	L5	L6	L7	L9	L10	L12	L13	L32	L33
CPV10	8 valves	110	101.8	62	71	52.8	15	9.5	35.5	25	26.2	36.7	60	34.6
CPV14	8 valves	152	142	78	89	58.8	20		52.8	46	26.2	36.7		34.6
CPV18	8 valves	204	193.5	106.5	118	73	20		79.8	72	31.2	41.7		36.6

Data sheet

Dimensions Download CAD data ➔ www.festo.com

Wall mounting CPV10/14-VI-BG-RWL-B for CPV10/14

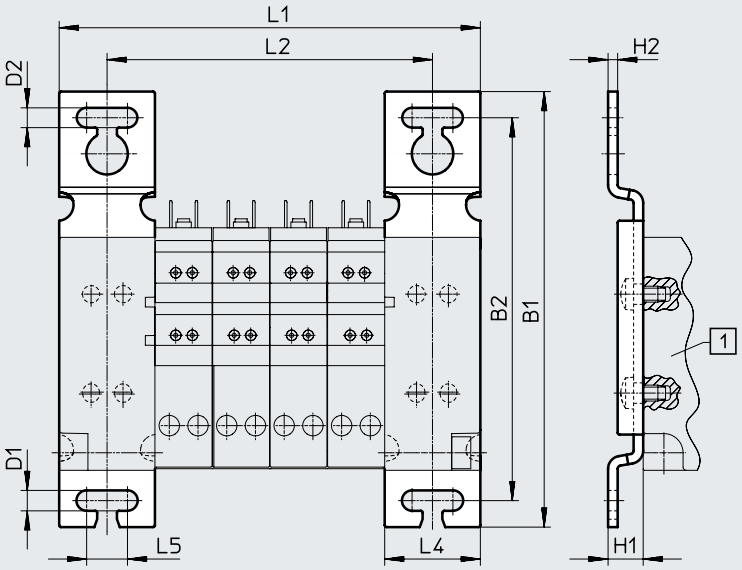


[1] Valve terminal CPV-...

	CPV10							CPV14						
	2 valves	3 valves	4 valves	5 valves	6 valves	7 valves	8 valves	2 valves	3 valves	4 valves	5 valves	6 valves	7 valves	8 valves
L1	74	84	94	104	114	124	134	90	104	118	132	146	160	174
L2	48	58	68	78	88	98	108	64	78	92	106	120	134	148
L3	58	68	78	88	98	108	118	74	88	102	116	130	144	158

	B1	B2	B3	B4	B5	B6	B7	B8	D1	H1	L4	L5	L6
CPV10	109	92	80	69	29.6	40	20	4.6	4.5	8	26	14	10
CPV14													

Wall mounting CPV18-VI-BG-RW for CPV18



[1] Valve terminal CPV-...

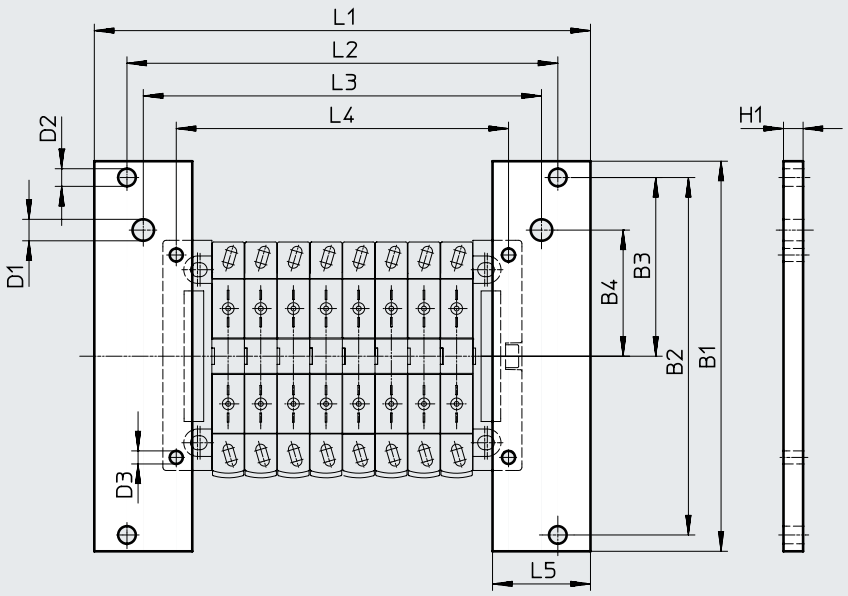
	CPV18						
	2 valves	3 valves	4 valves	5 valves	6 valves	7 valves	8 valves
L1	96	114	132	150	168	186	204
L2	66	84	102	120	138	156	174

	B1	B2	D1	D2	H1	H2	L4	L5
CPV18	136.5	120	6.4	6.2	11	3	30	12.8

Data sheet

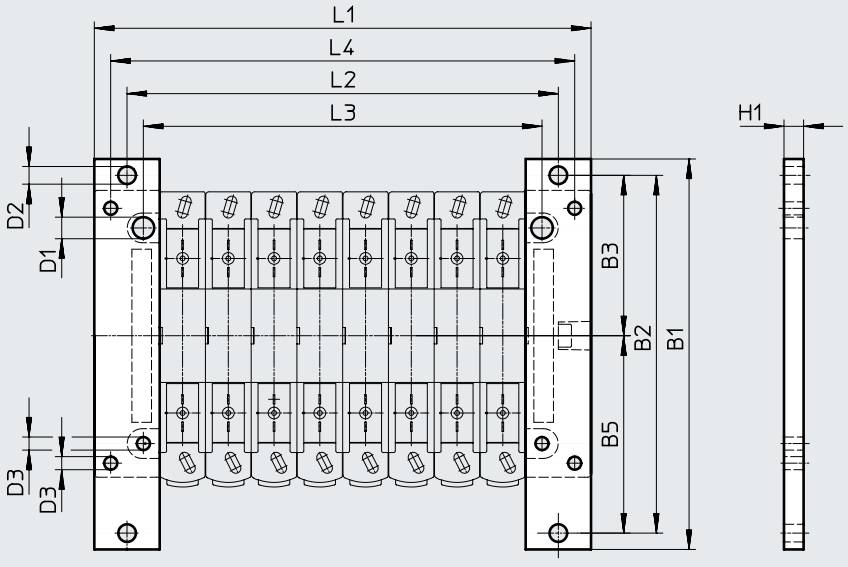
Dimensions Download CAD data ➔ www.festo.com

