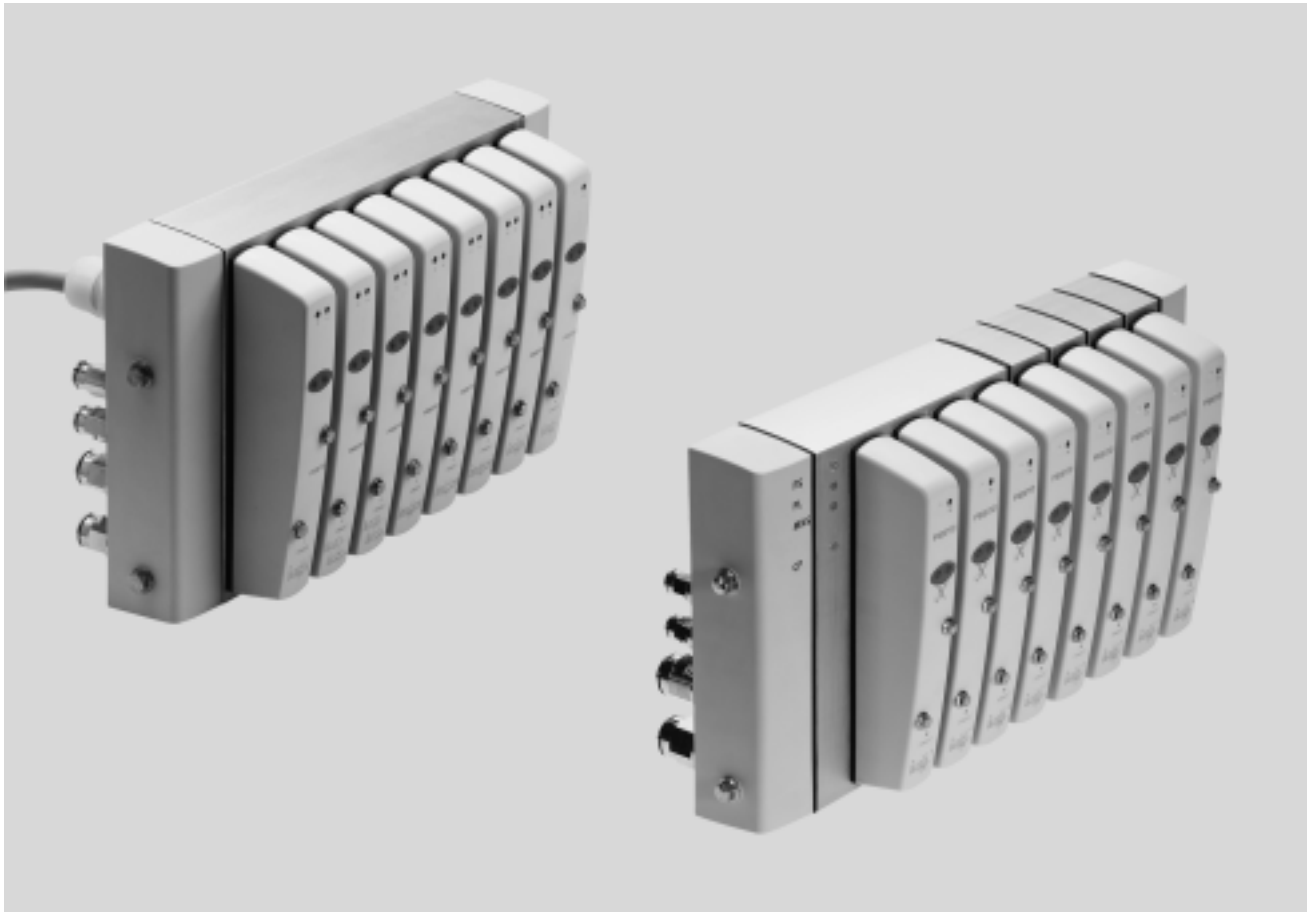
# Valve terminals CDVI, Clean Design

FESTO

# Valve terminals CDVI, Clean Design

Key features



**Innovative**

- Proven valve technology combined with a highly resistant polymer material
- Modular structure with 4 or 8-valve basic block
- Extension modules with 1 and 2 valve positions
- Extension modules with 1 and 2 valve positions with separate electrical (fieldbus only) and/or pneumatic additional supply
- Multi-pin plug connection
- Fieldbus connection
- Additional valve terminals and I/O modules can be connected via a CP string extension.
  Additional information
  ➔ Internet: ctec

**Versatile**

- 4 ... 16 valve positions
- Max. 24 solenoid coils
- Standardised from the individual valve up to multi-pin plug and fieldbus connections
- Flow rates from 300 ... 650 l/min
- Valve width 24 mm
- 1 ... 9 electrical voltage zones
- 1 ... 9 pneumatic pressure zones

**Reliable**

Developed with practical considerations in mind

- Hygienic
- Corrosion resistant
- Easy to clean

**Easy to mount**

As is the case with all Festo products, all CDVI and CDSV are fully pre-assembled and equipped according to customer requirements

- With push-in fittings on the working lines and end plates
- Tested for electrical and pneumatic functions

# Valve terminals CDVI, Clean Design

Key features

## CDVI – The requirements

The food industry has stricter hygiene requirements than any other sector. There can therefore be no compromise when it comes to easy cleaning and corrosion resistance.

Result: the CDVI.
Developed in close consultation with leading names from the food and packaging industry, the CDVI represents a totally new valve terminal solution for splash zones. The Clean Design valve terminal CDVI has a revolutionary corrosion-resistant and easy-to-clean design that makes it stand out from its competitors.

## CDVI – The solution

**The new Clean Design**
**Valve terminal CDVI – simply a neat solution**
Apart from reduced cleaning times, the CDVI also takes less time to install and assemble. Stainless steel control cabinets have become a thing of the past and the electrical connection is now established using the pre-fitted, ready to connect cable. The valve terminal is, of course, supplied fully assembled and in particular tested ex works to IP65, IP66, IP67 and NEMA 4.
This results in minimal installation time.
The valve terminal includes common supply ports and exhausts for all valves. The common lines are connected to the end plates.
The CDVI is available with four or eight valve positions in the basic designs and can optimally be extended up to 16 valve positions in grids of one or two, taking into consideration the maximum number of coils. Appropriate expansion blocks are used for this.

**Individual sub-base**
An individual sub-base for Clean Design valves (Clean Design Single Valve – CDSV) rounds off the lower end of the product range so that even upstream machines and system components can be incorporated into the Clean Design concept.

**Clean in theory and practice – the CDVI**
The requirements for the hygienic design of machine components to DIN EN 1672-2 and DIN ISO 14159 have been implemented in the CDVI. They are easy to clean thanks to:

- no sharp edges
- no small radii
- no crevices where dirt can gather
- space between the valves for easy cleaning
- corrosion-resistant materials

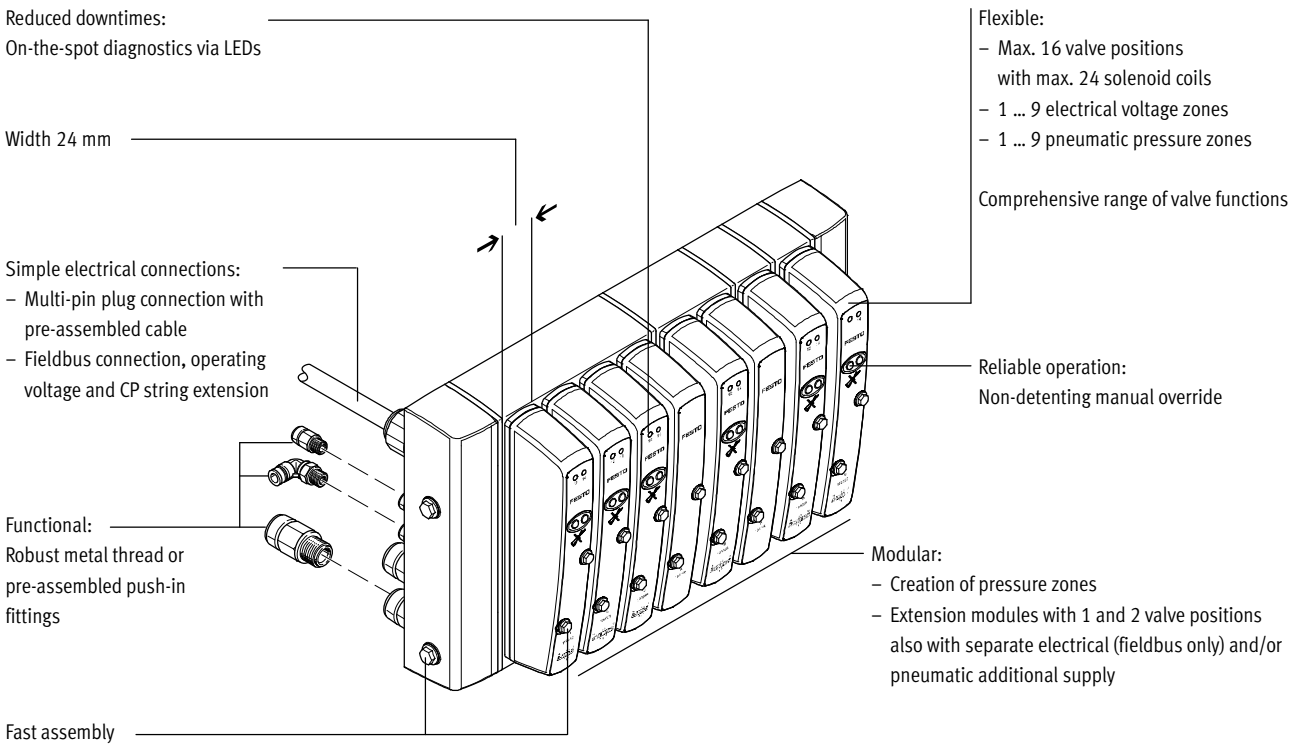
The CDVI can be cleaned using special cleaning agents that are compatible with aluminium, available from the following manufacturers

- Henkel
- Ecolab
- Johnson Diversy
- Kärcher

**Certified cleanliness**
The CDVI is certified to HACCP.

# Valve terminals CDVI, Clean Design

Key features




## Equipment options

### Valve functions

- 2/2-way valve, normally closed
- 2/2-way valve, normally open
- 3/2-way valve, normally closed
- 3/2-way valve, normally open
- 2x 3/2-way valve, normally closed
- 2x 3/2-way valve, normally open
- 2x 3/2-way valve, 1x normally open, 1x normally closed
- 5/2-way valve, single solenoid
- 5/2-way valve, double solenoid
- 5/3-way valve, mid-position closed
- 5/3-way valve, mid-position pressurised
- 5/3-way valve, mid-position exhausted

### Special features

**Individual valve**

- Electrical connection via multi-pin cable

**Multi-pin terminal**

- Max. 16 valve positions
- Max. 24 solenoid coils
- Compressed air supply possible via both end plates as well as power supply module
- 1 ... 9 pressure zones
- Detergent resistant PVC cable already assembled
- Cable length 5 m or 10 m

**Fieldbus terminal**

- Max. 16 valve positions
- Max. 24 solenoid coils
- Compressed air supply possible via both end plates as well as power supply module
- 1 ... 9 pressure zones
- 1 ... 9 voltage zones
- Enhanced diagnostic function
- Easy to clean connections at the rear

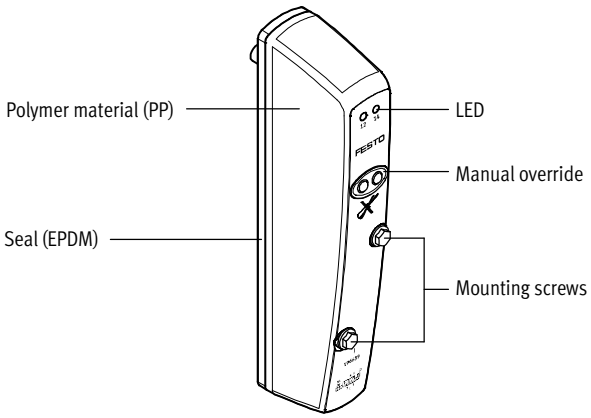
**CP string extension**

- Additional valve terminals or
- Electrical I/O modules.
  Additional information
  ➔ Internet: ctec

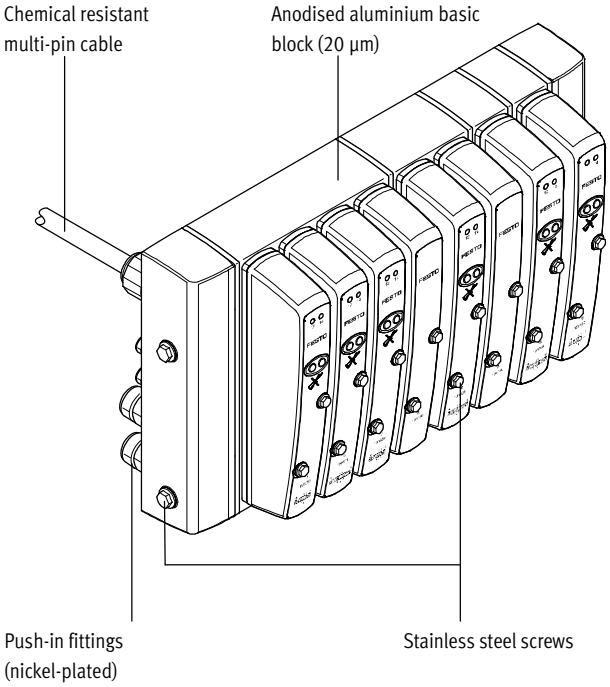
# Valve terminals CDVI, Clean Design

Key features

## The features




## The ideal range for the food industry




Choose from

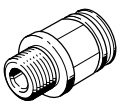
- a wide range comprising actuators to accessories in corrosion resistant designs that are easy to clean,
- as well as valves,
- stainless steel fittings and flow control valves and
- tubing approved for use in the food industry.

