

- Modular valve terminal for a wide range of applications
- Space-saving thanks to smaller valve dimensions
- Easy valve replacement
- Manual override and LED operating status display
- Flow rates of up to 150 l/min
- Variety of pneumatic and electrical connection options

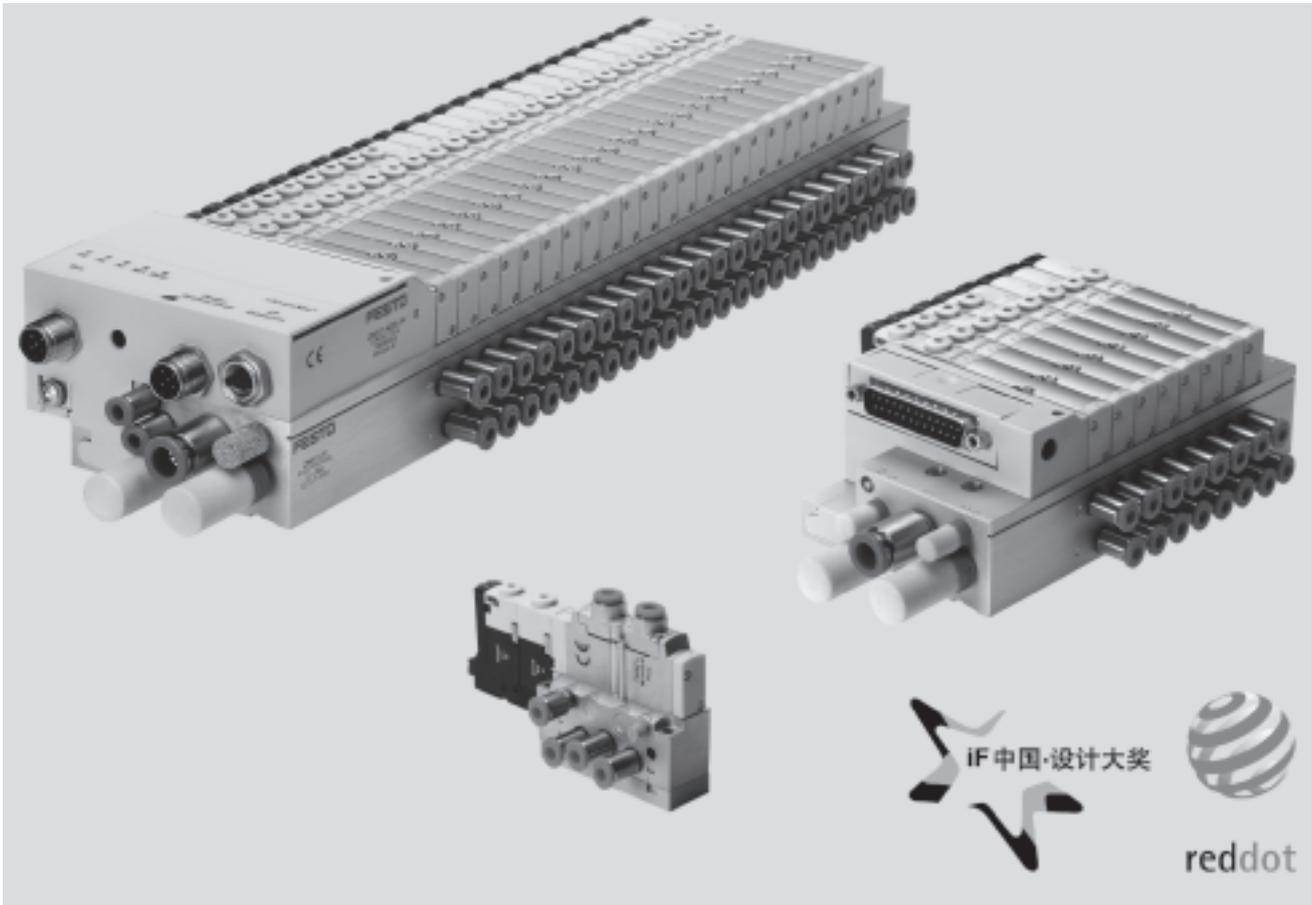
# Valve terminals type 82 CPA-SC, Smart Cubic

Key features

FESTO

Application-optimised valve terminals  
Smart Cubic

3.1



## Innovative

- Compact valve terminal for a wide range of pneumatic applications
- Standardised from the individual valve up to multi-pin plug and fieldbus connections
- Highly versatile during the planning and assembly stages as well as in operational use
- Wide range of selectable valve functions, including valve functions for customised pressure supplies or vacuum application solutions
- Comprehensive, optimally harmonised range of accessories for flow rates of up to 180 l/min

## Versatile

- Room for expansion with 2 ... 24 valve positions on one terminal
- Use of individual valves in combination with an individual block
- The flexibility of the pneumatic working connections facilitates a practical solution to different requirements
- Tubing lines can be connected horizontally to the valve or vertically on the sub-base
- High pressure range -0.9 ... 10 bar
- Wide range of electrical connections for 24 V DC operating voltage