Mounting CPV10-VI-BG-ET200X for individual connection and ET200X



	B1	B2	B3	B4	D1	D2	D3	H1	L1	L2	L3	L4	L5
CPV10	119.5	109.5	54.8	38.7	6.6	5.4	4	6	152	132	122	101.8	30

Mounting CPV14-VI-BG-ET200X for individual connection and ET200X

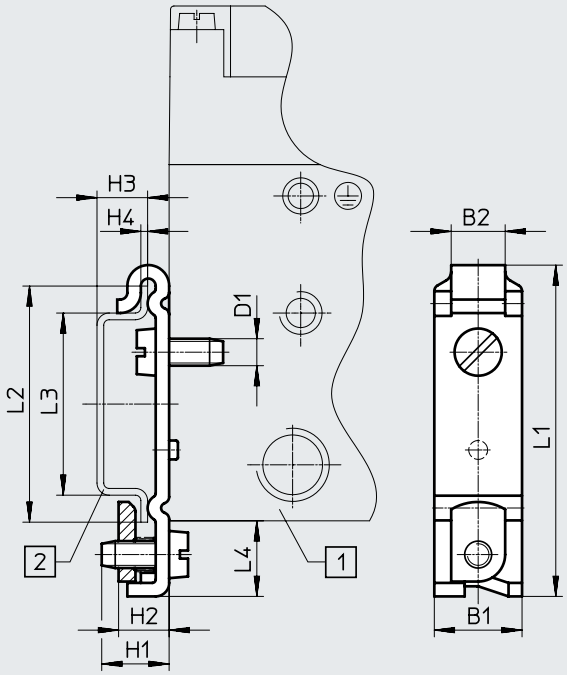


	B1	B2	B3	B5	D1	D2	D3	H1	L1	L2	L3	L4
CPV14	119.5	109.5	49.1	60.4	6.6	5.4	4	6	152	132	122	142

Data sheet

Dimensions Download CAD data ➔ www.festo.com

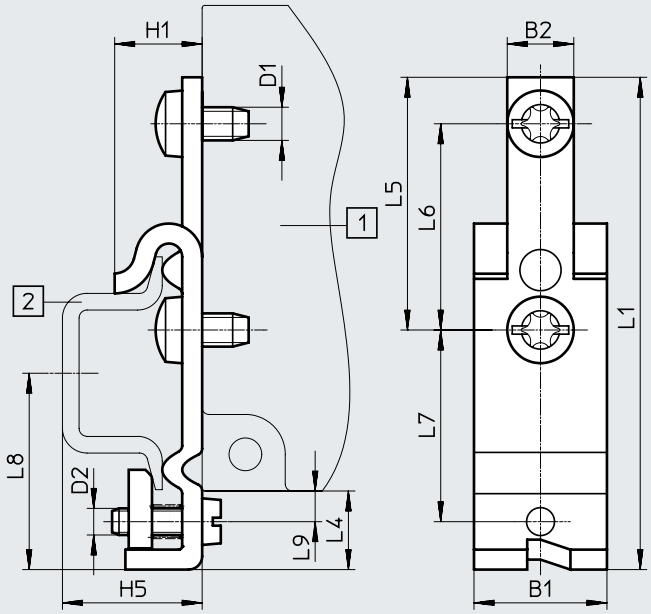
Attachment for H-rail mounting CPV10/14-VI-BG-NRH-35



[1] Valve terminal CPV10/14
[2] H-rail to EN 60715

	B1 ±0.1	B2	D1	H1	H2	H3 −0.1	H4 ±0.1	L1	L2 ±0.1	L3 ±0.1	L4
CPV10/14	13	8	M4	10	7.5	7.5	1	49.1	35	27	11.2

Attachment for H-rail mounting CPV18-VI-BG-NRH-35



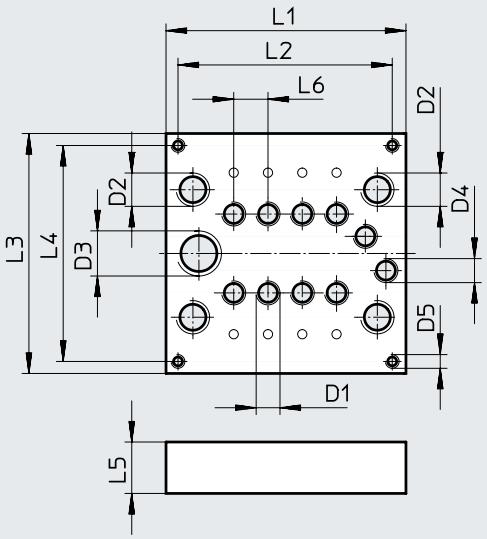
[1] Valve terminal CPV18
[2] H-rail to EN 60715