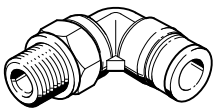
All have been tested using cleaning agents from leading manufacturers.

## The accessories

Tubing PLN

Push-in fitting NPQH





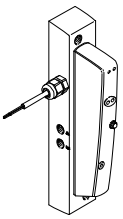
You should only use accessories that have been suggested by Festo. This is the only way of ensuring optimum performance from the CDVI in the following areas:

- Resilience
- Corrosion resistance class
- Ease of cleaning

# Valve terminals CDVI, Clean Design

Key features

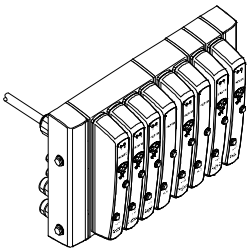
## Individual connection



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

The electrical connection is established via a 10 m pre-assembled PVC cable.

## Multi-pin plug connection

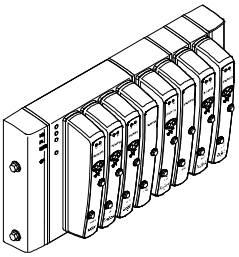


Control signals from the controller to the valve terminal are transmitted via a pre-assembled multi-wire cable or a self-assembly multi-pin plug connection, which substantially reduces installation time.

Valve terminals with multi-pin plug connections can be equipped with 4 to 16 valve positions with max. 24 solenoid coils.

Designs
- Multi-pin cable, 5 m long, pre-assembled with open wire ends
- Multi-pin cable, 10 m long, pre-assembled with open wire ends

## Fieldbus connection



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

Valve terminals with fieldbus interfaces can be equipped with 4 to 16 valve positions with max. 24 solenoid coils.

Designs
- DeviceNet connection 2x M12
- Ethernet Powerlink on request

- Note

The basic blocks of the valve terminals can be extended by a maximum of 8 valve positions. The extension modules used are of no relevance here.

# Valve terminals CDVI, Clean Design

Key features

## CP string extension

The optional string extension enables an additional valve terminal and I/O modules to be connected to Fieldbus Direct. A CP string of the CPI installation system is integrated in the fieldbus node as an extension. Different input and output modules as well as CPV and CPA valve terminals can be connected.

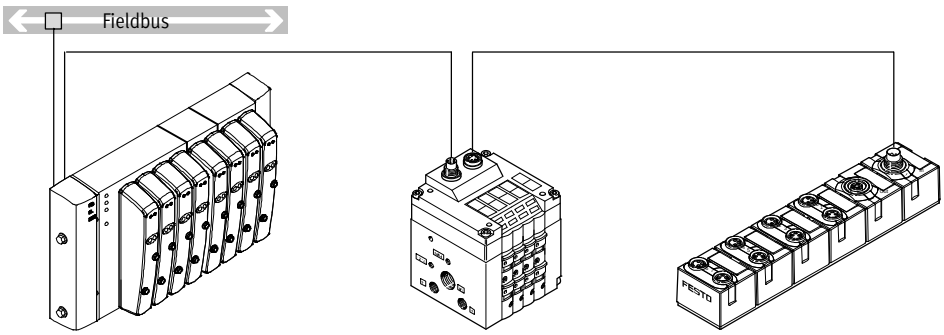
The maximum length of the CP string extension is 10 metres, which means that the extension modules can be mounted directly on-site. All of the required electrical signals are transmitted via the CP cable, which in turn means that no further installation is needed on the extension module.

The CP string interface offers:

- 16 input signals
- 16 output signals for output modules 24 V DC or solenoid coils
- Logic and sensor supply for the input modules
- Load voltage supply for the valve terminals
- Logic supply for the output module

Additional information

➔ Internet: ctec




Note

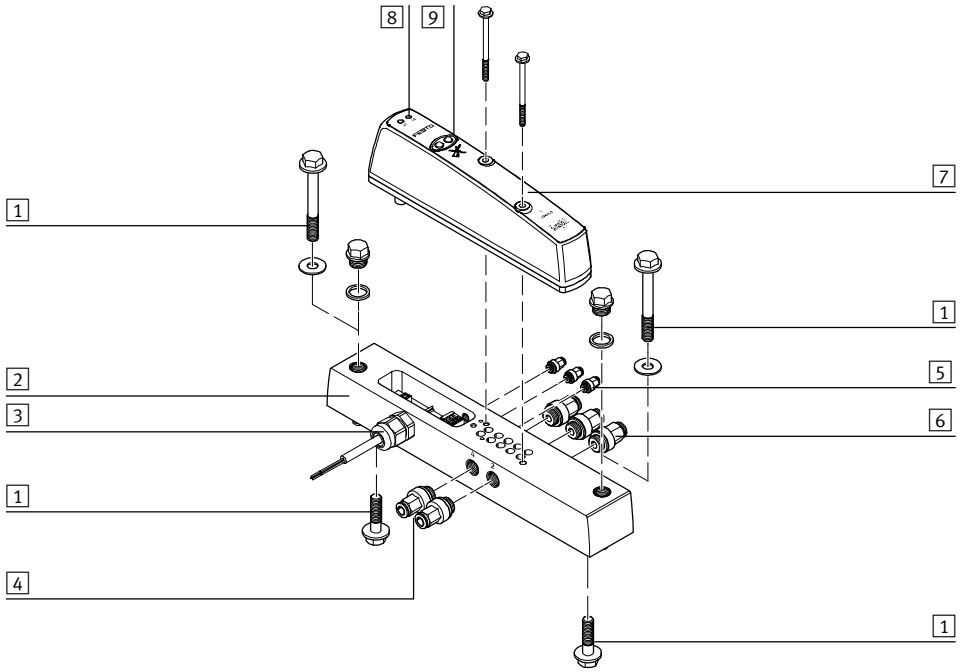
Valve terminals can be ordered quickly and easily online.
The convenient product configurator can be found on:
➔ Internet: cdvi

# Valve terminals CDVI, Clean Design

Peripherals overview

**Overview – Clean Design valve terminal**

Individual sub-base




| | | Brief description | ➔ Page/Internet |
|---|---|---|---|
| 1 | Mounting kit | Mounting from above or below | 35 |
| 2 | Sub-base for individual valve | – | 32 |
| 3 | Individual electrical connection | – | – |
| 4 | Push-in fitting | For working lines | 35 |
| 5 | Push-in fitting | For pilot air supply and venting, venting hole | 35 |
| 6 | Push-in fitting | For compressed air supply and venting | 35 |
| 7 | Valve | – | 32 |
| 8 | LED display | – | – |
| 9 | Manual override | For each solenoid coil, non-detenting | – |

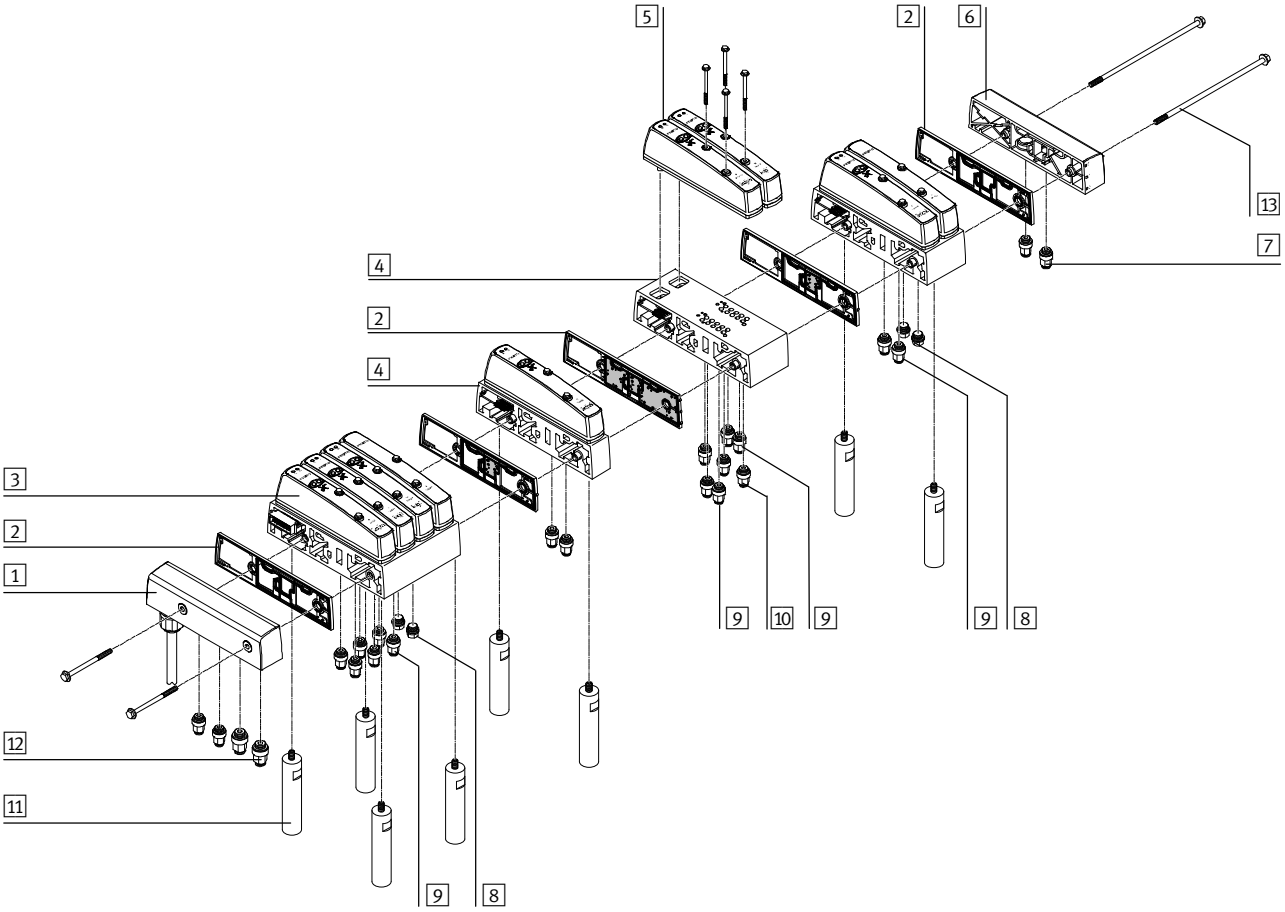
All valves on the valve terminal CDVI can be assembled on the individual sub-base CDSV. The individual sub-base CDSV has a connection for external pilot air supply, is pre-assembled with valve and 10 m PVC cable and is fully inspected before shipment.

Assembled push-in fittings included on request. A Clean Design mounting kit comprising two screws (18 mm and 40 mm) and two stainless steel blanking plugs permits mounting from above or below. If you have included fittings with your order, the pressure compensation hole is also equipped with a push-in fitting.
The collected exhaust air from the pilot solenoid coils of the valves is drawn off via the pressure compensation hole (venting hole) on the rear side.

Note

All ports and mounting holes that are not required must be sealed with a blanking plug.
Exception: venting hole

**Overview – Clean Design valve terminal**
Valve terminal with multi-pin plug connection




| | | Brief description | ➔ Page/Internet |
|---|---|---|---|
| 1 | Left-hand end plate | With multi-pin plug connection | 34 |
| 2 | Separator plate | – | 34 |
| 3 | 4/8-valve basic block | – | 33 |
| 4 | Extension module/power supply module | – | 33 |
| 5 | Valves | – | 32 |
| 6 | Right-hand end plate | – | 34 |
| 7 | Push-in fitting | For right-hand end plate | 35 |
| 8 | Blanking plug | – | 35 |
| 9 | Push-in fitting | For working lines | 35 |
| 10 | Push-in fitting | For power supply module | 35 |
| 11 | Spacer bolt | – | 35 |
| 12 | Push-in fitting | For left-hand end plate | 35 |
| 13 | Screw kit | For attaching the extension modules to the basic block | 35 |

The collected exhaust air from the pilot solenoid coils of the valves is drawn off via the pressure compensation hole (venting hole) on the rear side.

If you have included fittings with your order, the pressure compensation hole is also equipped with a push-in fitting.