## Reliable

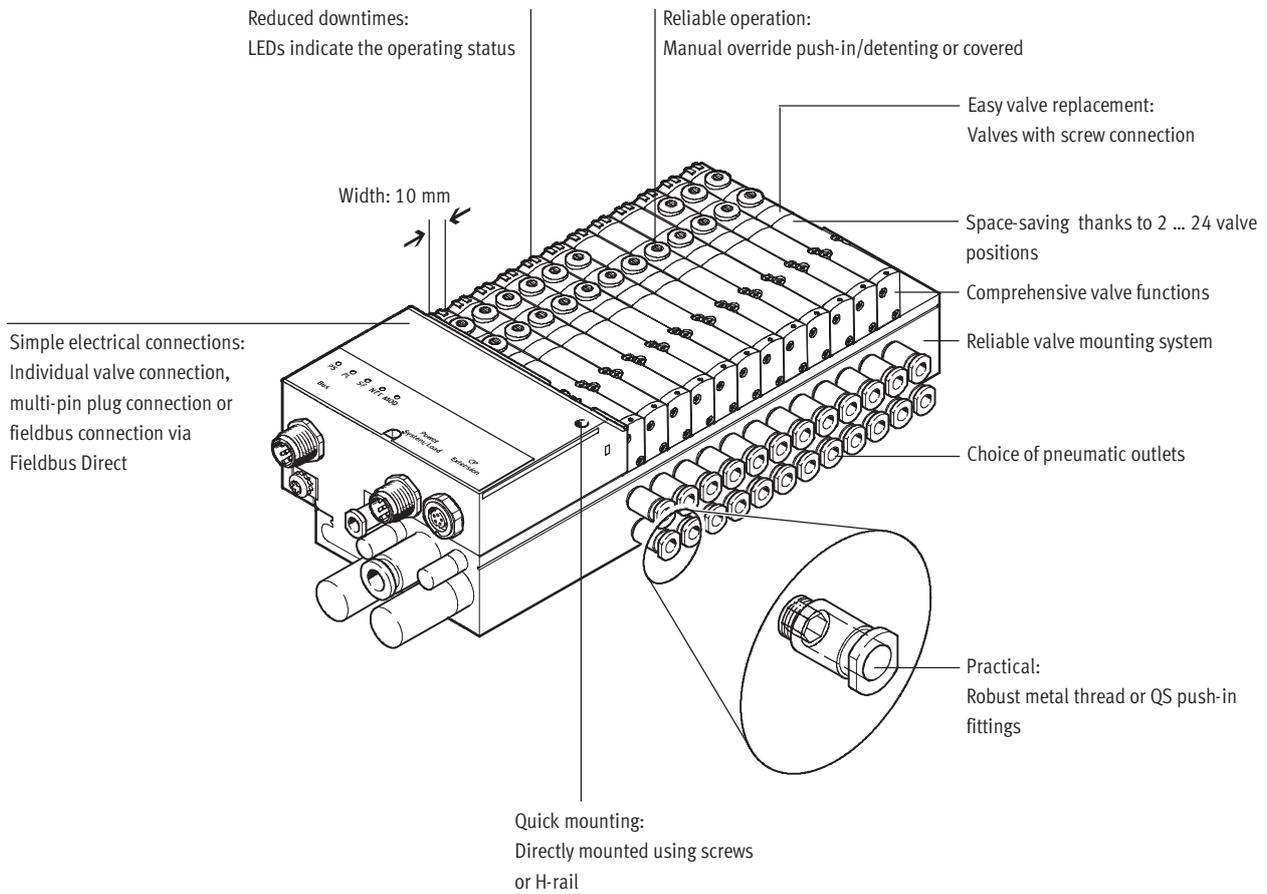
- Manual override facility
- Durable thanks to the use of tried-and-tested piston spool valves
- Sturdy thanks to metal housing and connecting thread
- Fast troubleshooting thanks to LEDs on the valves and diagnosis via fieldbus

## Easy-to-mount

- Ready-to-install unit, already assembled and tested
- Minimised expenditure with regard to ordering, installation and commissioning
- Secure wall mounting or via H-rail

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features



## Equipment options

### Valve functions

- |  |  |  |   |
|--|--|--|---|
| <ul style="list-style-type: none"> <li>• 5/2-way valve, single solenoid</li> <li>• 5/2-way valve, double solenoid</li> <li>• 2x 3/2-way valve, normally open</li> <li>• 2x 3/2-way valve, normally closed</li> </ul> | <ul style="list-style-type: none"> <li>• 5/3-way valve, mid-position pressurised</li> <li>• 5/3-way valve, mid-position closed</li> <li>• 5/3-way valve, mid-position exhausted</li> </ul> | <ul style="list-style-type: none"> <li>• 1x 3/2-way valve, normally closed, external compressed air supply</li> <li>• 2x 2/2-way valve, normally closed, dual compressed air supply</li> </ul> | <p>All valves have the same compact dimensions with an overall length of 91 mm and a width of 10 mm. Valves with a height of 40 mm are available for applications requiring particularly flat variants.</p> |
|--|--|--|---|

### Electrical connection options

#### Individual connection/individual sub-base valve

- Plug-in (PI)
- Horizontal connection (HC)

#### Multi-pin

- Max. 20 valve positions/  
max. 20 solenoid coils
- Sub-D
- Flat cable

#### Fieldbus

- Max. 24 valve positions/  
max. 32 solenoid coils

#### CP string extension

- Further valve terminals from the CPV/CPA range
- Electrical I/O modules

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features

## Valve terminal configurator

Online via: → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

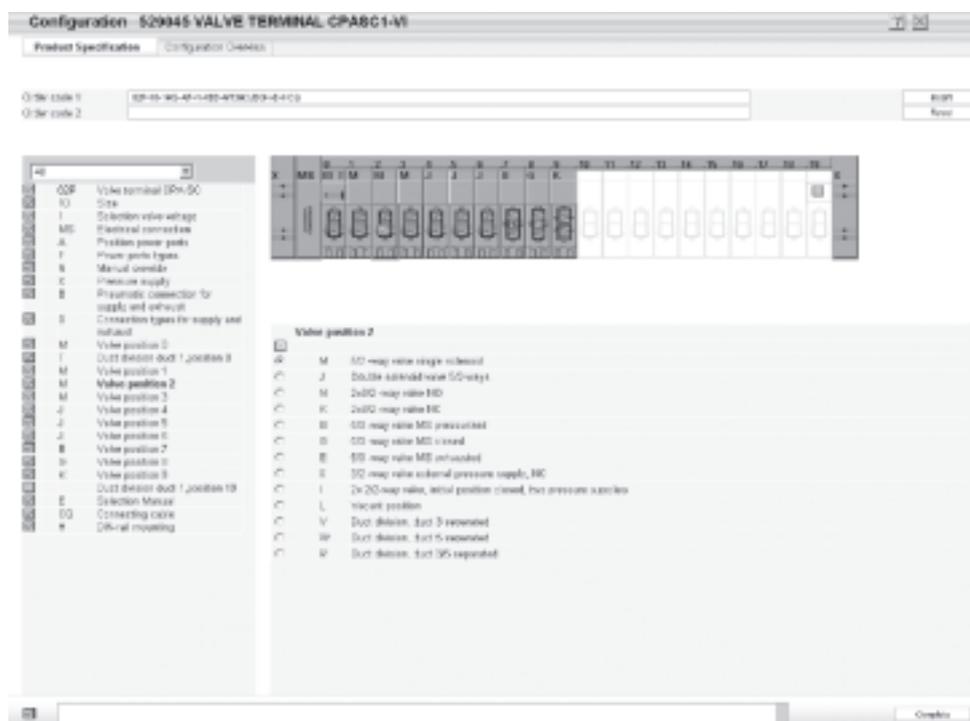
A valve terminal configurator is available to help you select a suitable CPASC valve terminal. This makes it much easier for you to find the right product.

The valve terminals are fully assembled according to your order specifications and individually tested. This reduces the amount of assembly and installation required to a minimum.

A type 82 valve terminal is ordered via a modular order code.

Ordering system for type 82

→ 4 / 3.1-76



The illustration above provides an example of a valve terminal configuration. And this is how you arrive at the order code:

Once you have called up the Festo home page, select the online version of the digital product catalogue from the “Products” submenu: this will bring you directly to the home page for the Pneumatic Catalogue. Activate the “Product Search” menu.

Here you can specify a “Part No.” (e.g. 529045), “Type” (e.g. CPA-SC) or “Article designation” (e.g. valve terminal) to find your “Search result”. Click on the blue shopping basket to complete the selected product according to your specifications (this does not initiate an order). You will then be prompted to configure the product.

Select “Configurator”. You can then configure the valve terminal step by step (from the top down) according to your requirements. Select the “Finish” menu to continue on with the ordering process.