	B1	B2	D1	D2	H1	H5	L1	L4	L5	L6	L7	L8	L9
CPV18	20	10	M5	M4	13.1	21	74	11.8	38	31	28.8	29.5	4.6

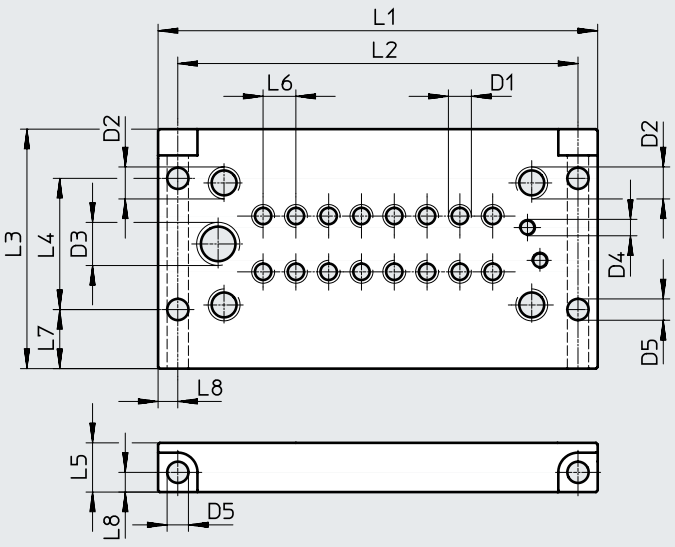
Data sheet

Dimensions Download CAD data ➔ www.festo.com

Pneumatic multiple connector plate – CPV10/14/18



Pneumatic multiple connector plate with flange – CPV10/14/18



Multi-pin

		L1	L2	L3	L4	L5	L6	D1	D2	D3	D4	D5
CPV10	2 valves	49.5	42.5	70	63	15	10	M7	G1/8	G1/4	M7	M4
	4 valves	69.5	62.5									
	6 valves	89.5	,82.5									
	8 valves	109.5	102.5									
CPV14	2 valves	67.5	53.5	86.6	76.6	20	14	G1/8	G1/4	G3/8	G1/8	M4
	4 valves	95.5	81.5									
	6 valves	123.5	109.5									
	8 valves	151.5	137.5									
CPV18	2 valves	95.5	87.5	119.6	108	20	18	G1/4	G3/8	G1/2	G1/4	M5
	4 valves	131	123									
	6 valves	167	159									
	8 valves	203	195									

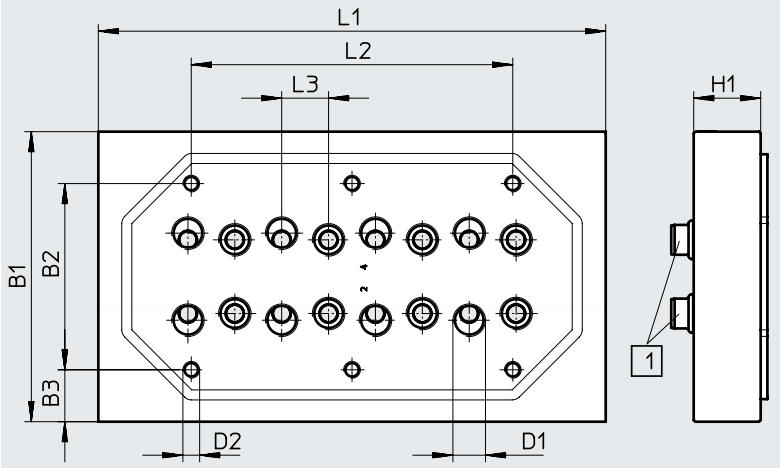
Multiple connector plate with flange

		L1	L2	L3	L4	L5	L6	L7	L8	D1	D2	D3	D4	D5
CPV10	2 valves	74	62	73	40	15	10	18	6	M7	G1/8	G1/4	M5	6.5
	4 valves	94	82											
	6 valves	114	102											
	8 valves	134	122											
CPV14	2 valves	92	80	89	59	20	14	18	6	G1/8	G1/4	G3/8	G1/8	6.5
	4 valves	120	108											
	6 valves	148	136											
	8 valves	176	164											
CPV18	2 valves	119	107	118	88	20	18	18	6	G1/4	G3/8	G1/2	G1/4	6.5
	4 valves	155	143											
	6 valves	191	179											
	8 valves	227	215											

Data sheet

Dimensions Download CAD data ➔ www.festo.com

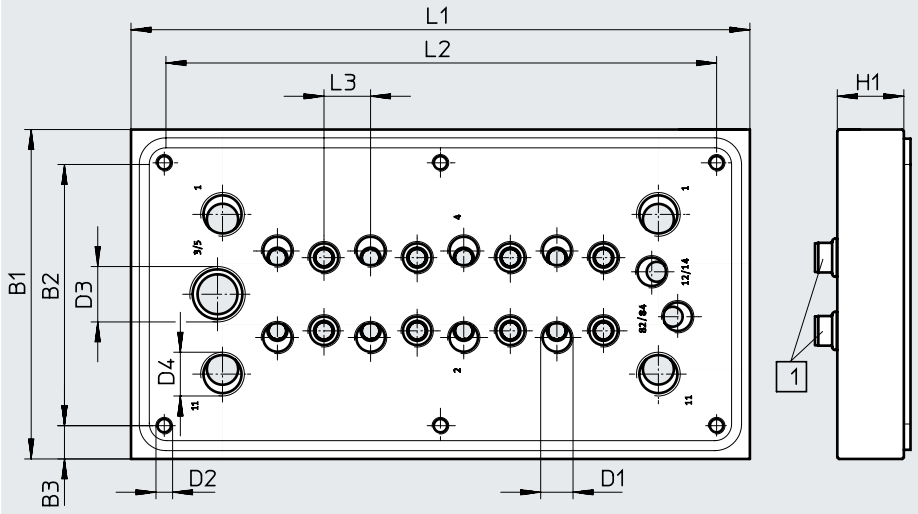
Pneumatic multiple connector plate for control cabinet installation, without supply ports – CPV10/14



[1] Seal

		L1	L2	L3	B1	B2	B3	D1	D2	H1
CPV10	2 valves	49.5	–	10	70	40	15	M7	M5	15
	4 valves	69.5	28							
	6 valves	89.5	49							
	8 valves	109.5	68							
CPV14	2 valves	67.5	13	14	86.6	55.6	15.5	G1/8	M5	20
	4 valves	95.5	40							
	6 valves	123.5	68							
	8 valves	151.5	96							

Pneumatic multiple connector plate for control cabinet installation, with supply ports – CPV10/14