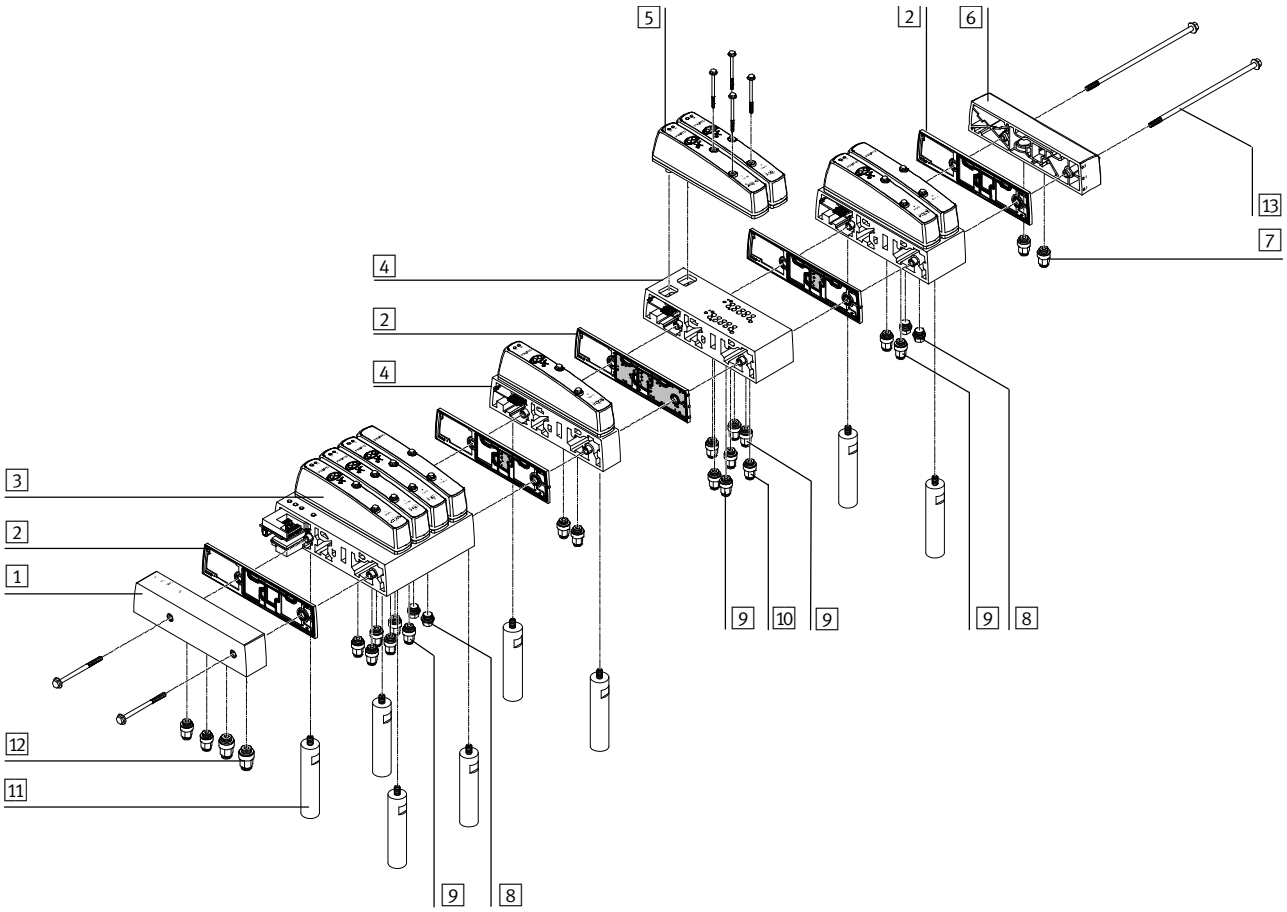
If extension modules are added to the valve terminal later, the appropriate screw kit must be ordered (page 35).

- Note

All ports and mounting holes that are not required must be sealed with a blanking plug.
Exception: venting hole

**Overview – Clean Design valve terminal**

Valve terminal with fieldbus connection




| | | Brief description | ➔ Page/Internet |
|---|---|---|---|
| 1 | Left-hand end plate | With fieldbus connection | 34 |
| 2 | Separator plate | – | 34 |
| 3 | 4/8-valve basic block | – | 33 |
| 4 | Extension module/power supply module | – | 33 |
| 5 | Valves | – | 32 |
| 6 | Right-hand end plate | – | 34 |
| 7 | Push-in fitting | For right-hand end plate | 35 |
| 8 | Blanking plug | – | 35 |
| 9 | Push-in fitting | For working lines | 35 |
| 10 | Push-in fitting | For power supply module | 35 |
| 11 | Spacer bolt | – | 35 |
| 12 | Push-in fitting | For left-hand end plate | 35 |
| 13 | Screw kit | For attaching the extension modules to the basic block | 35 |

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Note

All ports and mounting holes that are not required must be sealed with a blanking plug.
Exception: venting hole

# Valve terminals CDVI, Clean Design

Key features – Pneumatic components

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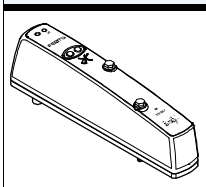
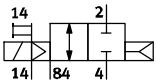
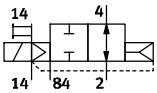
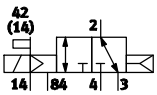
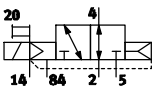
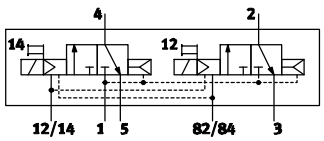
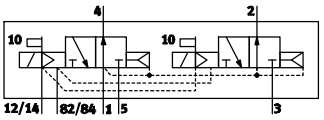
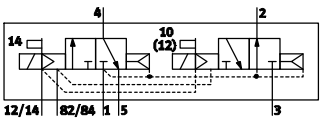
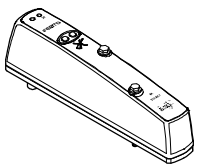
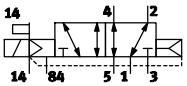
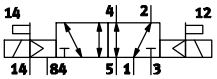
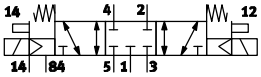
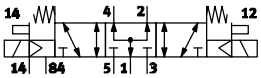
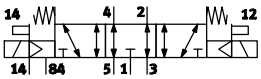
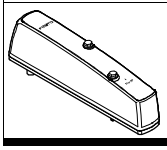
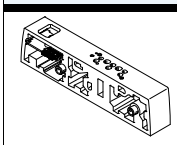
| Valves | | | |
|---|---|---|---|
| | Code | Circuit symbol | Description |
|  | R |   | 2/2-way single solenoid valve<br>• Normally closed<br>• Pneumatic spring return<br>• Suitable for vacuum<br>• Supplied externally with supply air |
| | S |   | 2/2-way single solenoid valve<br>• Normally open<br>• Pneumatic spring return<br>• Suitable for vacuum<br>• Supplied externally with supply air |
| | X |   | 3/2-way single solenoid valve<br>• Normally closed<br>• Pneumatic spring return<br>• Suitable for vacuum<br>• Supplied externally with supply air |
| | W |   | 3/2-way single solenoid valve<br>• Normally open<br>• Pneumatic spring return<br>• Suitable for vacuum<br>• Supplied externally with supply air |
| | K |   | 2x 3/2-way single solenoid valve<br>• Normally closed<br>• Pneumatic spring return<br>• Not suitable for vacuum |
| | N |   | 2x 3/2-way single solenoid valve<br>• Normally open<br>• Pneumatic spring return<br>• Not suitable for vacuum |
| | H |   | 2x 3/2-way single solenoid valve<br>• 1x normally closed, 1x normally open<br>• Pneumatic spring return<br>• Not suitable for vacuum |

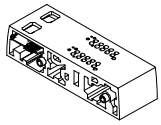
- Note

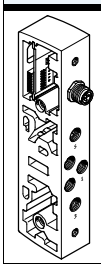
A filter must be installed upstream of valves operated in vacuum mode. This prevents any foreign matter in the intake air getting into the valve (e.g. when operating a suction cup).

**Valves and cover**

| | Code | Circuit symbol | Description |
|---|---|---|---|
|  | M |  | 5/2-way single solenoid valve<br>• Pneumatic spring return<br>• Suitable for vacuum |
| | J |  | 5/2-way double solenoid valve<br>• Suitable for vacuum |
| | G |  | 5/3-way valve<br>• Mid-position closed<br>• Mechanical spring return<br>• The piston rod side of the cylinder remains under pressure in the normal valve position<br>• Suitable for vacuum |
| | B |  | 5/3-way valve<br>• Mid-position pressurised<br>• Mechanical spring return<br>• The piston rod of the cylinder advances when the valve is in the normal position due to the differential piston areas<br>• Suitable for vacuum |
| | E |  | 5/3-way valve<br>• Mid-position exhausted<br>• Mechanical spring return<br>• In the normal valve position, the piston rod can be moved freely<br>• Suitable for vacuum |
|  | A | Cover for valve position | For valve terminal only |

| 1-valve extension modules (valve terminal only) | | | |
|---|---|---|---|
| | Code | Designation | Description |
|  | B1 | Extension module for 1 valve position | Without additional pneumatic supply |
| | D1 | Extension module for 1 valve position | Duct 1 separated with separating seal on left for creating a pressure zone with separate supply air |
| | F1 | Extension module for 1 valve position | Ducts 3 and 5 separated with separating seal on left |
| | H1 | Extension module for 1 valve position | Ducts 1, 3 and 5 separated with separating seal on left for creating a pressure zone with separate supply and exhaust air |
| | | | |
| | T | Only one solenoid coil per valve position | – |

| 2-valve extension modules (valve terminal only) | | | |
|---|---|---|---|
| | Code | Designation | Description |
|  | B | Extension module for 2 valve positions | Without additional pneumatic supply |
| | D | Extension module for 2 valve positions | Duct 1 separated with separating seal on left for creating a pressure zone with separate supply air |
| | F | Extension module for 2 valve positions | Ducts 3 and 5 separated with separating seal on left |
| | H | Extension module for 2 valve positions | Ducts 1, 3 and 5 separated with separating seal on left for creating a pressure zone with separate supply and exhaust air |
| | K | Extension module for 2 valve positions | Duct 1 separated with separating seal on left with separate supply port for creating pressure zones |
| | I | Extension module for 2 valve positions | Ducts 1, 3 and 5 separated with separating seal on left with separate supply and exhaust ports for creating pressure zones |
| | | | |
| | T | Only one solenoid coil per valve position | – |

| Additional function for 1 and 2-valve extension modules (valve terminal only) | | | |
|---|---|---|---|
| | Code | Designation | Description |
|  | V | Extension module with separate electrical power supply | Only in combination with fieldbus |
| | P | Extension module with separate supply and exhaust ports | – |
| | C | Extension module with separate electrical power supply as well as separate supply and exhaust ports | Only in combination with fieldbus |

- Note

The structure of the valve terminal with extension modules and their additional functions can be conveniently defined using the product configurator. You can find it on:

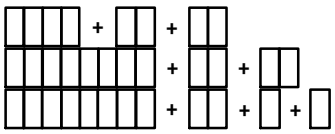
➔ Internet: cdvi

# Valve terminals CDVI, Clean Design

Key features – Pneumatic components

## Modularity

Consistently modular valve terminal in a grid of 4 ... 16 valve positions/ 8 ... 24 solenoid coils.
See sample representation on right.



4 + 2 + 2 valve positions

8 + 2 + 2 valve positions

8 + 2 + 1 + 1 valve positions

## Pilot air supply

The valves used are pneumatically piloted solenoid valves.
The ports on the valve terminal different for the following pilot air supply types:

- internal pilot air supply
- external pilot air supply

The pilot air supply duct 12/14 is supplied from the duct 1 supply air (internal pilot air supply) or via a separate pilot air supply in the left-hand end plate (external pilot air supply).

A separate pilot air supply is required in any event if supply pressure is less than 3 bar or greater than 8 bar.
In this case it is advisable to restrict the pilot air supply to max. 8 bar with a suitable regulator.

The pilot air supply is selected by including a corresponding code letter in the order code (end plates/ compressed air supply code U, V, Y, Z).

## Pneumatic pressure zones

CDVI offers a number of options for creating pressure zones, if different working pressures are required.

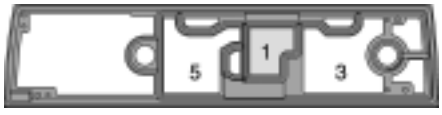
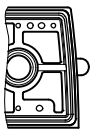
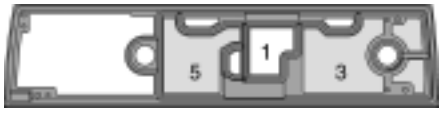
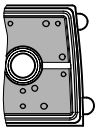
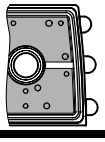
Pressure zones are created by isolating the internal supply ducts between the basic block and extension module or by using extension modules with separate supply ports with an appropriate separator plate.

A maximum of two different pressure zones can be created on valve terminals with one extension module without separate supply port. The compressed air is supplied at both ends through the end plates.
Up to three different pressure zones can be created on valve terminals with two extension modules. In this case, the compressed air is supplied via the two end plates as well as via the first extension module with separate supply port.

If more than three pressure zones are required, extension modules with a separate supply port must be used. Up to nine pressure zones are possible taking into consideration the maximum valve positions and number of coils. In this case, the compressed air is supplied via the two end plates as well as via the separate supply ports of the respective extension modules.

Separator plates are integrated ex-works as per your order. Separator plates can be distinguished through their coding, even when the valve terminal is assembled.
A label on the right-hand end plate makes it easier to allocate the separator plates when the valve terminal is assembled.