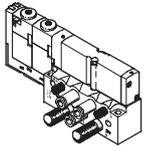
# Valve terminals type 82 CPA-SC, Smart Cubic

Key features



## Individual connection

Valve on individual sub-base



Valves can also be used on an individual block for actuators further away from the valve terminal.

With an individual electrical connection, the plug is connected directly to the valve. Two electrical connection types are available for the valve terminal and for the individual block:

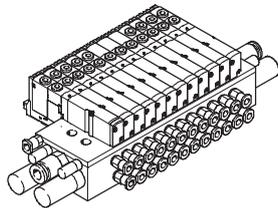
- Horizontal connection (HC)

Version SH:

The electrical connection can be plugged in directly on the valve.

- Plug-in (PI)  
Version SP, SQ:  
The connector plug is mounted on an adapter. This adapter is then attached to the manifold block.

## Valves pneumatically linked on manifold sub-base

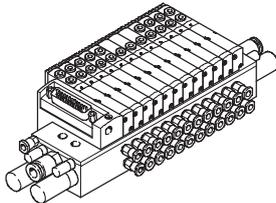


Connection is independent of the control technology used. This ensures correct polarity during installation.

The valve is equipped with an LED which indicates switching status, and an overvoltage protective circuit. It also features a built-in current reduction circuit.

Individual connection permits the selection of 2 to 32 solenoid coils (divided between 2 to 16 valve positions, including in uneven gradations).

## Multi-pin plug connection



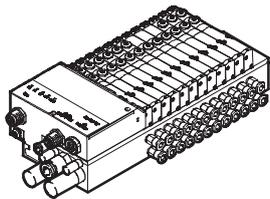
Control signals from the controller to the valve terminal are transmitted via a pre-assembled multi-core cable, which substantially reduces installation time.

These valve terminals can be fitted with 2 to 20 solenoid coils.

Variants

- Sub-D connection
- Flat cable connection

## Fieldbus Direct



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

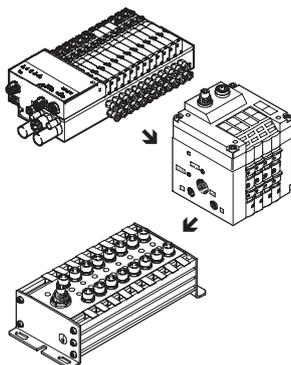
The fieldbus node is directly integrated in the electrical interface of the valve terminal and therefore takes up only a minimal amount of space.

The CP string extension option allows the functions and components of the CP installation system to be used. Valve terminals with fieldbus interfaces can be equipped with 4 to 24 valve positions and 4 to 32 solenoid coils.

Variants

- DeviceNet connection
- Profibus connection
- 4 to 32 solenoid coils

## CP string extension



The optional string extension allows additional valve terminals and I/O modules to be connected to the fieldbus node of the CPA-SC. 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:

- 32 input signals

- 32 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 modules

➔ 4 / 4.7-2

# Valve terminals type 82 CPA-SC, Smart Cubic

Peripherals overview



## Overview – CPA-SC valve terminal

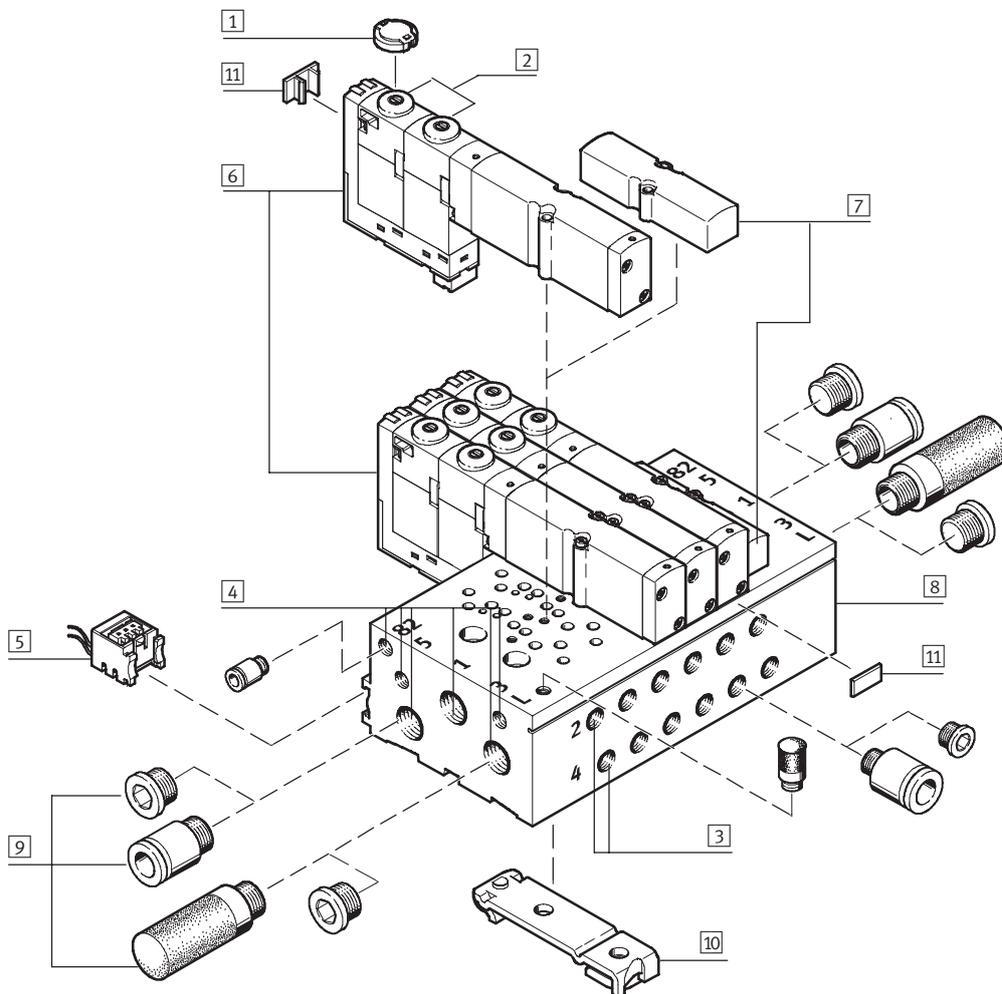
Valve terminal with individual plug-in (PI) electrical connections

Code: IP, IQ

Valve terminals with individual plug-in (PI) electrical connections are available in sizes for 2 to max. 16 valve positions. Each valve position can either be equipped with a valve or a blanking plate.

With an individual PI connection, the connector plug remains on the manifold block. This avoids the valve being connected incorrectly in the event of a recommissioning.