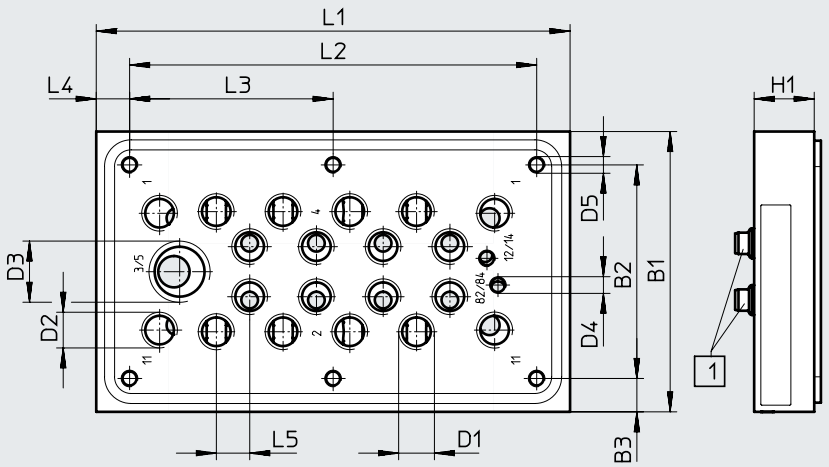
[1] Seal

		L1	L2	L3	B1	B2	B3	D1	D2	D3	D4	H1
CPV10	2 valves	82	62	10	84	64	10	M7	M5	G1/4	G1/8	15
	4 valves	102	82									
	6 valves	122	102									
	8 valves	142	122									
CPV14	2 valves	102	82	14	99	79	10	G1/8	M5	G3/8	G1/4	20
	4 valves	130	110									
	6 valves	158	138									
	8 valves	186	166									

Data sheet

Dimensions Download CAD data ➔ www.festo.com

Pneumatic multiple connector plate for control cabinet installation, with all ports – CPV10



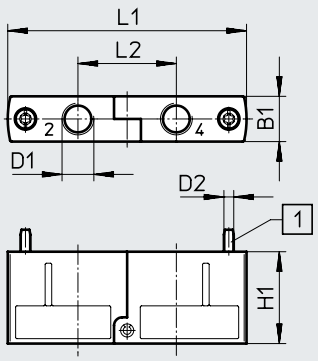
[1] Seal

		L1	L2	L3	L4	L5	B1	B2	B3	D1	D2	D3	D4	D5	H1
CPV10	2 valves	82	62	–	10	10	84	64	10	G1/8	G1/8	G3/8	M5	M5	18
	4 valves	102	82	45.55											
	6 valves	122	102	61											
	8 valves	142	122	61											

Data sheet

Dimensions Download CAD data ➔ www.festo.com

Valve kit for 5/3 function – CPV10/14

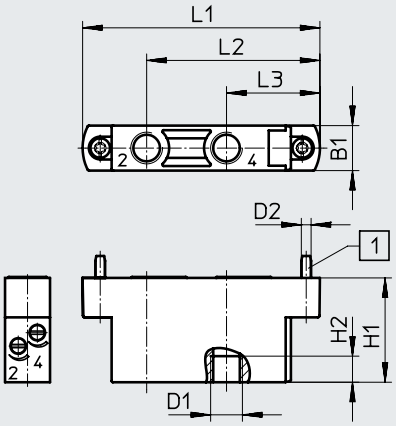


[1] Retaining screw enclosed separately

Type	B1	D1	D2	H1	L1	L2
CPV10-BS-5/3G-M7	9.9	M7	M2.5	22	55.8	23
CPV14-BS-5/3G-1/8	13.8	G1/8	M3	28	72.8	30

Additional one-way flow control valve function – CPV10/14

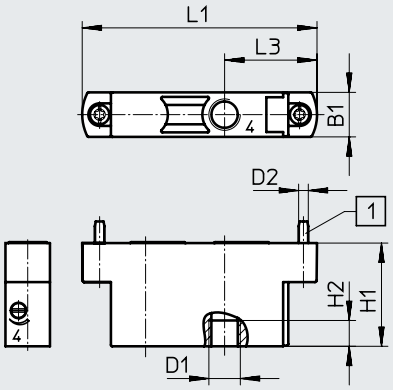
CPV10/14-...-BS-2xGR...-...



[1] Retaining screw enclosed separately

Additional one-way flow control valve function for vacuum – CPV10/14

CPV-...-BS-2xGRZ-V-...

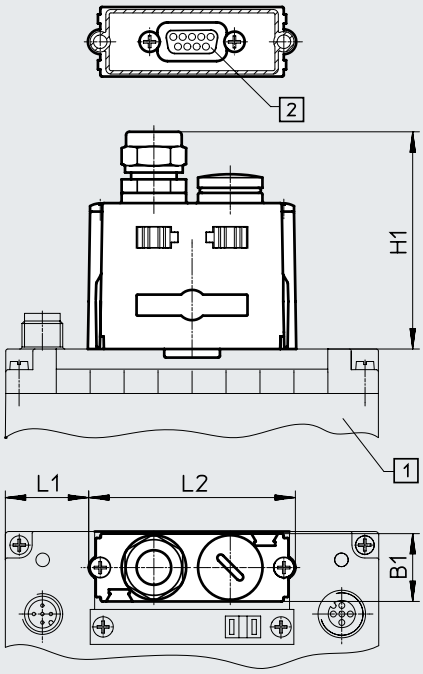


Type	B1	D1	D2	H1	H2	L1	L2	L3
CPV10-BS-2xGR...-M7	9.9	M7	M2.5	26	6	55.8	41.4	22.9
CPV10-BS-2xGRZ-V...-M7							–	
CPV14-BS-2xGR...-1/8	13.8	G1/8	M3	32	8	72.8	53.15	28.65
CPV14-BS-2xGRZ-V...-1/8							–	

Data sheet

Dimensions Download CAD data ➔ www.festo.com

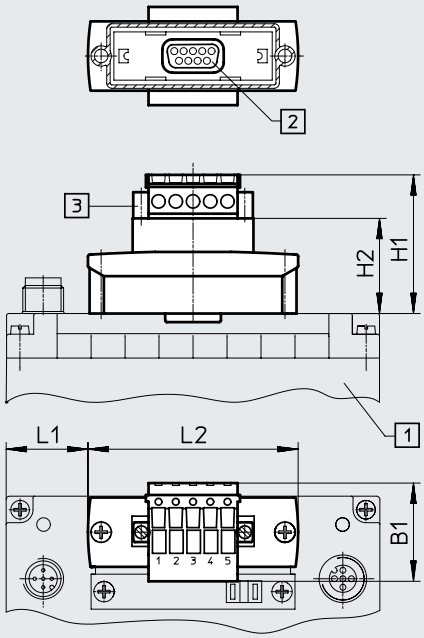
Fieldbus interface FBS-SUB-9-BU-2x4POL



[1] Valve terminal with Fieldbus Direct CPV10/14/18 and fieldbus node for DeviceNet and CANopen