## Separator plates

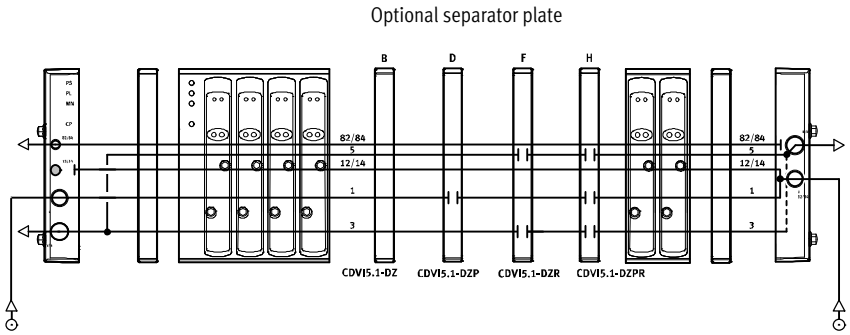
| Pictorial examples | Coding | Notes | |
|---|---|---|---|
|  |  | Separator plate<br>No duct separation | |
|  |  | Separator plate<br>Duct 1 separated<br>Ducts 3 and 5 open | |
|  |  | Separator plate<br>Duct 1 open<br>Ducts 3 and 5 separated | - - Note<br>Normally only duct 1 is closed.<br>Ducts 3 and 5 or 1, 3 and 5 can also be closed for special applications. |
|  |  | Separator plate<br>Ducts 1, 3 and 5 separated | |

## Examples: Compressed air supply and pilot air supply

### Internal pilot air supply

**Code U, Y**

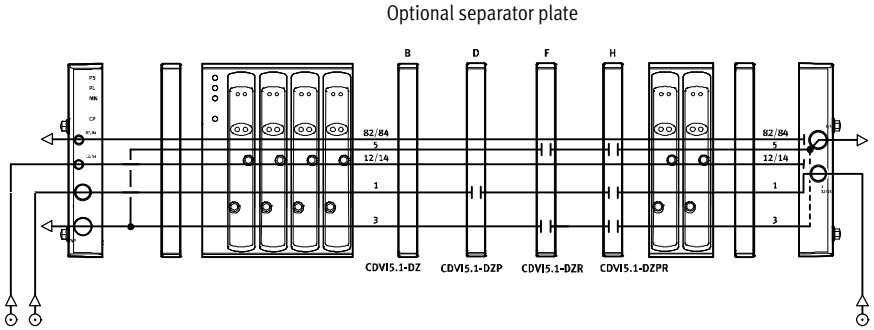
The diagram opposite shows an example of the configuration and connection of the compressed air supply with internal pilot air supply. Port 12/14 on the left-hand end plate is tightly sealed. The pilot air is supplied internally via the right-hand end plate.
Separator plates can be used optionally to create pressure zones.




### External pilot air supply

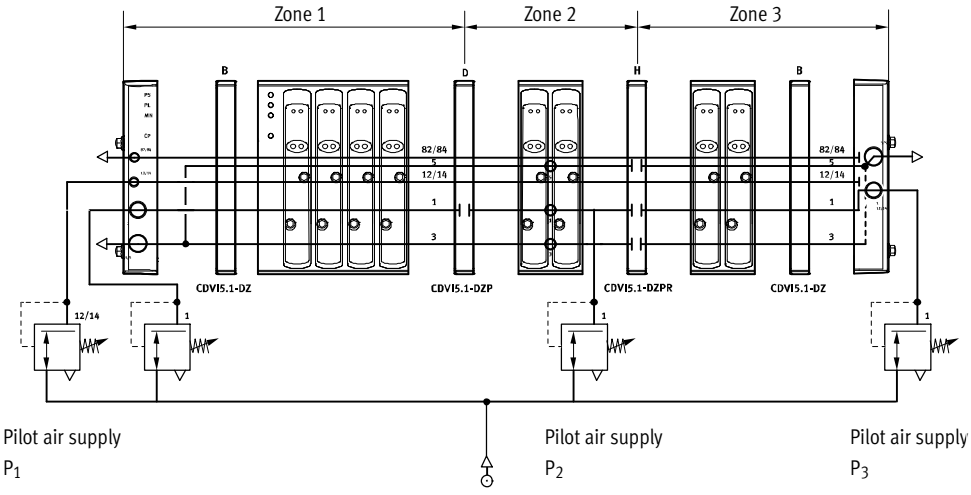
**Code V, Z**

The diagram opposite shows an example of the configuration and connection of the compressed air supply with external pilot air supply. Port 12/14 on the left-hand end plate is equipped with a fitting for this purpose.
Separator plates can be used optionally to create pressure zones. In this case it is advisable to restrict the pilot air supply to max. 8 bar with a suitable regulator.




### Creation of pressure zones

The CDVI facilitates the creation of up to 9 pressure zones. The diagram opposite shows an example of the configuration and connection of three pressure zones using separator plates with an external pilot air supply of 3 ... 8 bar.

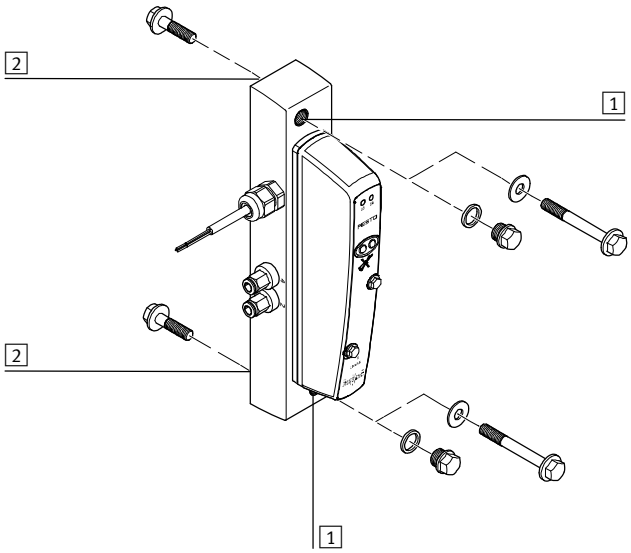



Note

Particular attention must be paid to the assembly of the right-hand end plate when converting a valve terminal from internal to external pilot air supply.

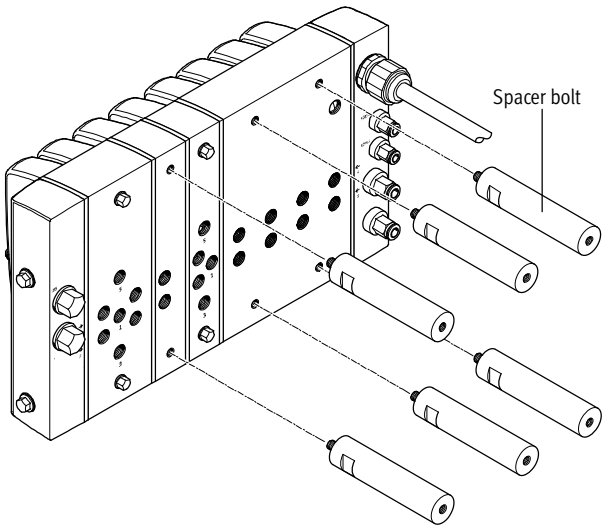
## Mounting

Individual sub-base



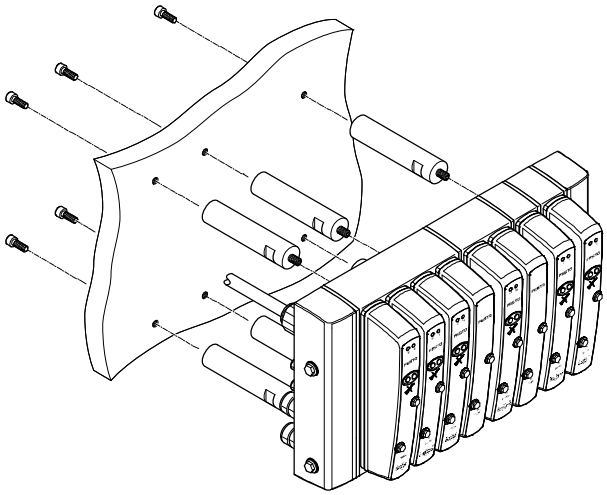

1 Hole for front mounting (CDSV) using M6 screws; the hole can be covered with blanking plug G1⁄8 if not required
2 Hole for rear mounting (CDSV) using M6 screws

Valve terminal




The CDVI can be mounted directly on earthed mounting surfaces using the four threaded holes in the basic block and the spacer bolts ordered via the order code (accessories order code Y).

The CDVI can be mounted in any position. However, the selected mounting position should allow for the cleaning off of dirt and the draining of cleaning agent.



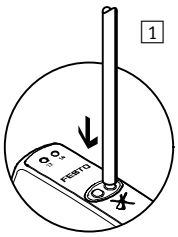
Note

If extension modules are added to the valve terminal at a later stage, the following points must be observed:

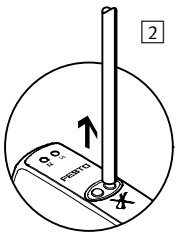
- Basic block:
  Always attach using 4 spacer bolts
- Extension modules:
  After the second module, max. 4 extension modules between 2 attachment points
- Appropriate screw kit for attaching the extension modules to the basic block (page 35)

## Manual override (MO)

Manual override with automatic return (non-detenting)



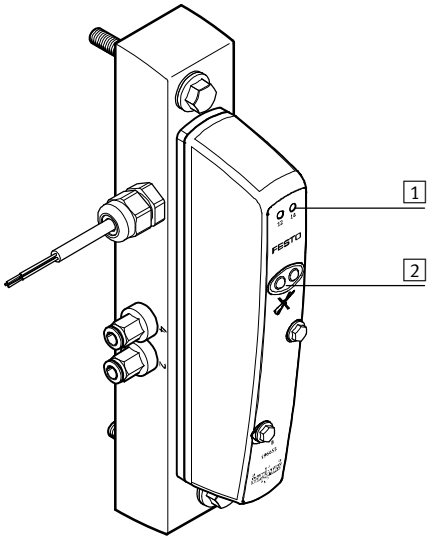

1 Press in the stem of the manual override with a pointed object. Valve is then actuated.




2 Remove the pointed object. Mechanical force pushes the stem of the manual override back.
Valve returns to initial position (not with 5/2-way double solenoid valve, code J).

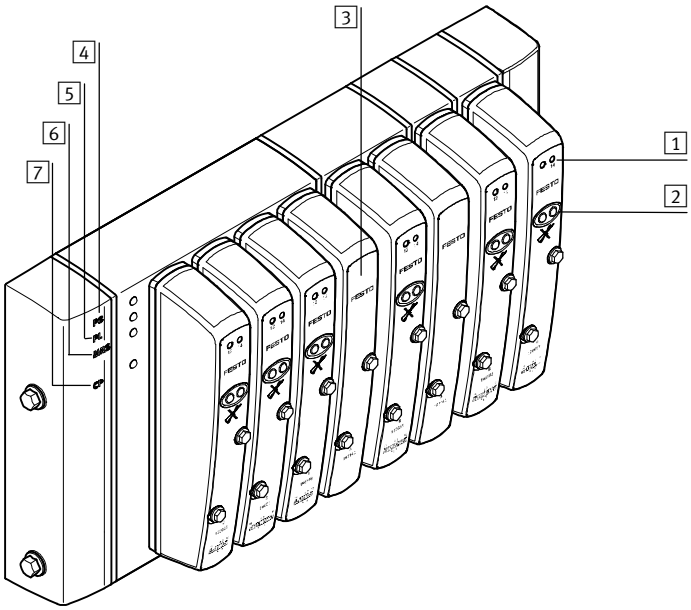
## Display and control elements

Individual sub-base




1 Yellow LEDs (one per solenoid coil)
2 Non-detenting manual override (per solenoid coil)

Valve terminal

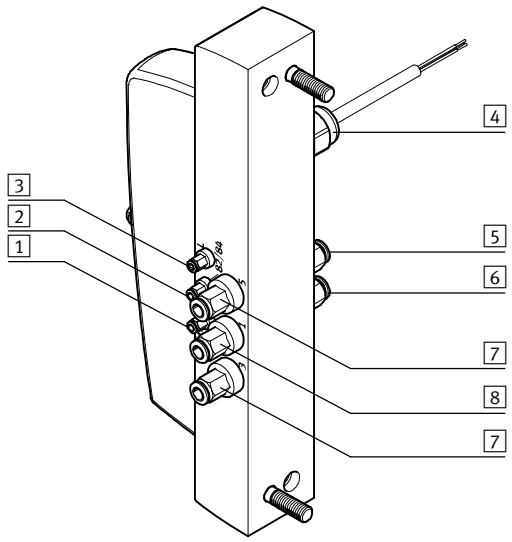



1 Yellow LEDs (one per solenoid coil)
2 Non-detenting manual override (per solenoid coil)
3 Vacant valve position with blanking plate

With fieldbus:
4 Green PS LED
"Power System"
Operating voltage of electronics
5 Green PL LED
"Power Load"
Load voltage of valves
6 Green/red MNS LED
"Module/Network Status"
7 Green/red CP LED
"Compact Performance"
CP extension modules

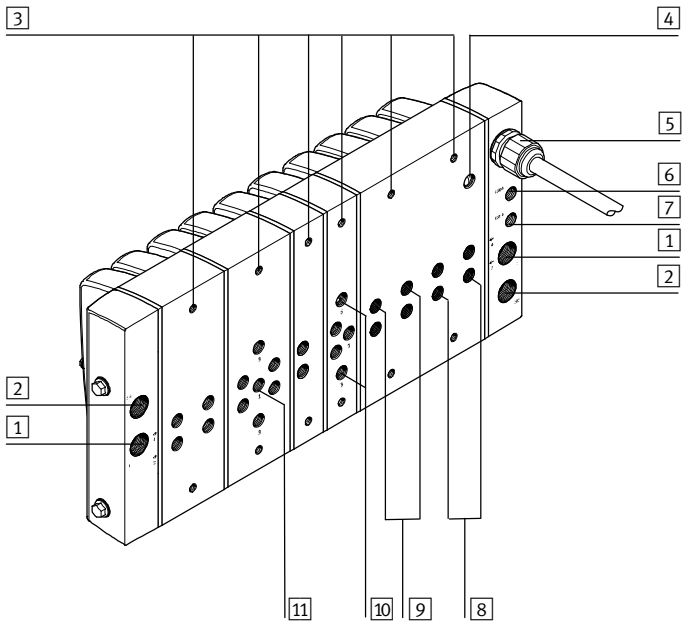
## Connections

Individual sub-base




1 Pilot air supply port 12/14
2 Pilot exhaust port 82/84
3 Pressure compensation port/ venting hole
4 Electrical connection
5 Working line 4 per valve
6 Working line 2 per valve
7 Exhaust port 3/5
8 Supply port 1