## CPA-SC valve terminal with sub-base valves



- |  |  |   |   |
|--|--|---|---|
| <ul style="list-style-type: none"> <li>1 Cover for manual override (optional)</li> <li>2 Manual override (per solenoid coil, push-in/rotary-detenting)</li> <li>3 Working lines (2, 4) on the manifold block (per valve position)</li> </ul> | <ul style="list-style-type: none"> <li>4 Supply ports (1, 12/14), exhaust ports (3, 5, 82/84) and pressure compensating port (L) on the left-hand and right-hand side of the manifold block</li> </ul> | <ul style="list-style-type: none"> <li>5 Individual plug-in (PI) connection</li> <li>6 Valve</li> <li>7 Cover for vacant position (blanking plate)</li> <li>8 Manifold block for sub-base valves</li> </ul> | <ul style="list-style-type: none"> <li>9 Connectors, silencers and blanking plugs</li> <li>10 H-rail mounting</li> <li>11 Inscription labels</li> </ul> |
|--|--|---|---|

# Valve terminals type 82 CPA-SC, Smart Cubic

Peripherals overview

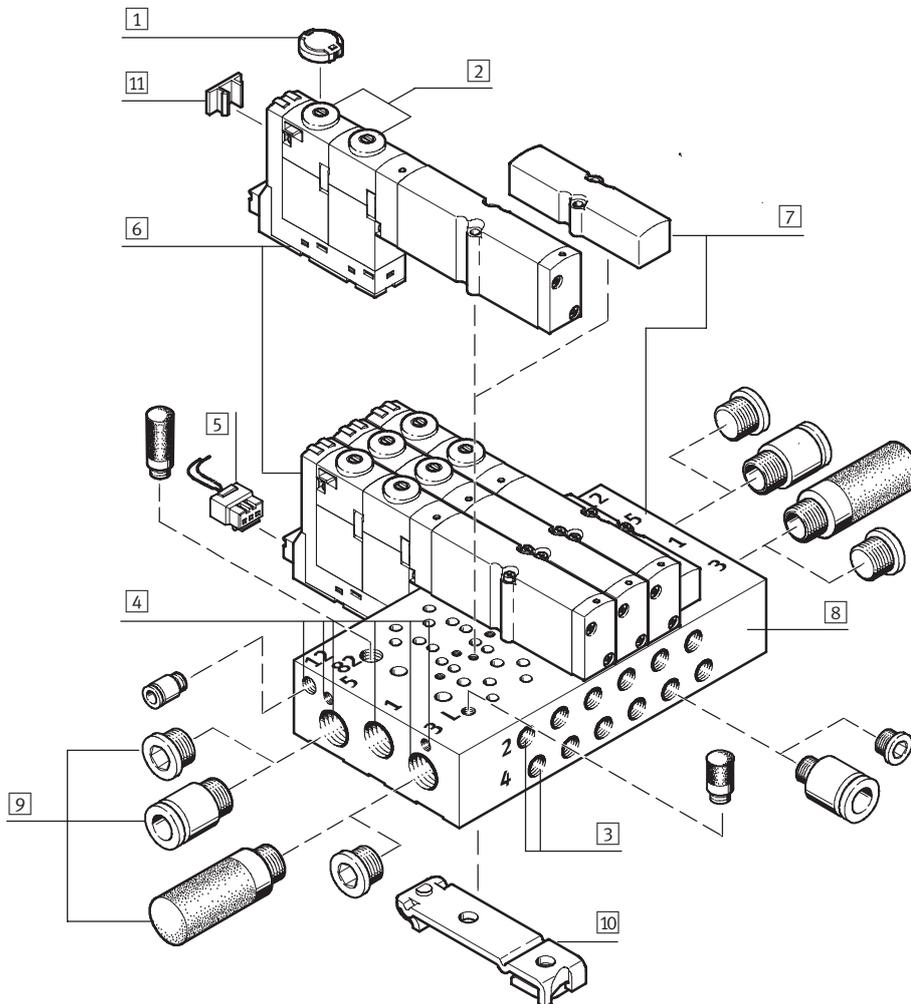
## Valve terminal with individual horizontal (HC) electrical connections

Code: IH

Valve terminals with individual horizontal electrical connections (HC) are available in sizes for 2 to max. 16 valve positions. Each valve position can either be equipped with a valve or a blanking plate.

With an individual horizontal connection, the electrical connection for a valve must be removed when the valve is being replaced.

## CPA-SC valve terminal with sub-base valves



- |   |   |   |  |
|---|---|---|--|
| <p>1 Cover for manual override (optional)</p> <p>2 Manual override (per solenoid coil, push-in/rotary-detenting)</p> <p>3 Working lines (2, 4) on the manifold block (per valve position)</p> | <p>4 Supply ports (1, 12/14), exhaust ports (3, 5, 82/84) and pressure compensating port (L) on the left-hand and right-hand side of the manifold block</p> | <p>5 Individual horizontal connection (HC)</p> <p>6 Valve</p> <p>7 Cover for vacant position (blanking plate)</p> | <p>8 Manifold block for sub-base valves</p> <p>9 Connectors, silencers and blanking plugs</p> <p>10 H-rail mounting</p> <p>11 Inscription labels</p> |
|---|---|---|--|