[2] Sub-D socket, 9-pin

Fieldbus interface FBSD-KL-2x5POL



[1] Valve terminal with Fieldbus Direct CPV10/14/18 and fieldbus node for DeviceNet and CANopen

[2] Sub-D socket, 9-pin

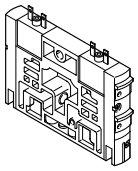
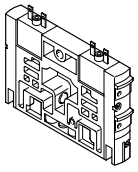
[3] Fieldbus interface FBSD-KL-2x5pol

FBS	CPV10 8 valves	CPV14 8 valves	CPV18 8 valves
B1	20	20	20
H1	64	64	64
H2	–	–	–
L1	24.5	45.5	71.5
L2	61	61	61

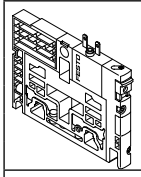
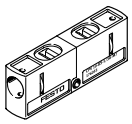
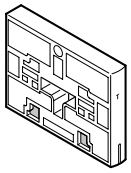
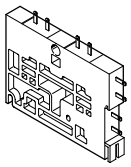
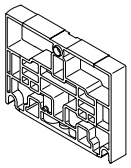
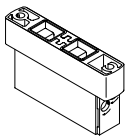
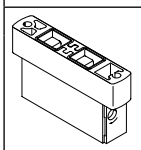
FBSD	CPV10 8 valves	CPV14 8 valves	CPV18 8 valves
B1	28.9	28.9	28.9
H1	41	41	41
H2	28	28	28
L1	24	45	71
L2	62	62	62

Accessories

Ordering data

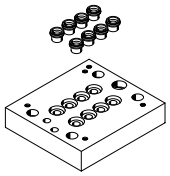
	Code	Valve function	Product weight [g]	Part no.	Type
Individual valve slice, size 10/14/18					
	M	5/2-way valve, single solenoid, piston spool valve	70	**161414**	**CPV10-M1H-5LS-M7**
			120	**161360**	**CPV14-M1H-5LS-1/8**
			260	**163190**	**CPV18-M1H-5LS-1/4**
	F	5/2-way valve, single solenoid, fast switching, piston spool valve	70	**187439**	**CPV10-M11H-5LS-M7**
	J	5/2-way valve, double solenoid, piston spool valve	70	**161415**	**CPV10-M1H-5JS-M7**
			120	**161361**	**CPV14-M1H-5JS-1/8**
			260	**163191**	**CPV18-M1H-5JS-1/4**
	N	2x 3/2-way valve, normally open, piston spool valve	70	**161417**	**CPV10-M1H-2x3-OLS-M7**
			120	**161363**	**CPV14-M1H-2x3-OLS-1/8**
			260	**163188**	**CPV18-M1H-2x3-OLS-1/4**
	C	2x 3/2-way valve, normally closed, piston spool valve	70	**161416**	**CPV10-M1H-2x3-GLS-M7**
			120	**161362**	**CPV14-M1H-2x3-GLS-1/8**
			260	**163189**	**CPV18-M1H-2x3-GLS-1/4**
	CY	2x 3/2-way valve, normally closed, integrated back pressure protection, piston spool valve	70	**553260**	**CPV10-M1H-2x3-GLS-Y-M7**
	H	2x 3/2-way valve, 1x normally open, 1x normally closed, piston spool valve	70	**176064**	**CPV10-M1H-30LS-3GLS-M7**
			120	**176067**	**CPV14-M1H-30LS-3GLS-1/8**
			260	**176070**	**CPV18-M1H-30LS-3GLS-1/4**
	G	5/3-way valve, mid-position closed, piston spool valve	260	**176061**	**CPV18-M1H-5/3GS-1/4**
	D	2x 2/2-way valve, normally closed, piston spool valve	70	**185880**	**CPV10-M1H-2x2-GLS-M7**
			120	**185883**	**CPV14-M1H-2x2-GLS-1/8**
			260	**185886**	**CPV18-M1H-2x2-GLS-1/4**
	I	2x 2/2-way valve, 1x normally open, 1x normally closed, piston spool valve	70	**187843**	**CPV10-M1H-2OLS-2GLS-M7**
			120	**187846**	**CPV14-M1H-2OLS-2GLS-1/8**
			260	**187849**	**CPV18-M1H-2OLS-2GLS-1/4**
Individual sub-base valve with duct separation 1, 11 sizes 10/14					
	MK	5/2-way valve (with duct separation 1, 11), single solenoid, piston spool valve	70	**553256**	**CPV10-M1H-5LS-K-M7**
			120	**553258**	**CPV14-M1H-5LS-K-1/8**
	JK	5/2-way valve (with duct separation 1, 11), double solenoid, piston spool valve	70	**559644**	**CPV10-M1H-5JS-K-M7**
			120	**559651**	**CPV14-M1H-5JS-K-1/8**
	NK	2x 3/2-way valve (with duct separation 1, 11), normally open, piston spool valve	70	**559641**	**CPV10-M1H-2x3-OLS-K-M7**
			120	**559648**	**CPV14-M1H-2x3-OLS-K-1/8**
	CK	2x 3/2-way valve (with duct separation 1, 11) normally closed, piston spool valve	70	**553257**	**CPV10-M1H-2x3-GLS-K-M7**
			120	**553259**	**CPV14-M1H-2x3-GLS-K-1/8**
	COG	2x 3/2-way valve (with duct separation 1, 11), 1x normally open, 1x normally closed, piston spool valve	70	**559642**	**CPV10-M1H-30LS-3GLS-K-M7**
			120	**559649**	**CPV14-M1H-30LS-3GLS-K-1/8**
	DK	2x 2/2-way valve (with duct separation 1, 11) normally closed, piston spool valve	70	**559645**	**CPV10-M1H-2x2-GLS-K-M7**
			120	**559652**	**CPV14-M1H-2x2-GLS-K-1/8**
	IK	2x 2/2-way valve (with duct separation 1, 11), 1x normally open, 1x normally closed, piston spool valve	70	**559646**	**CPV10-M1H-2OLS-2GLS-K-M7**
			120	**559653**	**CPV14-M1H-2OLS-2GLS-K-1/8**