Valve terminal

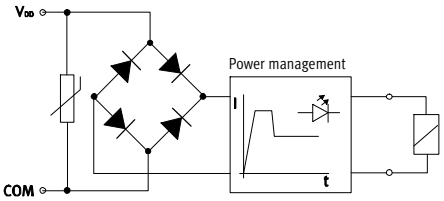



1 Supply port 1
2 Exhaust port 3/5
3 Threaded holes for spacer bolts (top and bottom)
4 Pressure compensation port/ venting hole
5 Electrical multi-pin plug connection
6 Pilot exhaust port 82/84
7 Pilot air supply port 12/14
8 Working line 2 per valve
9 Working line 4 per valve
10 Exhaust ports 3 + 5 with extension module
11 Supply port 1 with extension module

| Line | | Port code (ISO 5599) | Connection size (ISO 228) | Connector fitting[1)] |
|---|---|---|---|---|
| Supply air/vacuum | 1 | 1 | G3/8 | In the left-hand/right-hand end plate |
| | 11 | 1 | G1/8 | In the extension module with additional supply |
| Exhaust air | 2 | 3/5 | G3/8 | In the left-hand/right-hand end plate |
| | 10 | 3, 5 | G1/8 | In the extension module with additional supply |
| Pressure compensation | 4 | – | G1/8 | In the basic block |
| Pilot exhaust air | 6 | 82/84 | G1/8 | In the left-hand end plate |
| Pilot air supply | 7 | 12/14 | G1/8 | In the left-hand end plate |
| Working line/vacuum | 8 | 2, 4 | G1/8 | In the basic block |
| | 9 | 2, 4 | G1/8 | In the extension module with additional supply |

1) The CDVI valve terminal can be pre-equipped with push-in fittings depending on the order.

## Electrical power as a result of current reduction




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

Advantages:

- Lower power consumption
- Lower temperature rise

**Terminal allocation – Cable for individual sub-base CDSV**

| Core colour | Allocation |
|---|---|
| Brown | Solenoid coil 14 |
| Black | Solenoid coil 12 (not on 5/2-way single solenoid valve) |
| Blue | com[1)] |

1) 0 V for positive switching valves; 24 V can be connected for negative switching control signals

**Terminal allocation – Multi-pin cable[1)]**

| Pin | Address | Valve position/solenoid coil | | Wire colour[2)] |
|---|---|---|---|---|
| | | 4-valve basic block | 8-valve basic block | |
| A01 | 0 | 0/14 | 0/14 | WH |
| A02 | 1 | 0/12 | 0/12 | GN |
| B01 | 2 | 1/14 | 1/14 | YE |
| B02 | 3 | 1/12 | 1/12 | GY |
| C01 | 4 | 2/14 | 2/14 | PK |
| C02 | 5 | 2/12 | 2/12 | BU |
| A03 | 6 | 3/14 | 3/14 | RD |
| A04 | 7 | 3/12 | 3/12 | VT |
| B03 | 8 | – | 4/14 | GY PK |
| B04 | 9 | – | 4/12 | RD BU |
| C03 | 10 | – | 5/14 | WH GN |
| C04 | 11 | – | 5/12 | BN GN |
| A05 | 12 | – | 6/14 | WH YE |
| A06 | 13 | – | 6/12 | YE BN |
| B05 | 14 | – | 7/14 | WH GY |
| B06 | 15 | – | 7/12 | GY BN |
| C05 | 16 | – | – | WH PK |
| C06 | 17 | – | – | PK BN |
| A07 | 18 | – | – | WH BU |
| A08 | 19 | – | – | BN BU |
| B07 | 20 | – | – | WH RD |
| B08 | 21 | – | – | BN RD |
| C07 | 22 | – | – | WH BK |
| C08 | 23 | – | – | BN BK |
| B10 | com | 0 V [3)] | 0 V [3)] | BN |
| C10 | com | 0 V [3)] | 0 V [3)] | BK |
| – | – | – | – | GY GN [4)] |

1) Max. 24 solenoid coils
2) To IEC 757
3) 0 V for positive switching control signals; connect 24 V for negative switching control signals; mixed operation is not permitted.
4) This core is not used and can be cut off.

## Address allocation – Valves with multi-pin plug

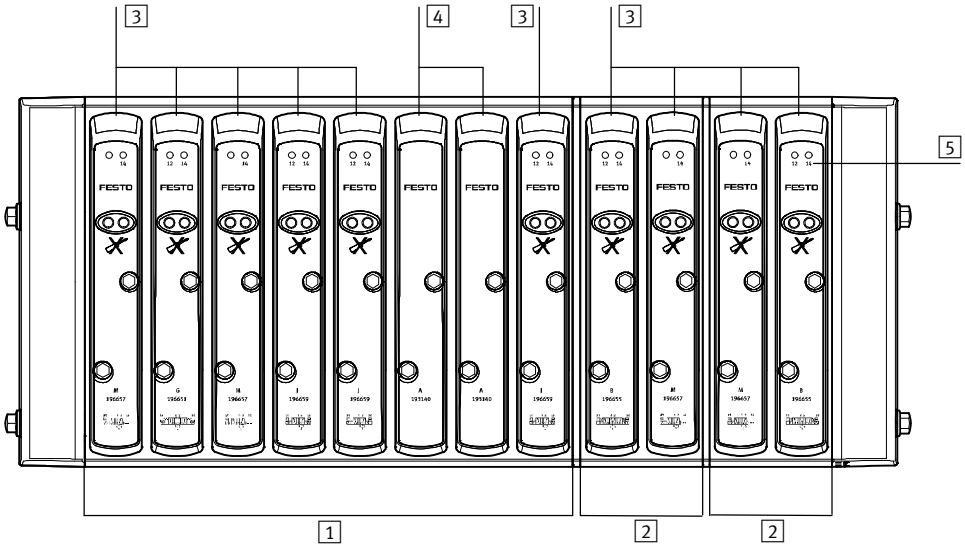
A valve position on the CDVI valve terminal always occupies 2 addresses on the basic block, even if one of these is equipped with a blanking plate.

Addresses should be assigned in ascending consecutive order.
The numbering goes from left to right.

A valve terminal extension occupies 2 addresses on an extension module for 1 valve position and 4 addresses on an extension module for 2 valve positions.

If the extension module is additionally configured with the option T (only one solenoid coil per valve position), only one address is occupied per valve position.

Example: Address allocation for a CDVI valve terminal with a basic block with 8 valves and 2 extension modules for 2 valve positions




1 Basic block with 8 valve positions: 16 addresses
2 Extension module for 2 valve positions: 4 addresses
=› 24 addresses (coils)

3 Valves
4 Vacant positions
5 Number of the solenoid coil

## Addressing order for valves with fieldbus

The CDVI valve terminal occupies 8, 16 or, depending on the extension, up to 24 addresses, regardless of the number of solenoid coils.
A 4-valve basic block occupies 8 addresses and an 8-valve basic block 16 addresses, while the 1-valve and 2-valve extension modules occupy 2 and 4 addresses respectively.

If a valve position is equipped with a valve with 2 pilot solenoid coils, the following allocation applies:

- Pilot solenoid coil 14 occupies the less significant address
- Pilot solenoid coil 12 occupies the more significant address

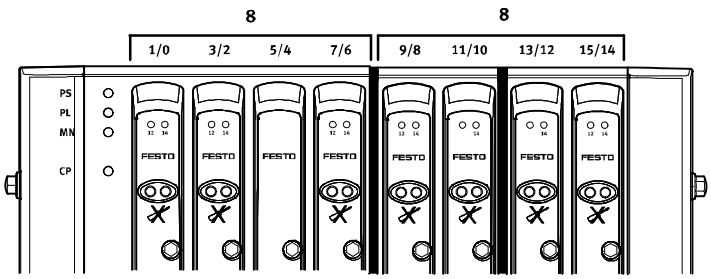
The more significant address is not used in valves with only one pilot solenoid coil.

The addresses of the CDVI valve terminal are allocated from left to right, while the addresses of the individual valve positions are allocated from right (pilot solenoid coil 14) to left (pilot solenoid coil 12).

- Note

If the extension module is additionally configured with the option T (only one solenoid coil per valve position), only one address is occupied per valve position.

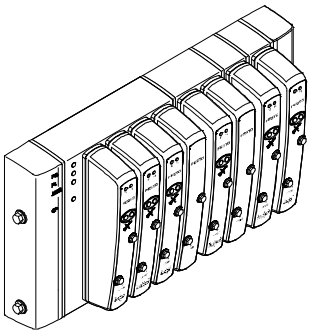
Example: Addressing order for a basic block with 4 valve positions and two extension modules for 2 valve positions




- Note

Address shifts can occur if one expansion block is replaced by another type of expansion block. For example, replacing a 2-valve bi expansion block with a 2-valve mono expansion block shifts the address allocation to the right by 2 addresses.

## Fieldbus Direct



Fieldbus Direct is a system for the compact connection of a valve terminal of various sizes to different fieldbus standards.

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

The I/O modules and cables for the CP string extension are ordered using the order code for the CPI installation system.

Additional information
➔ Internet: ctec

## Enhanced fieldbus diagnostics

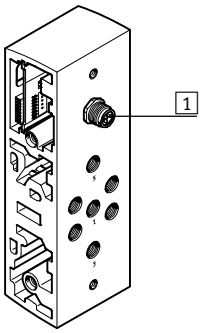
Enhanced diagnostics (supplied load voltage) is only possible with new basic blocks and new expansion blocks with additional electrical power supply (code C and V).

These new blocks can be identified by the 16-pin terminal strip (old = 12-pin) as well as the designation printed on the PCB. The green "Power Loss" LED on the basic block flashes in the case of undervoltage/voltage failure of the additional power supply at the extension module (code C and V).

- Note

Enhanced diagnostics is not possible with combinations of old and new expansion blocks.

## Electrical voltage zones




Up to 9 electrical voltage zones can be created with the help of extension modules with separate electrical power supply (code V and C), taking into consideration the maximum valve positions and number of coils.

By using an extension module with separate electrical power supply, the solenoid coils following to the right including the coils of the extension module are supplied separately with electrical power or disconnected separately.

1 Connection of separate electrical power supply

# Valve terminals CDVI, Clean Design

Configuration and ident. code

## Valve terminal configurator

**Online via:** ➔ www.festo.com

A valve terminal configurator is available online to help you select a suitable CDVI valve terminal.

Like all valve terminals, the CDVI is ordered using an ident. code. This ident. code specifies the valve functions, the number of valves, vacant positions as well as the additional functions and the type of compressed air supply.

As is the case with all Festo products, all CDVI and CDSV are supplied:

- fully pre-assembled
- fitted with push-in fittings on the working lines and end plates on request
- tested for electrical function
- tested for pneumatic function
- securely packaged
- manuals can be downloaded free of charge

Ordering system for CDVI

➔ Internet: cdvi

## Example of an ident. code

| 15P | – | K10 | – | 4A | – | UR | – | 3MJ-B-JG | – | E | + | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Valve terminal family**

| | |
|---|---|
| 15P | CDVI |

**Electrical connection**

| | |
|---|---|
| K10 | Multi-pin plug, cable 10 m |

**Valve positions/type of connection**

| | |
|---|---|
| 4 | Valves on basic block |
| A | Straight push-in fittings, push-in fitting for tubing OD 8 mm |

**Pneumatic supply/type of seal**

| | |
|---|---|
| U | Supply at left, internal pilot air supply |
| R | Resistant to cleaning agents |

**Selected valve equipment...**

| | |
|---|---|
| | **...basic block (position 0 ... 3)** |
| 3M | 5/2-way single solenoid valve |
| J | 5/2-way double solenoid valve |
| | **...additional valves (position 4 and 5)** |
| B | Extension module for 2 valve positions |
| J | 5/2-way double solenoid valve |
| G | 5/3-way valve, mid-position closed |

**Manual**

| | |
|---|---|
| E | Manual in English |

**Type of mounting**

| | |
|---|---|
| Y | Spacer bolt, length 1 |

## Equipment

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

Incorrect additional oil and too high an oil content in the compressed air reduces the service life of a 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 ester, e.g. rapeseed oil methyl ester), the maximum residual oil content of 0.1 mg/m$^3$ must not be exceeded (see ISO 8573-1 Class 2).