# Valve terminals type 82 CPA-SC, Smart Cubic

Peripherals overview



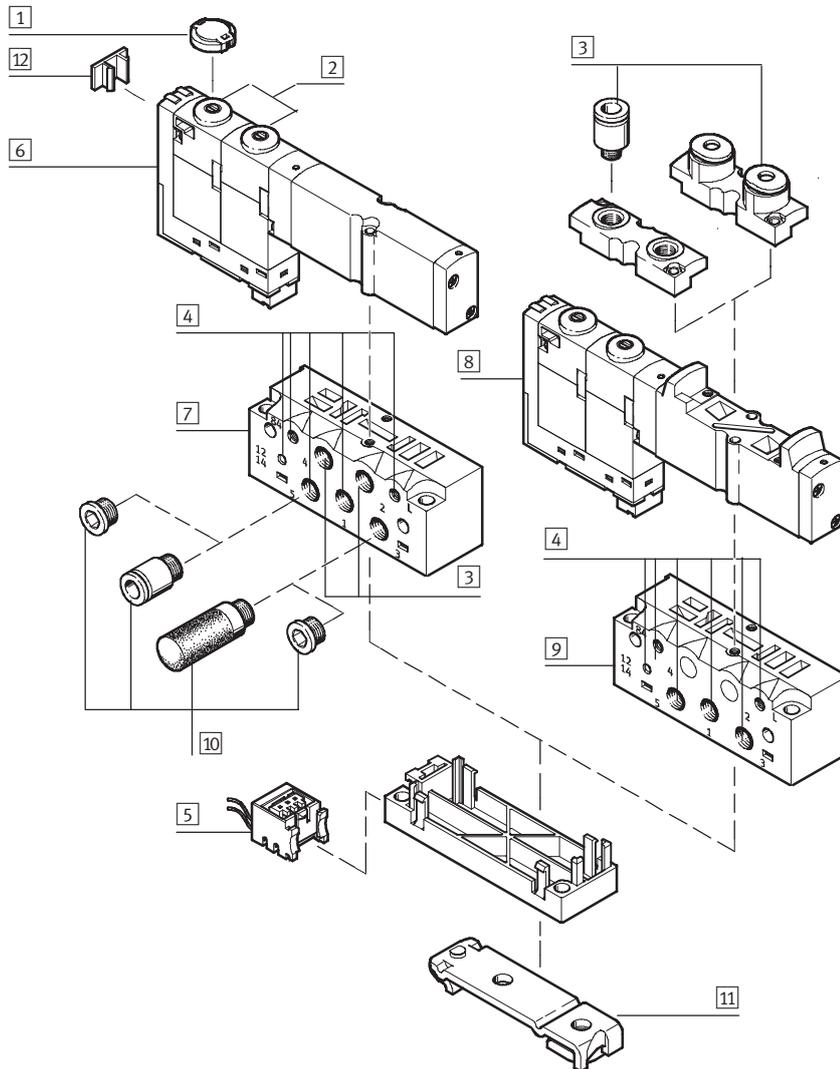
## Overview – CPA-SC individual block

Individual block with individual plug-in (PI) electrical connection

Code: SP, SQ

With an individual PI connection, the connector plug remains on the manifold block.

## CPA-SC individual block with sub-base valve or semi in-line valve



- |   |   |   |   |
|---|---|---|---|
| 1 Cover for manual override (optional)  | 4 Supply ports (1, 12/14), exhaust ports (3, 5, 82/84) and pressure compensating port (L) on the individual block | 6 Sub-base valve                          | 10 Connectors, silencers and blanking plugs |
| 2 Manual override (per solenoid coil, push-in/rotary-detenting)                       | 5 Individual horizontal connection (HC)   | 7 Individual block for sub-base valve     | 11 H-rail mounting                          |
| 3 Working lines (2, 4) on the individual block or on the valve (semi in-line version) |   | 8 Semi in-line valve                      | 12 Inscription label                        |
|   |   | 9 Individual block for semi in-line valve |   |

# Valve terminals type 82 CPA-SC, Smart Cubic

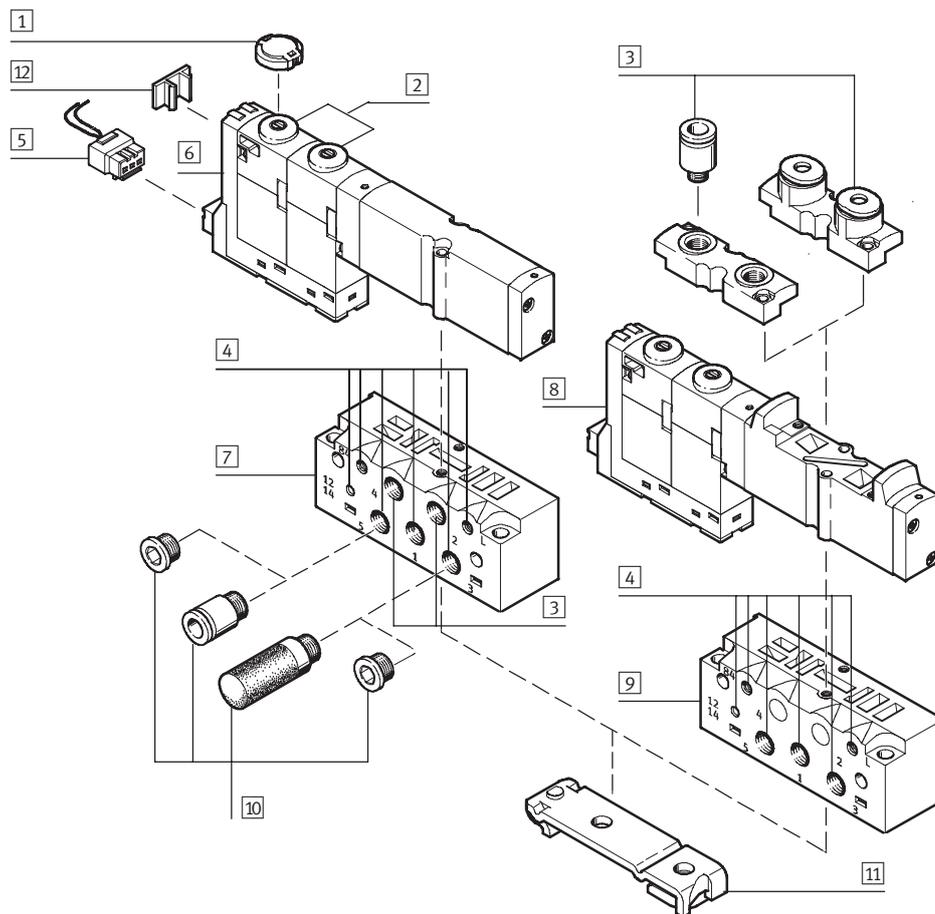
Peripherals overview

## Individual block with individual horizontal electrical connection (HC)

Code: SH

With an individual horizontal connection, the electrical connection for a valve must be removed when the valve is being replaced.

## CPA-SC individual block with sub-base valve or semi in-line valve



- |   |   |   |   |
|---|---|---|---|
| 1 Cover for manual override (optional)  | 4 Supply ports (1, 12/14), exhaust ports (3, 5, 82/84) and pressure compensating port (L) on the individual block | 6 Sub-base valve                          | 10 Connectors, silencers and blanking plugs |
| 2 Manual override (per solenoid coil, push-in/rotary-detenting)                       | 5 Individual horizontal connection (HC)   | 7 Individual block for sub-base valve     | 11 H-rail mounting                          |
| 3 Working lines (2, 4) on the individual block or on the valve (semi in-line version) |   | 8 Semi in-line valve                      | 12 Inscription label                        |
|   |   | 9 Individual block for semi in-line valve |   |