Accessories

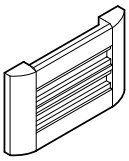
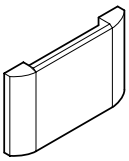
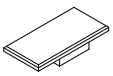
Ordering data	Code	Designation	Product weight [g]	Part no.	Type
Vacuum generator					
	A	Vacuum generator	25	**185862**	**CPV10-M1H-V70-M7**
			98	**185868**	**CPV14-M1H-V95-1/8**
			227	**185874**	**CPV18-M1H-V140-1/4**
	E	Vacuum generator with ejector pulse	25	**185865**	**CPV10-M1H-VI70-2GLS-M7**
			114	**185871**	**CPV14-M1H-VI95-2GLS-1/8**
			264	**185877**	**CPV18-M1H-VI140-2GLS-1/4**
Function block					
	G	Valve kit for 5/3-way valve function, closed (in combination with valve slice C) for size 10 and 14	23	**176055**	**CPV10-BS-5/3G-M7**
			190	**176057**	**CPV14-BS-5/3G-1/8**
Separator plates					
	T	Separator plate, duct 1/11 closed	25	**161369**	**CPV10-DZP**
			–	**162551**	**CPV14-DZP**
			25	**163282**	**CPV18-DZP**
	S	Separator plate, duct 1/11, 3/5 closed	25	**178678**	**CPV10-DZPR**
				178680	**CPV14-DZPR**
				184543	**CPV18-DZPR**
Relay plate					
	R	Relay plate	51	**174478**	**CPV10-RP2**
			78	**174480**	**CPV14-RP2**
Blanking plate					
	L	Blanking plate	25	**161368**	**CPV10-RZP**
				162550	**CPV14-RZP**
				163283	**CPV18-RZP**
Additional functions for valve positions					
	P	One-way flow control valve, 2x supply air	30	**184140**	**CPV10-BS-2XGRZZ-M7**
			54	**184142**	**CPV14-BS-2XGRZZ-1/8**
	Q	One-way flow control valve, 2x exhaust air	30	**184141**	**CPV10-BS-2XGRAZ-M7**
			54	**184143**	**CPV14-BS-2XGRAZ-1/8**
	V	One-way flow control valve for vacuum	30	**185889**	**CPV10-BS-GRZ-V-M7**
			–	**185891**	**CPV14-BS-GRZ-V-1/8**

Accessories

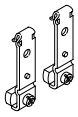
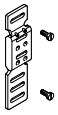
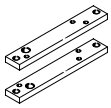
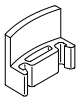
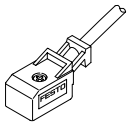
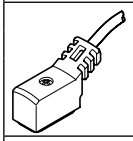
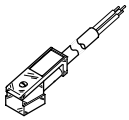
Ordering data

	Code	Designation		Product weight [g]	Part no.	Type
Pneumatic multiple connector plate						
	M	Pneumatic multiple connector plate, for wall/machine mounting, without side flange	2-valve	135	**161969**	**CPV10-VI-P2-M7**
			4-valve	164	**161970**	**CPV10-VI-P4-M7**
			6-valve	219	**161971**	**CPV10-VI-P6-M7**
			8-valve	272	**163893**	**CPV10-VI-P8-M7**
			2-valve	261	**163894**	**CPV14-VI-P2-1/8**
			4-valve	379	**163895**	**CPV14-VI-P4-1/8**
			6-valve	505	**163896**	**CPV14-VI-P6-1/8**
			8-valve	627	**163897**	**CPV14-VI-P8-1/8**
			2-valve	519	**165292**	**CPV18-VI-P2-1/4**
			4-valve	695	**165293**	**CPV18-VI-P4-1/4**
			6-valve	907	**165294**	**CPV18-VI-P6-1/4**
			8-valve	1116	**165295**	**CPV18-VI-P8-1/4**
	P	Pneumatic multiple connector plate, for wall/machine mounting, with side flange	2-valve	182	**152420**	**CPV10-VI-P2-M7-B**
			4-valve	228	**152421**	**CPV10-VI-P4-M7-B**
			6-valve	283	**152422**	**CPV10-VI-P6-M7-B**
			8-valve	336	**152423**	**CPV10-VI-P8-M7-B**
			2-valve	365	**152424**	**CPV14-VI-P2-1/8-B**
			4-valve	483	**152425**	**CPV14-VI-P4-1/8-B**
			6-valve	609	**152426**	**CPV14-VI-P6-1/8-B**
			8-valve	731	**152427**	**CPV14-VI-P8-1/8-B**
			2-valve	659	**175632**	**CPV18-VI-P2-1/4-B**
			4-valve	832	**175634**	**CPV18-VI-P4-1/4-B**
			6-valve	1047	**175636**	**CPV18-VI-P6-1/4-B**
			8-valve	1256	**175638**	**CPV18-VI-P8-1/4-B**
	GQC	Pneumatic multiple connector plate with sealing ring, for control cabinet assembly, with supply ports	2-valve	250	**538807**	**CPV10-VI-P2-M7-C**
			4-valve	320	**538808**	**CPV10-VI-P4-M7-C**
			6-valve	390	**538809**	**CPV10-VI-P6-M7-C**
			8-valve	460	**538810**	**CPV10-VI-P8-M7-C**
			2-valve	500	**539498**	**CPV14-VI-P2-1/8-C**
			4-valve	650	**539499**	**CPV14-VI-P4-1/8-C**
			6-valve	800	**539500**	**CPV14-VI-P6-1/8-C**
			8-valve	920	**539501**	**CPV14-VI-P8-1/8-C**
	GQD	Pneumatic multiple connector plate with sealing ring, for control cabinet assembly, without supply ports	2-valve	80	**538811**	**CPV10-VI-P2-M7-D**
			4-valve	150	**538812**	**CPV10-VI-P4-M7-D**
			6-valve	220	**538813**	**CPV10-VI-P6-M7-D**
			8-valve	290	**538814**	**CPV10-VI-P8-M7-D**
			2-valve	350	**539502**	**CPV14-VI-P2-1/8-D**
			4-valve	550	**539503**	**CPV14-VI-P4-1/8-D**
			6-valve	400	**539504**	**CPV14-VI-P6-1/8-D**
			8-valve	650	**539505**	**CPV14-VI-P8-1/8-D**
	GQE	Pneumatic multiple connector plate with sealing ring, for control cabinet assembly, with all ports	2-valve	300	**566709**	**CPV10-VI-P2-1/8-C**
			4-valve	370	**566710**	**CPV10-VI-P4-1/8-C**
			6-valve	440	**566711**	**CPV10-VI-P6-1/8-C**
			8-valve	510	**566712**	**CPV10-VI-P8-1/8-C**