**Mineral oils**

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

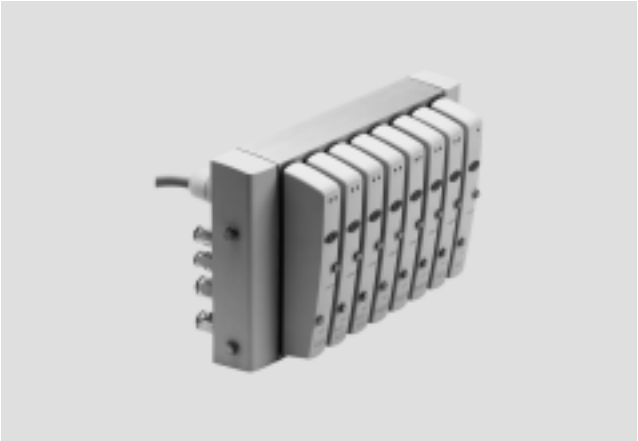
# Valve terminals CDVI, Clean Design

Technical data

FESTO

- Flow rate
  300 ... 650 l/min

- Valve width
  24 mm



| General technical data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Valve function order code | | R | S | X | W | K | N | H | M | J | G | B | E | |
| Valve function | | 2/2-way solenoid valves | | 3/2-way solenoid valves | | 2x 3/2-way solenoid valves | | | 5/2-way solenoid valves | | 5/3-way solenoid valves | | | |
| Reset method | | Pneumatic spring | | Pneumatic spring | | Pneumatic spring | | | Pneumatic spring | | Mechanical spring | | | |
| Direction of flow | | Reversible | | Reversible | | Non-reversible | | | Reversible | | Reversible | | | |
| Exhaust function | | With flow control | | With flow control | | No flow control | | | With flow control | | With flow control | | | |
| b value | | 0.34 | | 0.34 | | 0.14 | | | 0.38 | | 0.5 | 0.37 | 0.5 | |
| c value | [l/sbar] | 2.05 | | 2.05 | | 1.4 | | | 2.75 | | 2.55 | 3.2 | 1.54 | |
| Standard nominal flow rate | [l/min] | 500 | 300 | 500 | | 300 | | | 650 | | 650 | 650 | 400 | |
| Note on forced switch on/off | | Min. 1/month | | | | | | | | | | | | |
| Constructional design | | Piston spool valve | | | | | | | | | | | | |
| Actuation type | | Electrical | | | | | | | | | | | | |
| Sealing principle | | Soft | | | | | | | | | | | | |
| Width | [mm] | 24 | | | | | | | | | | | | |
| Nominal diameter | [mm] | 5 | | | | | | | | | | | | |
| Tightening torque of valve/ blanking plate | [Nm] | 0.8 | | | | | | | | | | | | |
| Mounting position | | Any | | | | | | | | | | | | |
| Manual override | | Non-detenting | | | | | | | | | | | | |
| Max. number of valve locations | | 16 (max. 24 solenoid coils) | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Type of mounting | | | | | | | | | | | | | | |
| Valves and end plate | | Via 2 screws (DIN 6921) | | | | | | | | | | | | |
| Valve terminal | | Via spacer bolts | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Pneumatic connections | | | | | | | | | | | | | | |
| Supply | 1 | G3⁄8 (G1⁄8 on extension module CDVI5.0-EBX and CDSV) | | | | | | | | | | | | |
| Exhaust | 3/5 | G3⁄8 (G1⁄8 on extension module CDVI5.0-EBX and CDSV) | | | | | | | | | | | | |
| Working lines | 2/4 | G1⁄8 | | | | | | | | | | | | |
| Pilot air supply | 12/14 | G1⁄8 (M5 on CDSV) | | | | | | | | | | | | |
| Pilot exhaust air | 82/84 | G1⁄8 (M5 on CDSV) | | | | | | | | | | | | |
| Pressure compensation | | G1⁄8 (M5 on CDSV) | | | | | | | | | | | | |

| Valve switching times [ms] | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Valve function order code | | R | S | X | W | K | N | H | M | J | G | B | E |
| Switching times | on | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | – | 12 | 12 | 12 |
| | off | 14 | 14 | 14 | 14 | 22 | 22 | 22 | 22 | – | 25 | 25 | 25 |
| | change-over | – | – | – | – | – | – | – | – | 10 | 17 | 17 | 17 |

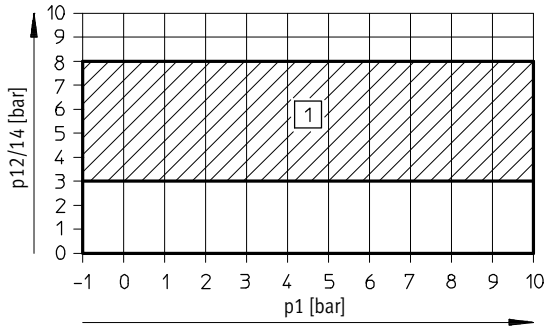
| Operating and environmental conditions | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Valve function order code | | R | S | X | W | K | N | H | M | J | G | B | E |
| Operating medium | | Compressed air in accordance with ISO 8573-1:2010 [7:4:4] | | | | | | | | | | | |
| Note on operating/pilot medium | | Operation with lubricated medium possible (in which case lubricated operation will always be required) | | | | | | | | | | | |
| Operating pressure | [bar] | –0.9 ... +10 | | | | 3 ... 10[2] | | | –0.9 ... +10 | | | | |
| Operating pressure for valve terminal with internal pilot air supply | [bar] | 3 ... 8 (not available on the CDSV) | | | | | | | | | | | |
| Pilot pressure | [bar] | 3 ... 8 | | | | | | | | | | | |
| Storage temperature | [°C] | –20 ... +40 | | | | | | | | | | | |
| Operating temperature | [°C] | –5 ... +50 | | | | | | | | | | | |
| Temperature of medium | [°C] | –5 ... +50 | | | | | | | | | | | |
| CE mark (see declaration of conformity) | | To EU EMC Directive | | | | | | | | | | | |
| Food industry approval | | DIN EN ISO 14159 | | | | | | | | | | | |
| Corrosion resistance class CRC[1] | | 3 | | | | | | | | | | | |

1) Corrosion resistance class 3 as per Festo standard 940 070
Components subject to higher corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

2) 2x 3/2-way valves not suitable for vacuum

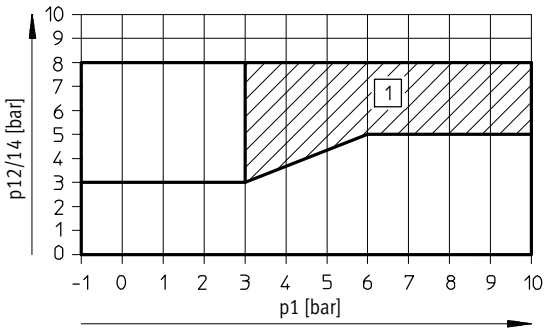
**Pilot pressure with external pilot air supply**

Switch-on pilot pressure of 5/2-way and 5/3-way valves and 3/2-way valves with external air supply (EXT)




1 Permissible pressure range

Switch-on pilot pressure of 3/2-way valves




1 Permissible pressure range

# Valve terminals CDVI, Clean Design

Technical data

| Electrical data | | |
|---|---|---|
| Electromagnetic compatibility | | Interference immunity tested to EN 61000-6-2 |
| Nominal operating voltage | [V DC] | 24, reverse polarity protected |
| Permissible voltage fluctuation | [%] | ±10 |
| Residual ripple | [Vss] | 4 |
| Switch-on current consumption | | |
| • per solenoid coil at 24 V (with LEDs) | [mA] | Typ. 120 |
| • total at 24 V and max. number of solenoid coils (with LEDs) | [A] | Typ. 2.88 |
| Current consumption during operation | | |
| • per solenoid coil at 24 V (with LEDs) | [mA] | Min. 26 |
| • total at 24 V and max. number of solenoid coils (with LEDs) | [A] | Typ. 0.62 |
| Electrical power consumption per solenoid coil (with LED) | [W] | 3.1 |
| Duty cycle | | 100% |
| Protection class to EN 60529 | | IP65, IP66, IP67, NEMA 4 (fully assembled) |

| Multi-pin cable | | |
|---|---|---|
| Cable design | [$mm^2$] | 25x0.34 |
| Bending radius during flexible use | | Min. 15x cable ∅ |
| Outer ∅ | [mm] | Approx. 11.4 |

| Materials | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Valve function order code | R | S | X | W | K | N | H | M | J | G | B | E |
| Blanking plate | Polypropylene (PP), thermoplastic rubber (TPE), polyamide (PA) | | | | | | | | | | | |
| Manifold sub-base | Aluminium (anodised min. 20 µm) | | | | | | | | | | | |
| Blanking plug | Polybutylene terephthalate (material no.: 1.4303 or 1.4301) | | | | | | | | | | | |
| End plate | Polypropylene | | | | | | | | | | | |
| Screws | Polybutylene terephthalate (material no.: 1.4303 or 1.4301) | | | | | | | | | | | |
| Spacer bolt | Aluminium (anodised min. 20 µm) | | | | | | | | | | | |
| Valve | Aluminium, polyacetate (POM), polyphenylene sulphide (PPS), polyamide (PA), nitrile rubber (NBR), brass (Ms), steel (St), polycarbonate (PC), polypropylene (PP) | | | | | | | | | | | |
| Note on materials | RoHS-compliant | | | | | | | | | | | |

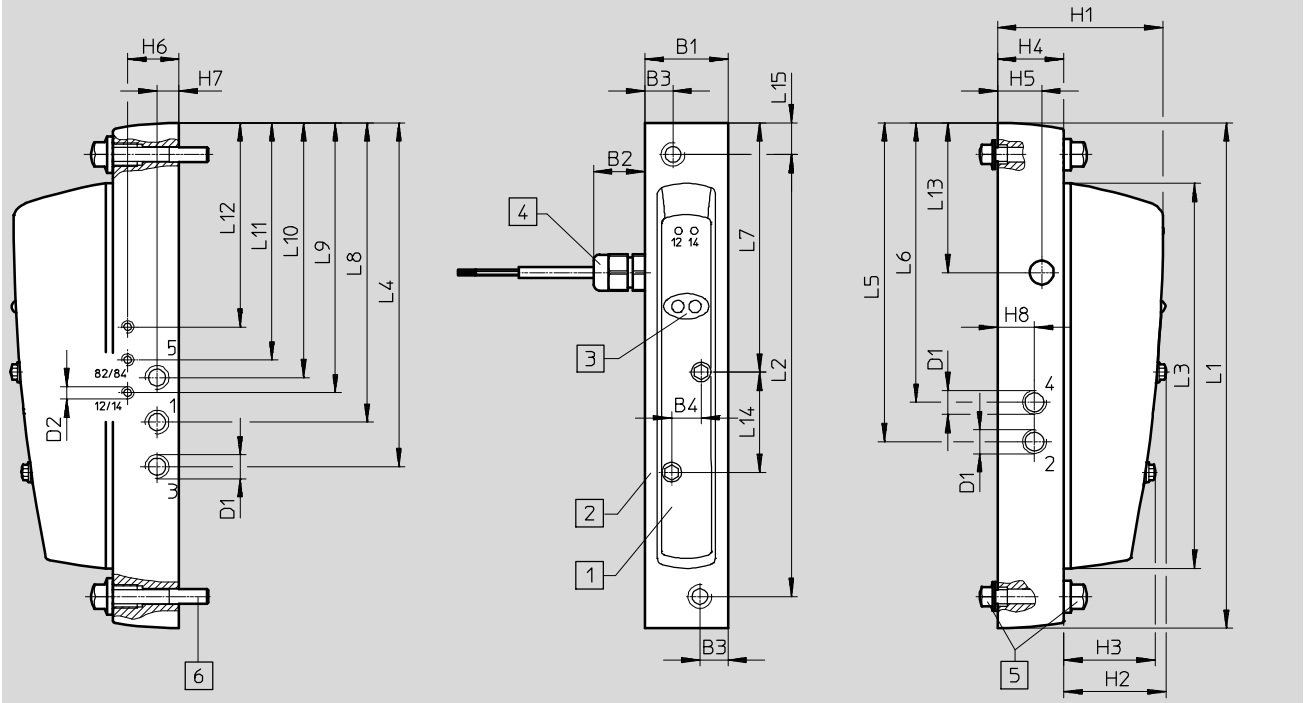
| Nominal flow rate [l/min] | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Valve function order code | R | S | X | W | K | N | H | M | J | G | B | E |
| Pressurised | 500 | 300 | 500 | 500 | 300 | 300 | 300 | 650 | 650 | 650 | 650 | 400 |
| Exhausted | 500 | 300 | 500 | 500 | 300 | 300 | 300 | 650 | 650 | 650 | 400 | 650 |
| Mid-position | – | – | – | – | – | – | – | – | – | – | 150 | 150 |

| Weight [g] | | |
|---|---|---|
| | CDVI multi-pin plug | CDVI fieldbus |
| Basic block with 4 valve positions[1)] | 1050 | 1320 |
| Basic block with 8 valve positions[1)] | 2090 | 2360 |
| Extension module for 1 valve position with/ without additional supply[2)] | 255 | 255 |
| Extension module for 2 valve positions with/ without additional supply[2)] | 510 | 510 |
| Valve | 185 ... 210 | |
| Blanking plate | 85 | |
| Left-hand/right-hand end plate | 120 | |
| Separator plate | 30-40 | |
| CDSV individual sub-base[3)] | 690 | |
| Spacer bolt (2 pieces) | 160 | |
| Connecting cable per metre | 168 | |

1) Basic block, without: separator plates, right-hand and left-hand end plates, pneumatic fittings, cables, valves and cover plates.
2) Extension module, without: separator plate, pneumatic fittings, valves and cover plates.
3) Individual sub-base, without: pneumatic fittings and valve.