# Valve terminals type 82 CPA-SC, Smart Cubic

Peripherals overview

## Overview – CPA-SC valve terminal

Valve terminal with electrical multi-pin plug connection

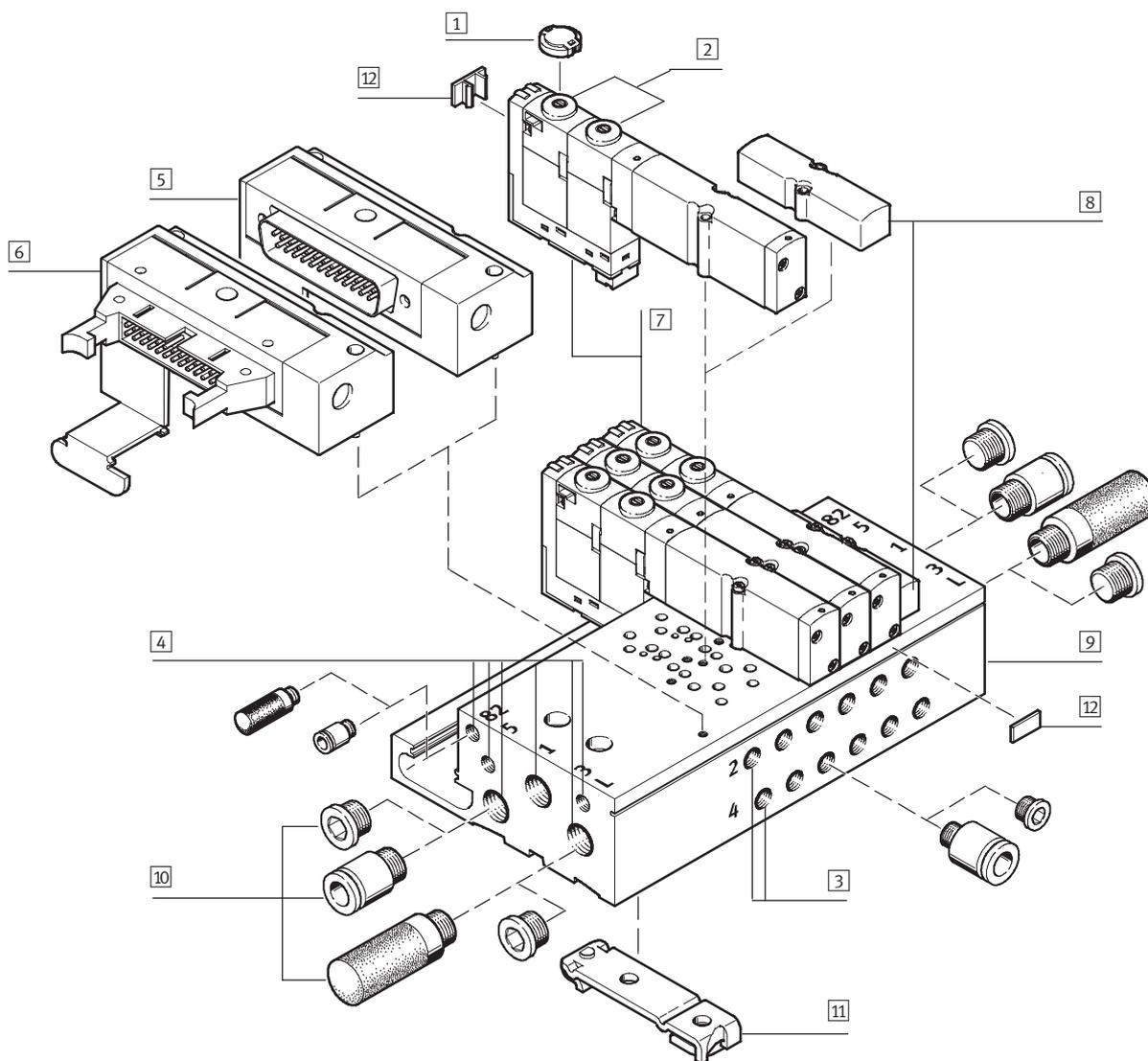
- 25-pin Sub-D multi-pin plug connection  
Code: MS
- or
- 26-pin multi-pin plug connection with connector for flat cable  
Code: MF

Valve terminals with electrical multi-pin plug connection are available in sizes for 2 to max. 20 valve positions (code: MS) or for 4 to max. 20 valve positions (code: MF). Each valve position can either be equipped with a valve or a blanking plate.

A maximum of 20 valve solenoid coils can be actuated via the electrical multi-pin plug connection.

The electrical connection is located on the left-hand side. It can be rotated by 90°, thereby allowing flush mounting of the system.

## CPA-SC valve terminal with sub-base valves



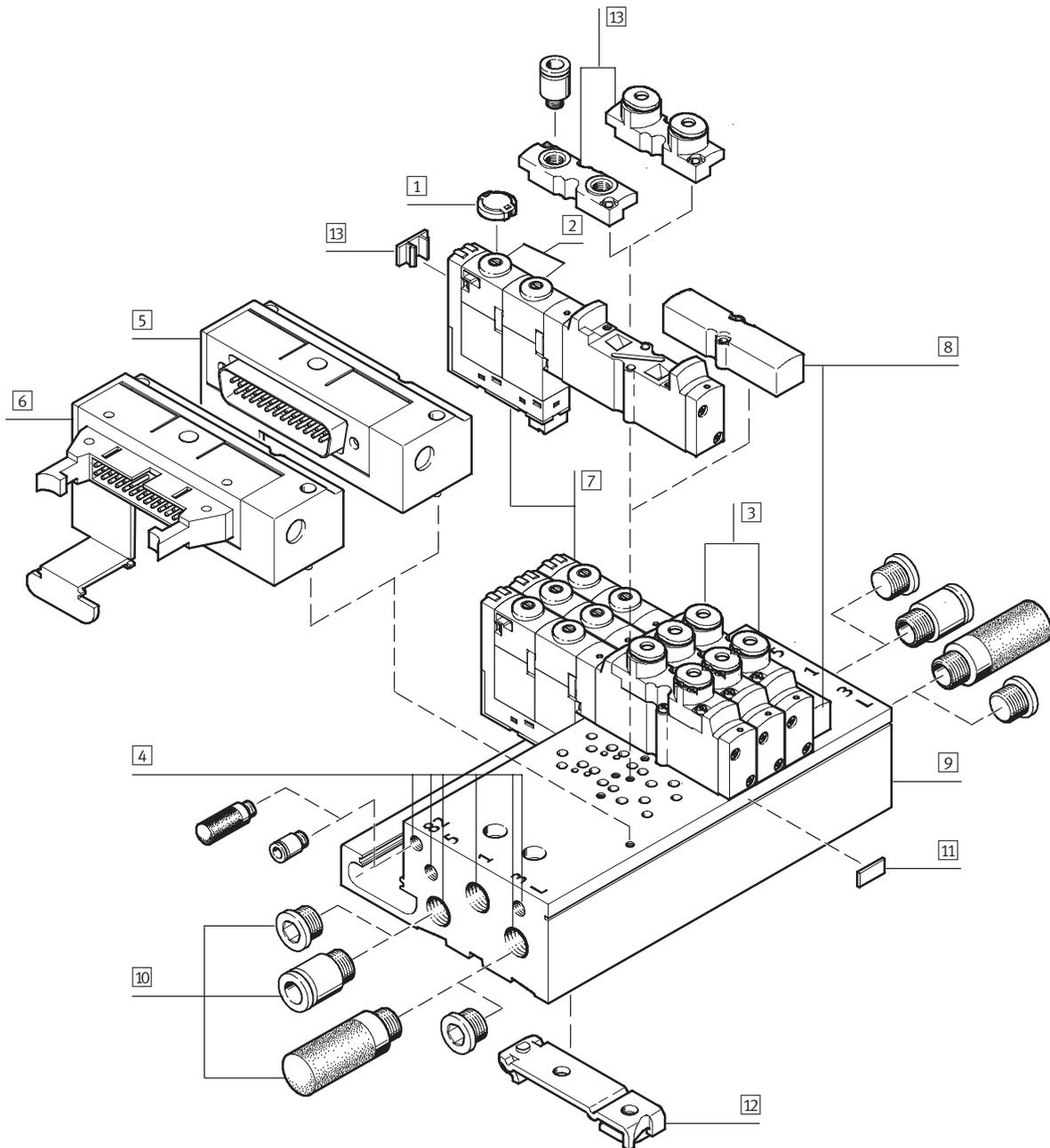
- |   |  |   |   |
|---|--|---|---|
| 1 Cover for manual override (optional)                            | 4 Supply ports (1, 12/14), exhaust ports (3, 5, 82/84) and pressure compensating port (L) on the left-hand and right-hand side of the manifold block | 6 Multi-pin plug connection with connector for flat cable | 9 Manifold block for sub-base valves        |
| 2 Manual override (per solenoid coil, push-in/rotary-detenting)   | 5 Multi-pin plug connection Sub-D  | 7 Valve   | 10 Connectors, silencers and blanking plugs |
| 3 Working lines (2, 4) on the manifold block (per valve position) |  | 8 Cover for vacant position (blanking plate)              | 11 H-rail mounting                          |
|   |  |   | 12 Inscription labels                       |