Accessories

Ordering data	Code	Designation	Product weight [g]	Part no.	Type
Inscription label holders					
	Z	Holder for inscription labels	32	**162560**	**CPV10-VI-BZ-T-2**
			33	**162561**	**CPV10-VI-BZ-T-3**
			34	**162562**	**CPV10-VI-BZ-T-4**
			35	**162563**	**CPV10-VI-BZ-T-5**
			36	**162564**	**CPV10-VI-BZ-T-6**
			37	**162565**	**CPV10-VI-BZ-T-7**
			38	**162566**	**CPV10-VI-BZ-T-8**
			8	**162567**	**CPV14-VI-BZ-T-2**
			9.5	**162568**	**CPV14-VI-BZ-T-3**
			11	**162569**	**CPV14-VI-BZ-T-4**
			12.5	**162570**	**CPV14-VI-BZ-T-5**
			14	**162571**	**CPV14-VI-BZ-T-6**
			15.5	**162572**	**CPV14-VI-BZ-T-7**
			17	**162573**	**CPV14-VI-BZ-T-8**
			9	**163293**	**CPV18-VI-BZ-T-2**
			10.5	**163294**	**CPV18-VI-BZ-T-3**
			12	**163295**	**CPV18-VI-BZ-T-4**
			13.5	**163296**	**CPV18-VI-BZ-T-5**
			16	**163297**	**CPV18-VI-BZ-T-6**
			17.5	**163298**	**CPV18-VI-BZ-T-7**
			29	**163299**	**CPV18-VI-BZ-T-8**
	T	Holder for inscription labels, transparent	11	**194066**	**CPV10-VI-ST-T-2**
			14	**194067**	**CPV10-VI-ST-T-3**
			17	**194068**	**CPV10-VI-ST-T-4**
			20	**194069**	**CPV10-VI-ST-T-5**
			23	**194070**	**CPV10-VI-ST-T-6**
			24	**194071**	**CPV10-VI-ST-T-7**
			29	**194072**	**CPV10-VI-ST-T-8**
			–	**194073**	**CPV14-VI-ST-T-2**
			18	**194074**	**CPV14-VI-ST-T-3**
			22	**194075**	**CPV14-VI-ST-T-4**
			25	**194076**	**CPV14-VI-ST-T-5**
			53	**194077**	**CPV14-VI-ST-T-6**
			59	**194078**	**CPV14-VI-ST-T-7**
			63	**194079**	**CPV14-VI-ST-T-8**
			17	**194080**	**CPV18-VI-ST-T-2**
			23	**194081**	**CPV18-VI-ST-T-3**
			29	**194082**	**CPV18-VI-ST-T-4**
			35	**194083**	**CPV18-VI-ST-T-5**
			41	**194084**	**CPV18-VI-ST-T-6**
			47	**194085**	**CPV18-VI-ST-T-7**
			53	**194086**	**CPV18-VI-ST-T-8**
Inscription labels					
	–	6x10 mm in frame, 64 pieces	–	**18576**	**IBS 6x10**
		9x20 mm in frames, 20 pieces (CPV18 only)	–	**18182**	**IBS 9x20**

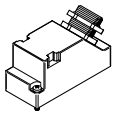
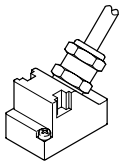
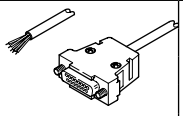
Accessories

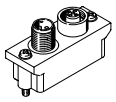
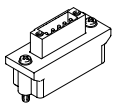
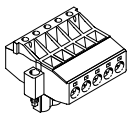
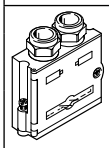
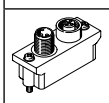
Ordering data	Code	Designation		Product weight [g]	Part no.	Type
Mounting						
	H	Mounting for H-rail		15.8	**162556**	**CPV10/14-VI-BG-NRH-35**
				50	**163291**	**CPV18-VI-BG-NRH-35**
	W	Attachment for wall mounting	For CPV18	200	**163292**	**CPV18-VI-BG-RW**
	U		For CPV10/14	118	**189541**	**CPV10/14-VI-BG-RWL-B**
	X	Mounting for individual connection and ET200X (included in the scope of delivery)		216	**165801**	**CPV10-VI-BG-ET200X**
				326	**165803**	**CPV14-VI-BG-ET200X**
Manual override						
	–	Locking clip (for manual override), non-detachable		1.5	**526203**	**CPV10/14-HS**
				3	**526204**	**CPV18-HS**
	V	Locking clip (cover for manual override), non-detachable		0.15	**530055**	**CPV10/14-HV**
				0.53	**530056**	**CPV18-HV**
Connecting cable						
	K	For relay plate	2.5 m	49	**165612**	**KRP-1-24-2.5**
	L		5 m	94	**165613**	**KRP-1-24-5**
Connecting cable for individual connection, electrical						
	D	Angled socket, plug pattern ZC, self-tapping screw, for CPV10/14	2.5 m	50	**8047676**	**NEBV-Z3WA2L-R-E-2.5-N-LE2-S1**
	E		5 m	90	**8047677**	**NEBV-Z3WA2L-R-E-5-N-LE2-S1**
	F		10 m	170	**8047675**	**NEBV-Z3WA2L-R-E-10-N-LE2-S1**
Plug socket with cable for individual connection, electrical						
	D	For CPV18	2.5 m	200	**174844**	**KMEB-2-24-2.5-LED**
	E		5 m	400	**174845**	**KMEB-2-24-5-LED**

Note

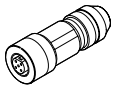
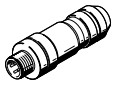
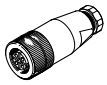
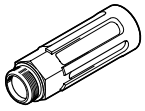
Connecting cables are pre-assembled. They include a protective circuit and an LED indicating the operating status.