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

Individual sub-base



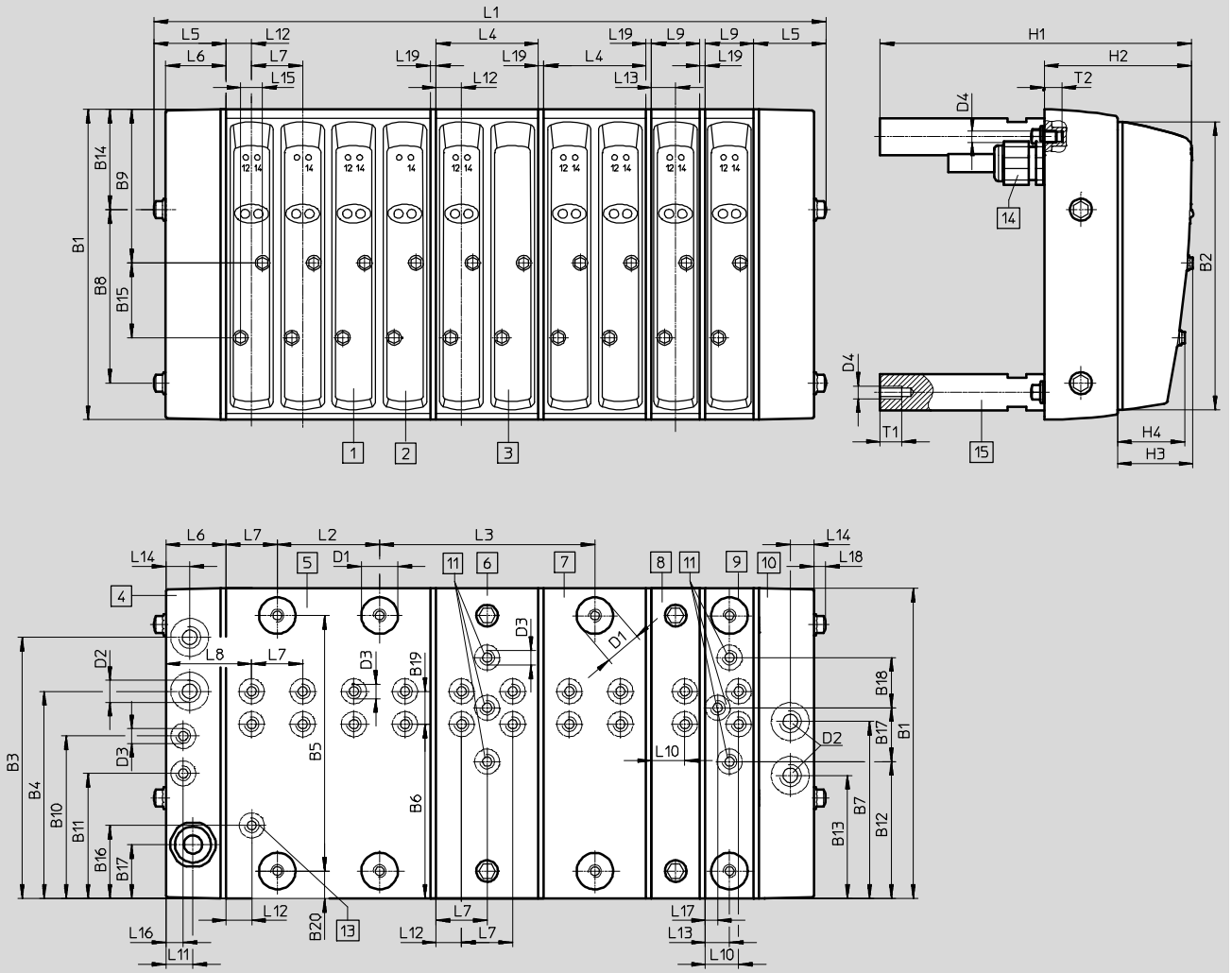

1 Choice of single solenoid or double solenoid valve
2 Manifold sub-base
3 Manual override
4 Cable connector M20x1.5
5 For mounting from below:
2x screw M6x18-A2-80
2x sealing ring CRO-M6
2x blanking plug G1⁄8
2x sealing ring G1⁄8
6 For mounting from above:
2x screw M6x40-A2-80
2x sealing ring CRO-M6

| Type | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CDSV | 34 | 21 | 11.5 | 12 | G1/8 | M5 | 67.6 | 41.9 | 37.5 | 27 | 18 | 21 | 9 | 15 |

| Type | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 | L11 | L12 | L13 | L14 | L15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CDSV | 207 | 181 | 158 | 140.9 | 130.6 | 114.5 | 102.1 | 122.6 | 110.6 | 104.4 | 97.1 | 83.6 | 61.4 | 41 | 13 |

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

Basic block with 4 valve positions and extension modules, design with multi-pin plug connection




1 Double solenoid valve
2 Single solenoid valve
3 Blanking plate
4 Left-hand end plate
5 4-valve or 8-valve basic block
6 2-valve extension module, optionally with additional pneumatic power supply
7 2-valve extension module
8 1-valve extension module
9 1-valve extension module, optionally with additional pneumatic power supply
10 Right-hand end plate
11 Port for further pressure zones or additional pneumatic power supply
13 Venting hole
14 Cable connector M20 x 1.5 for multi-pin cable
15 Threaded pin
required after every second extension module.
An extension module may protrude without attachment.

# Valve terminals CDVI, Clean Design

Technical data

| Type | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CDVI5.0-...-MP | 170 | 158 | 143 | 113.5 | 140 | 95.5 | 97 | 95 | 84.1 | 89 | 68.5 | 75 | 67.5 | 55 | 41 | 40 | 29.5 | 27.5 | 18 | 15 |

| Type | D1 | D2 | D3 | D4 | H1 | H2 | H3 | H4 | T1 | T2 |
|---|---|---|---|---|---|---|---|---|---|---|
| CDVI5.0-...-MP | 20 | G3/8 | G1/8 | M6 | 170 | 80 | 41.9 | 37.5 | 12 | 9.5 |

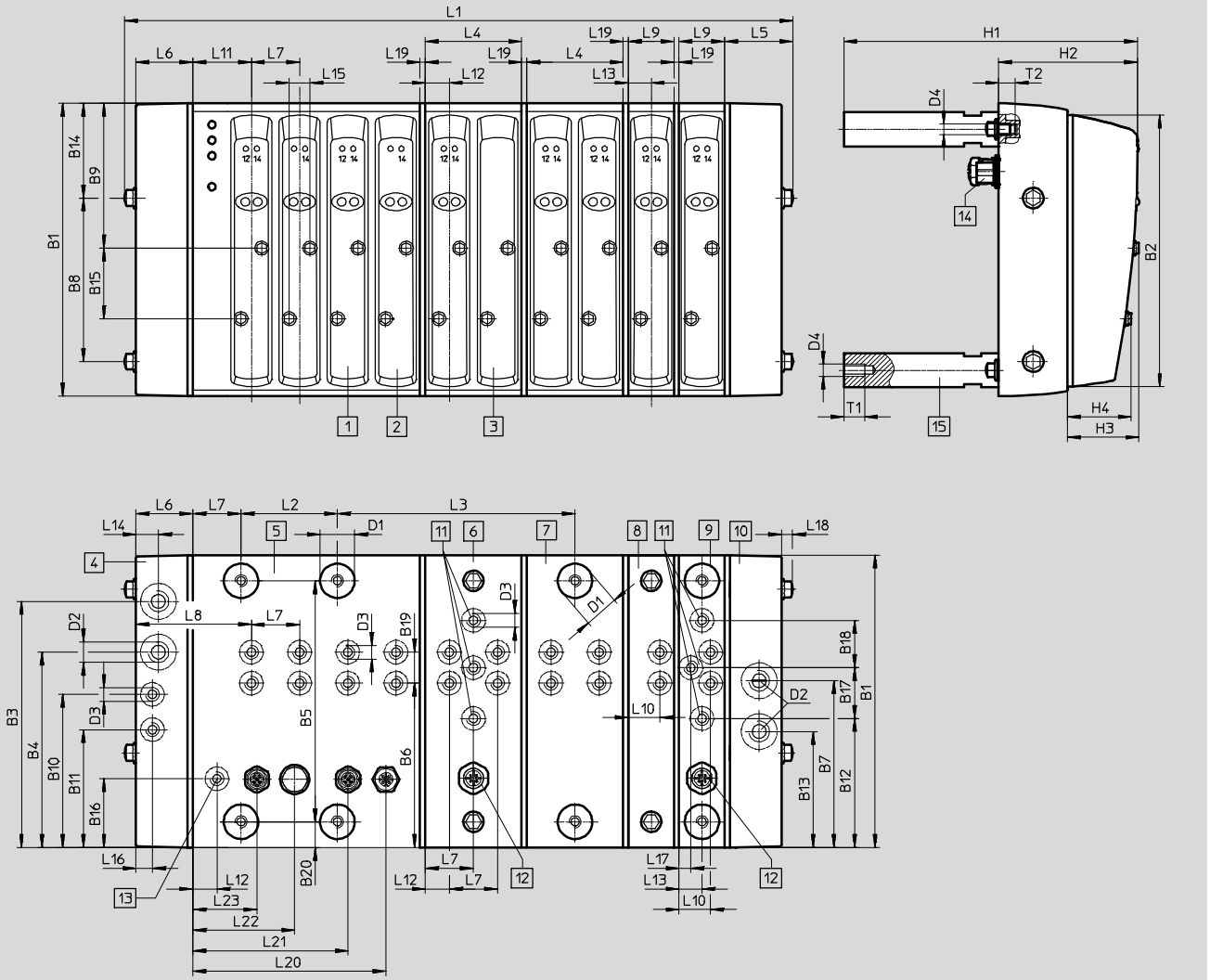
| Type | | Number of valve locations | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 ... 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Valve terminal with CDVI5.0-GB4-MP | L1 | 190.8 | 220.3 | 249.8 | 279.3 | 308.8 | 338.3 | 367.8 | 397.3 | 426.8 | 456.3 | 485.8 | 515.3 | 544.8 |

| Type | | Number of valve locations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 ... 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Valve terminal with CDVI5.0-GB8-MP | L1 | 302.8 | 332.3 | 361.8 | 391.3 | 420.8 | 450.3 | 479.8 | 509.3 | 538.8 |

| Type | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 | L11 | L12 | L13 | L14 | L15 | L16 | L17 | L18 | L19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Valve terminal with CDVI5.0-GB4-MP | 56 | 118 | 56 | 39.4 | 33 | 28 | 47 | 26.5 | 18.3 | 15 | 14 | 13.3 | 13 | 12 | 9.5 | 6.8 | 6.4 | 3 |
| Valve terminal with CDVI5.0-GB8-MP | 168 | | | | | | | | | | | | | | | | | |

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

Basic block with 4 valve positions and extension modules, design with fieldbus connection




1 Double solenoid valve
2 Single solenoid valve
3 Blanking plate
4 Left-hand end plate
5 4-valve or 8-valve basic block
6 2-valve extension module, optionally with additional electrical and/or pneumatic power supply
7 2-valve extension module
8 1-valve extension module
9 1-valve extension module, optionally with additional electrical and/or pneumatic power supply
10 Right-hand end plate
11 Port for further pressure zones or additional pneumatic power supply
12 Port for further electrical voltage zones M12, 4-pin
13 Venting hole
14 Bus connection
15 Threaded pin required after every second extension module. An extension module may protrude without attachment.

# Valve terminals CDVI, Clean Design

Technical data

| Type | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CDVI5.0-...-DN | 170 | 158 | 143 | 113.5 | 140 | 95.5 | 97 | 95 | 84.1 | 89 | 68.5 | 75 | 67.5 | 55 | 41 | 40 | 29.5 | 27.5 | 18 | 15 |

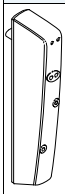
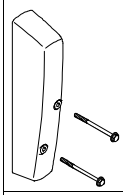
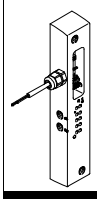
| Type | D1 | D2 | D3 | D4 | H1 | H2 | H3 | H4 | T1 | T2 |
|---|---|---|---|---|---|---|---|---|---|---|
| CDVI5.0-...-DN | 20 | G3/8 | G1/8 | M6 | 170 | 80 | 41.9 | 37.5 | 12 | 9.5 |

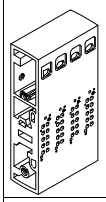
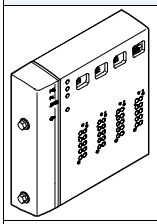
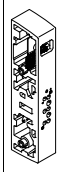
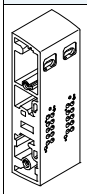
| Type | | Number of valve locations | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 ... 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Valve terminal with CDVI5.0-GB4-DN | L1 | 210.8 | 240.3 | 269.8 | 299.3 | 328.8 | 358.3 | 367.8 | 417.3 | 446.8 | 476.3 | 505.8 | 535.3 | 564.8 |

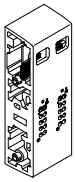
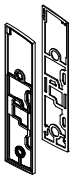
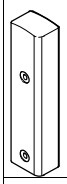
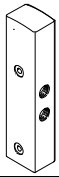
| Type | | Number of valve locations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 ... 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Valve terminal with CDVI5.0-GB8-DN | L1 | 322.8 | 352.3 | 381.8 | 411.3 | 440.8 | 470.3 | 499.8 | 529.3 | 558.3 |

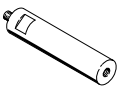
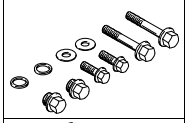
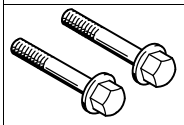
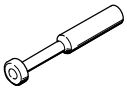
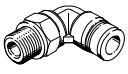
| Type | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 | L11 | L12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Valve terminal with CDVI5.0-GB4-DN | 56 | 138 | 56 | 39.4 | 33 | 28 | 67 | 26.5 | 18.3 | 34 | 14 |
| Valve terminal with CDVI5.0-GB8-DN | 168 | | | | | | | | | | |