# Valve terminals type 82 CPA-SC, Smart Cubic

Peripherals overview

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## CPA-SC valve terminal with semi in-line valves



- |   |  |   |   |
|---|--|---|---|
| <p>1 Cover for manual override (optional)</p> <p>2 Manual override (per solenoid coil, push-in/rotary-detenting)</p> <p>3 Working lines (2, 4) on the valve</p> | <p>4 Supply ports (1, 12/14), exhaust ports (3, 5, 82/84) and pressure compensating port (L) on the left-hand and right-hand side of the manifold block</p> <p>5 Multi-pin plug connection Sub-D</p> | <p>6 Multi-pin plug connection with connector for flat cable</p> <p>7 Valve</p> <p>8 Cover for vacant position (blanking plate)</p> <p>9 Manifold block for semi in-line valves</p> | <p>10 Connectors, silencers and blanking plugs</p> <p>11 Inscription labels</p> <p>12 H-rail mounting</p> <p>13 Pneumatic connection plates for semi in-line valves</p> |
|---|--|---|---|

# Valve terminals type 82 CPA-SC, Smart Cubic

Peripherals overview



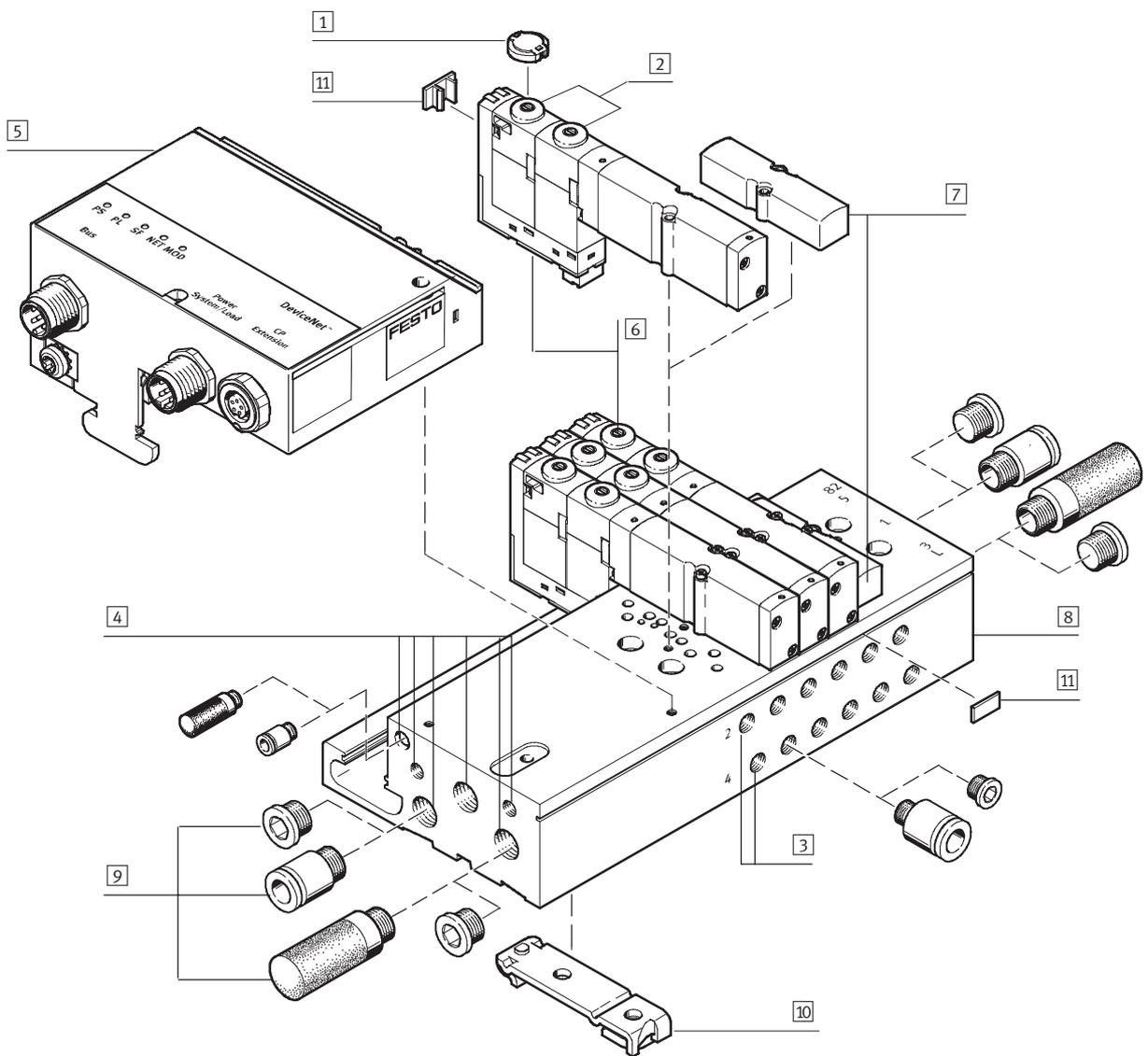
## Overview – CPA-SC valve terminal Valve terminal with Fieldbus Direct

Valve terminals with fieldbus connection are available in sizes for 4 to max. 24 valve positions.

Each valve position can either be equipped with a valve or a blanking plate.

A maximum of 32 valve solenoid coils can be actuated via the fieldbus connection.