Accessories

Ordering data	Code	Designation			Product weight [g]	Part no.	Type
Multi-pin cable							
	Y	Plug socket (Sub-D plug can be crimped), for assembly by the user	9-pin		73	**18708**	**SD-SUB-D-BU9**
			25-pin		75	**18709**	**SD-SUB-D-BU25**
	R	Connecting cable, IP65, polyvinyl chloride	9-pin	5 m	425	**18698**	**KMP3-9P-08-5**
			25-pin		672	**18624**	**KMP3-25P-16-5**
	S		9-pin	10 m	814	**18579**	**KMP3-9P-08-10**
			25-pin		1303	**18625**	**KMP3-25P-16-10**
	–	Connecting cable, IP65, polyurethane (suitable for energy chains)	9-pin	5 m	378	**193014**	**KMP4-9P-5-PUR**
			25-pin		702	**193018**	**KMP4-25P-5-PUR**
	–		9-pin	10 m	723	**193015**	**KMP4-9P-10-PUR**
			25-pin		1617	**193019**	**KMP4-25P-10-PUR**
	–	Connecting cable, IP65, polyvinyl chloride (suitable for energy chains)	9-pin	5 m	413	**193012**	**KMP4-9P-5-PVC**
			25-pin		854	**193016**	**KMP4-25P-5-PVC**
			9-pin	10 m	791	**193013**	**KMP4-9P-10-PVC**
			25-pin		1657	**193017**	**KMP4-25P-10-PVC**
	–	Connecting cable, IP40, polyvinyl chloride For CPV10/14/18 only	9-pin	2.5 m	248	**531184**	**KMP6-09P-8-2.5**
			25-pin		432	**530046**	**KMP6-25P-20-2.5**
			9-pin	5 m	454	**531185**	**KMP6-09P-8-5**
			25-pin		814	**530047**	**KMP6-25P-20-5**
			9-pin	10 m	864	**531186**	**KMP6-09P-8-10**
			25-pin		1600	**530048**	**KMP6-25P-20-10**
	–	Threaded sleeve for multi-pin cable KMP6, IP40	–	–	–	**572608**	**NEAU-TA-M35-U4**

Ordering data	Code	Designation	Product weight [g]	Part no.	Type
Fieldbus interface for Fieldbus Direct					
	GA	Straight socket, Sub-D 9-pin for DeviceNet/CANopen, plug/socket M12 5-pin, IP65	28	**525632**	**FBA-2-M12-5POL**
	GB	Straight socket, Sub-D 9-pin for DeviceNet/CANopen, plug 5-pin, IP40	26	**525634**	**FBA-1-SL-5POL**
		Angled socket 5-pin for DeviceNet/CANopen, screw terminal 5-pin, IP20	20	**525635**	**FBSD-KL-2x5POL**
	GE	Sub-D plug, IP65, 9-pin for PROFIBUS DP	60	**532216**	**FBS-SUB-9-GS-DP-B**
	GI	9-pin socket, Sub-D for INTERBUS node CPX and CPV	60	**532218**	**FBS-SUB-9-BU-IB-B**
		9-pin plug, Sub-D for INTERBUS node CPX and CPV	60	**532217**	**FBS-SUB-9-GS-IB-B**
	GM	9-pin plug, Sub-D, for CC-Link CPX and CPV, IP65	60	**532220**	**FBS-SUB-9-GS-2x4POL-B**
	GF	Bus connection 2x M12 adapter (B-coded, ReverseKey) for PROFIBUS DP	80	**533118**	**FBA-2-M12-5POL-RK**

Accessories

Ordering data	Code	Designation		Product weight [g]	Part no.	Type
Fieldbus interface for Fieldbus Direct						
	–	Socket M12x1, 5-pin, straight, for assembly by the user of a connecting cable for FBA-2-M12-5POL-RK		–	**1067905**	**NECU-M-B12G5-C2-PB**
	–	Plug M12x1, 5-pin, straight, for assembly by the user of a connecting cable for FBA-2-M12-5POL-RK		–	**1066354**	**NECU-M-S-B12G5-C2-PB**
Operating voltage connection for Fieldbus Direct						
	Straight socket		M12, 4-pin, PG7, IP67	13	**18494**	**SIE-GD**
			M12, 4-pin, PG9, IP67	29	**18495**	**FBSD-GD-9**
	Angled plug socket		M12, 4-pin, IP67	13	**12956**	**SIE-WD-TR**
			M12, 4-pin, PG9, IP67	30	**18525**	**FBSD-WD-9**
Blanking plug						
	Blanking plug			1	**3843**	**B-M5**
				2	**174309**	**B-M7**
				7	**3568**	**B-1/8**
				15	**3569**	**B-1/4**
				23	**3570**	**B-3/8**
				43	**3571**	**B-1/2**
Push-in fitting						
	Push-in fitting			8.8	**153015**	**QS-1/8-8-I**
				20	**153018**	**QS-1/4-10-I**
				31	**153020**	**QS-3/8-12-I**
				4.4	**153317**	**QSM-M5-6-I**
				6.4	**153321**	**QSM-M7-6-I**
Silencer						
	Silencer			1.5	**1205858**	**AMTE-M-LH-M5**
				8	**6841**	**U-1/8-B**
				17	**6842**	**U-1/4-B**
				37	**6843**	**U-3/8-B**
				75	**6844**	**U-1/2-B**
					161418	**UC-M7**
User documentation						
	CPV pneumatics manual		German	–	**165100**	**P.BE-CPV-DE**
			English		**165200**	**P.BE-CPV-EN**
			French		**165130**	**P.BE-CPV-FR**
			Italian		**165160**	**P.BE-CPV-IT**
			Spanish		**165230**	**P.BE-CPV-ES**