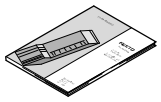
| Type | L13 | L14 | L15 | L16 | L17 | L18 | L19 | L20 | L21 | L22 | L23 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Valve terminal with CDVI5.0-GB4-DN | 13.3 | 13 | 12 | 9.5 | 6.8 | 6.4 | 3 | 112.2 | 90.2 | 59.2 | 37.2 |
| Valve terminal with CDVI5.0-GB8-DN | | | | | | | | | | | |

| Ordering data | | | | |
|---|---|---|---|---|
| | Code | Description | Part No. | Type |
| Individual sub-base valve | | | | |
|  | R | 2/2-way single solenoid valve, single solenoid<br>normally closed,<br>external supply air | **556379** | **CDVI5.0-MT2H-1X2GLS-EXT** |
| | S | 2/2-way single solenoid valve, single solenoid<br>normally open,<br>external supply air | **556380** | **CDVI5.0-MT2H-1X2OLS-EXT** |
| | X | 3/2-way valve, single solenoid<br>normally closed,<br>external supply air | **547013** | **CDVI5.0-MT2H-1X3GLS-EXT** |
| | W | 3/2-way valve, single solenoid<br>normally open,<br>external supply air | **547014** | **CDVI5.0-MT2H-1X3OLS-EXT** |
| | K | 2x 3/2-way valve, single solenoid<br>normally closed | **196661** | **CDVI5.0-MT2H-2x3GLS** |
| | N | 2x 3/2-way valve, single solenoid<br>normally open | **196663** | **CDVI5.0-MT2H-2x3OLS** |
| | H | 2x 3/2-way valve, single solenoid<br>1x normally open, 1x normally closed | **196665** | **CDVI5.0-MT2H-3OLS-3GLS** |
| | M | 5/2-way valve,<br>single solenoid | **196657** | **CDVI5.0-MT2H-5LS** |
| | J | 5/2-way valve,<br>double solenoid | **196659** | **CDVI5.0-MT2H-5JS** |
| | G | 5/3-way valve,<br>mid-position closed | **196651** | **CDVI5.0-MT2H-5/3GS** |
| | B | 5/3-way valve,<br>mid-position pressurised | **196655** | **CDVI5.0-MT2H-5/3BS** |
| | E | 5/3-way valve,<br>mid-position exhausted | **196653** | **CDVI5.0-MT2H-5/3ES** |
|  | A | Blanking plate for vacant valve position<br>Valve terminal only | **193140** | **CDVI5.0-A-P-2** |
| | | | | |
| Sub-bases | | | | |
|  | 1 | Sub-base, individual connection | **534434** | **CDSV5.0-AS-1/8** |

| Ordering data | | | | |
|---|---|---|---|---|
| | Code | Description | Part No. | Type |
| Basic block for multi-pin plug | | | | |
|  | 4 | With 4 valve positions | **196714** | **CDVI5.0-GB4-MP** |
| | 8 | With 8 valve positions | **196690** | **CDVI5.0-GB8-MP** |
| | | | | |
| Basic block for fieldbus | | | | |
|  | 4 | With 4 valve positions | **535840** | **CDVI5.0-GB4-DN** |
| | 8 | With 8 valve positions | **535839** | **CDVI5.0-GB8-DN** |
| | | | | |
| Extension modules for 1 valve position, multi-pin plug | | | | |
|  | B1, D1, F1, H1 | Single solenoid | **548422** | **CDVI5.0-EB1-MP-MO** |
| | B1, D1, F1, H1 | Double solenoid | **548423** | **CDVI5.0-EB1-MP-BI** |
| | P | With separate supply and exhaust ports, single solenoid | **548430** | **CDVI5.0-EB1X-MP-MO** |
| | P | With separate supply and exhaust ports, double solenoid | **548431** | **CDVI5.0-EB1X-MP-BI** |
| | | | | |
| Extension modules for 2 valve positions, multi-pin plug | | | | |
|  | B, D, F, H | Single solenoid | **548428** | **CDVI5.0-EB2-MP-MO** |
| | B, D, F, H | Double solenoid | **554369** | **CDVI5.0-EB2-MP-BI** |
| | – | Double solenoid, with screw kit for 2 and 4 valve positions | **196710** | **CDVI5.0-EB** |
| | P | With separate supply and exhaust ports, single solenoid | **548436** | **CDVI5.0-EB2X-MP-MO** |
| | P | With separate supply and exhaust ports, double solenoid | **554370** | **CDVI5.0-EB2X-MP-BI** |
| | – | With separate supply and exhaust ports, double solenoid, with screw kit for 2 and 4 valve positions | **528609** | **CDVI5.0-EBX** |
| | | | | |
| Extension modules for 1 valve position, fieldbus | | | | |
|  | B1, D1, F1, H1 | Single solenoid | **548424** | **CDVI5.0-EB1-DN-MO** |
| | B1, D1, F1, H1 | Double solenoid | **548426** | **CDVI5.0-EB1-DN-BI** |
| | V | With separate electrical additional supply, single solenoid | **548425** | **CDVI5.0-EB1Z-DN-MO** |
| | V | With separate electrical additional supply, double solenoid | **548427** | **CDVI5.0-EB1Z-DN-BI** |
| | P | With separate supply and exhaust ports, single solenoid | **548432** | **CDVI5.0-EB1X-DN-MO** |
| | P | With separate supply and exhaust ports, double solenoid | **548434** | **CDVI5.0-EB1X-DN-BI** |
| | C | With separate electrical additional supply as well as separate supply and exhaust ports, single solenoid | **548433** | **CDVI5.0-EB1XZ-DN-MO** |
| | C | With separate electrical additional supply as well as separate supply and exhaust ports, double solenoid | **548435** | **CDVI5.0-EB1XZ-DN-BI** |

| Ordering data | | | | |
|---|---|---|---|---|
| | Code | Description | Part No. | Type |
| Extension modules for 2 valve positions, fieldbus | | | | |
|  | B, D, F, H | Single solenoid | **548429** | **CDVI5.0-EB2-DN-MO** |
| | B, D, F, H | Double solenoid | **554371** | **CDVI5.0-EB2-DN-BI** |
| | – | Double solenoid, with screw kit for 2 and 4 valve positions | **536813** | **CDVI5.0-EB-DN** |
| | V | With separate electrical additional supply, single solenoid | **549616** | **CDVI5.0-EB2Z-DN-MO** |
| | V | With separate electrical additional supply, double solenoid | **549619** | **CDVI5.0-EB2Z-DN-BI** |
| | P | With separate supply and exhaust ports, single solenoid | **548437** | **CDVI5.0-EB2X-DN-MO** |
| | P | With separate supply and exhaust ports, double solenoid | **554372** | **CDVI5.0-EB2X-DN-BI** |
| | – | With separate supply and exhaust ports, double solenoid, with screw kit for 2 and 4 valve positions | **536815** | **CDVI5.0-EBX-DN** |
| | C | With separate electrical additional supply as well as separate supply and exhaust ports, single solenoid | **549617** | **CDVI5.0-EB2XZ-DN-MO** |
| | C | With separate electrical additional supply as well as separate supply and exhaust ports, double solenoid | **548438** | **CDVI5.0-EB2XZ-DN-BI** |
| Separator plates | | | | |
|  | B | No duct separation | **196700** | **CDVI5.0-DZ** |
| | D | Duct 1 separated<br>Ducts 3 and 5 open | **196702** | **CDVI5.0-DZP** |
| | F | Duct 1 open<br>Ducts 3 and 5 separated | **196704** | **CDVI5.0-DZR** |
| | H | Ducts 1, 3 and 5 separated | **196706** | **CDVI5.0-DZPR** |
| Left-hand end plate | | | | |
|  | K05 | Electrical multi-pin plug, cable length 5 m | **196692** | **CDVI5.0-EPL-MP-K05** |
| | K10 | Electrical multi-pin plug, cable length 10 m | **196694** | **CDVI5.0-EPL-MP-K10** |
|  | F11 | DeviceNet fieldbus connection | **535838** | **CDVI5.0-EPL-DN:LI** |
| Right-hand end plate | | | | |
|  | – | Internal pilot air supply | **196696** | **CDVI5.0-EPR** |
| | – | External pilot air supply | **196698** | **CDVI5.0-EPR-S** |
| Bus connection | | | | |
|  | – | DeviceNet plug socket/Micro Style connection, M12, 5-pin, straight socket (A-coded), IP65, Pg9 | **18324** | **FBSD-GD-9-5POL** |
|  | – | DeviceNet plug/power supply/Micro Style connection, M12, 5-pin, straight plug (A-coded), IP65, Pg9 | **175380** | **FBS-M12-5GS-PG9** |

| Ordering data | | | | | |
|---|---|---|---|---|---|
| | Code | Description | | Part No. | Type |
| Valve terminal connection | | | | | |
|  | – | Connecting cable WS-WD, angled plug-angled socket | 0.25 m | **540327** | **KVI-CP-3-WS-WD-0,25** |
| | | | 0.5 m | **540328** | **KVI-CP-3-WS-WD-0,5** |
| | | | 2 m | **540329** | **KVI-CP-3-WS-WD-2** |
| | | | 5 m | **540330** | **KVI-CP-3-WS-WD-5** |
| | | | 8 m | **540331** | **KVI-CP-3-WS-WD-8** |
|  | – | Connecting cable GS-GD, straight plug-straight socket | 2 m | **540332** | **KVI-CP-3-GS-GD-2** |
| | | | 5 m | **540333** | **KVI-CP-3-GS-GD-5** |
| | | | 8 m | **540334** | **KVI-CP-3-GS-GD-8** |
| | | | | | |
| Input and output modules | | | | | |
| | – | Input and output modules, CPI system<br>➔ Internet: ctec | | | |
| | | | | | |
| Mounting attachments | | | | | |
|  | Y | Spacer bolt (2 pieces) | | **196718** | **CDVI5.0-STB** |
|  | – | Mounting kit | | **534436** | **CDSV5.0** |
|  | – | Screw kit for attaching the extension modules to the basic block (2 pieces) | for 1 valve position | **548442** | **CDVI5.0-ZA-EB1** |
| | | | for 2 valve positions | **548443** | **CDVI5.0-ZA-EB2** |
| | | | for 3 valve positions | **548444** | **CDVI5.0-ZA-EB3** |
| | | | for 4 valve positions | **548445** | **CDVI5.0-ZA-EB4** |
| | | | for 5 valve positions | **548446** | **CDVI5.0-ZA-EB5** |
| | | | for 6 valve positions | **548447** | **CDVI5.0-ZA-EB6** |
| | | | for 7 valve positions | **548448** | **CDVI5.0-ZA-EB7** |
| | | | for 8 valve positions | **548449** | **CDVI5.0-ZA-EB8** |
| | | | | | |
| Blanking plug | | | | | |
|  | – | Blanking plug | G3⁄8 for end plates | **196712** | **CDVI-5.0-B-G3⁄8** |
| | – | | G1⁄8 for end plates | **196720** | **CDVI-5.0-B-G1⁄8** |
| | – | | for spacer bolt thread | **532476** | **CDVI5.0-B-M6** |
| | | | | | |
| Plug | | | | | |
|  | – | Blanking plug | for tubing O.D. 6 mm | **153268** | **QSC-6H** |
| | – | | for tubing O.D. 8 mm | **153269** | **QSC-8H** |
| | – | | for tubing O.D. 10 mm | **153270** | **QSC-10H** |
| | – | | for tubing O.D. 12 mm | **153271** | **QSC-12H** |
| | | | | | |
| Push-in fittings (10 pieces) | | | | | |
|  | – | Straight, connecting thread M5 for tubing O.D. 4 mm | | **578334** | **NPQH-D-M5-Q4-P10** |
| | B | Straight, connecting thread G1⁄8 for tubing O.D. 6 mm | | **578339** | **NPQH-D-G18-Q6-P10** |
| | A | Straight, connecting thread G1⁄8 for tubing O.D. 8 mm | | **578340** | **NPQH-D-G18-Q8-P10** |
| | – | Straight, connecting thread G3⁄8 for tubing O.D. 12 mm | | **578347** | **NPQH-D-G38-Q12-P10** |
|  | – | Angled, connecting thread M5 for tubing O.D. 4 mm | | **578276** | **NPQH-L-M5-Q4-P10** |
| | D | Angled, connecting thread G1⁄8 for tubing O.D. 6 mm | | **578281** | **NPQH-L-G18-Q6-P10** |
| | C | Angled, connecting thread G1⁄8 for tubing O.D. 8 mm | | **578282** | **NPQH-L-G18-Q8-P10** |
| | – | Angled, connecting thread G3⁄8 for tubing O.D. 12 mm | | **578289** | **NPQH-L-G38-Q12-P10** |

| Ordering data | | | | | |
|---|---|---|---|---|---|
| | Code | Description | | Part No. | Type |
| Manual | | | | | |
|  | D | Pneumatic components – CDVI | German | **197361** | **P.BE-CDVI-DE** |
| | E | | English | **197363** | **P.BE-CDVI-EN** |
| | I | | Italian | **197369** | **P.BE-CDVI-IT** |
| | S | | Spanish | **197367** | **P.BE-CDVI-ES** |
| | V | | Swedish | **197371** | **P.BE-CDVI-SV** |
| | D | Electrical components – CDVI-DN | German | **539044** | **P.BE-CDVI-DN-DE** |
| | E | | English | **539045** | **P.BE-CDVI-DN-EN** |
| | I | | Italian | **539048** | **P.BE-CDVI-DN-IT** |
| | S | | Spanish | **539046** | **P.BE-CDVI-DN-ES** |
| | V | | Swedish | **539049** | **P.BE-CDVI-DN-SV** |