### CPA-SC valve terminal with sub-base valves



- |   |  |  |  |
|---|--|--|--|
| 1 Cover for manual override (optional)                            | 4 Supply ports (1, 12/14), exhaust ports (3, 5, 82/84) and pressure compensating port (L) on the left-hand and right-hand side of the manifold block | 6 Valve                                      | 9 Connectors, silencers and blanking plugs |
| 2 Manual override (per solenoid coil, push-in/rotary-detenting)   | 5 Fieldbus Direct  | 7 Cover for vacant position (blanking plate) | 10 H-rail mounting                         |
| 3 Working lines (2, 4) on the manifold block (per valve position) |  | 8 Manifold block for sub-base valves         | 11 Inscription labels                      |

Application-optimised valve terminals  
Smart Cubic

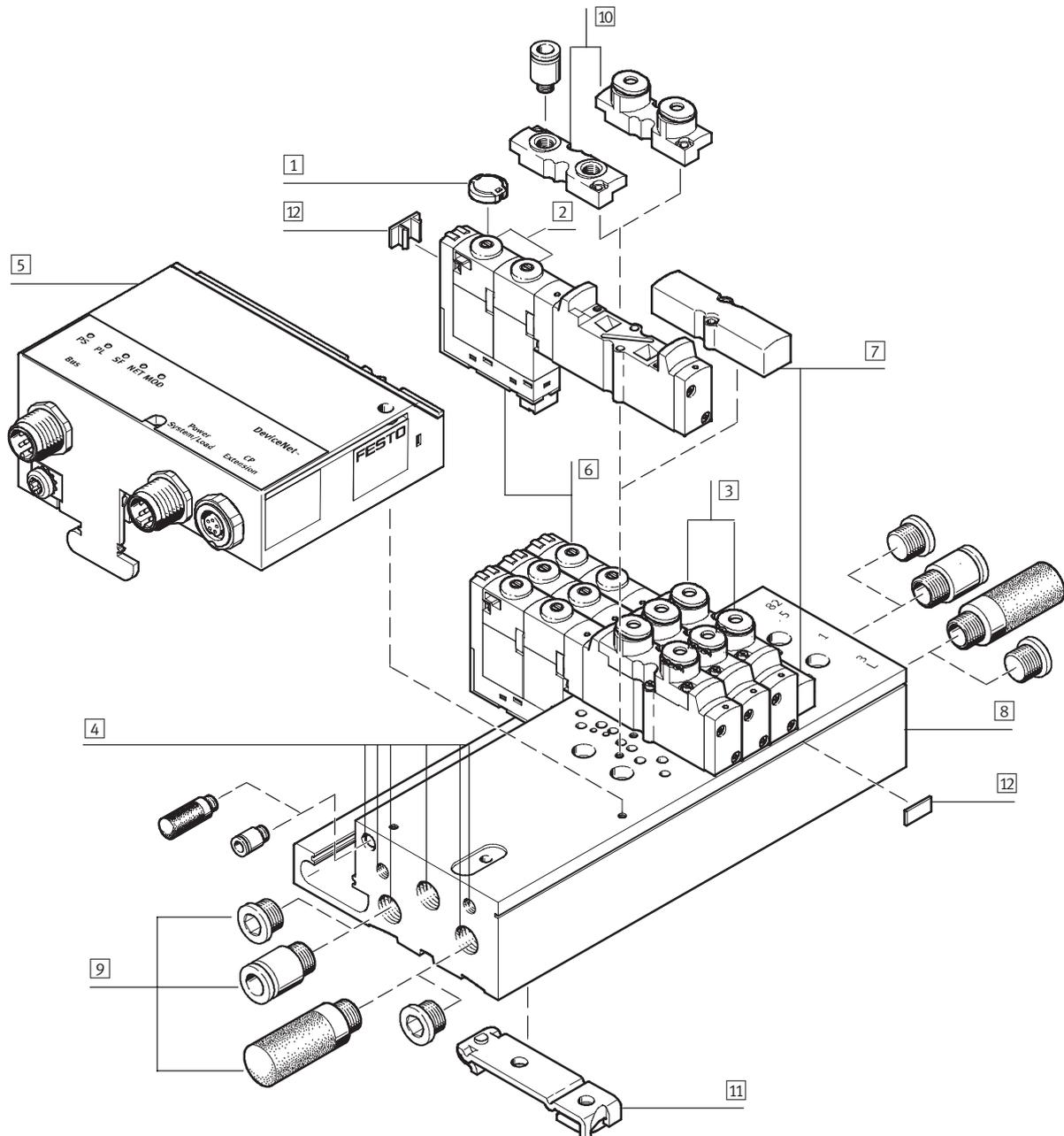
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# Valve terminals type 82 CPA-SC, Smart Cubic

Peripherals overview

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## CPA-SC valve terminal with semi in-line valves



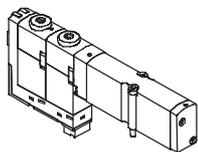
- |   |  |  |  |
|---|--|--|--|
| <p>1 Cover for manual override (optional)</p> <p>2 Manual override (per solenoid coil, push-in/rotary-detenting)</p> <p>3 Working lines (2, 4) on the valve</p> | <p>4 Supply ports (1, 12/14), exhaust ports (3, 5, 82/84) and pressure compensating port (L) on the left-hand and right-hand side of the manifold block</p> <p>5 Fieldbus Direct</p> | <p>6 Valve</p> <p>7 Cover for vacant position (blanking plate)</p> <p>8 Manifold block for semi in-line valves</p> | <p>9 Connectors, silencers and blanking plugs</p> <p>10 Pneumatic connection plates for semi in-line valves</p> <p>11 H-rail mounting</p> <p>12 Inscription labels</p> |
|---|--|--|--|

## Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Pneumatic components

### Valves

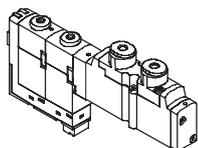
#### Sub-base valve



Sub-base valves can be quickly replaced since the tubing connections remain on the manifold block.

This design is also particularly slim.

#### Semi in-line valve (with working ports on the valve)



With semi in-line valves the pneumatic connections are on the top. This means that elbow connectors are not needed.

There are sub-base valves and semi in-line valves with one solenoid coil (single solenoid) or with two solenoid coils (double solenoid) irrespective of the valve function.

#### Blanking plate

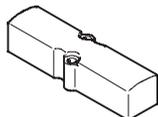
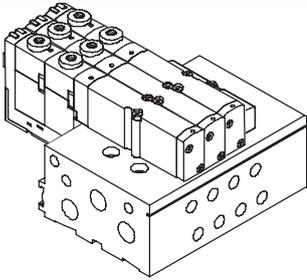
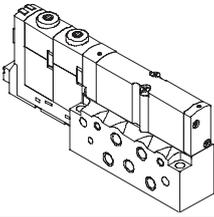
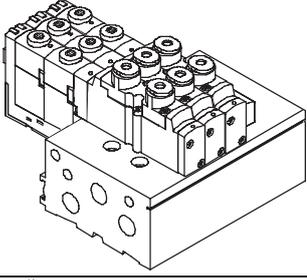
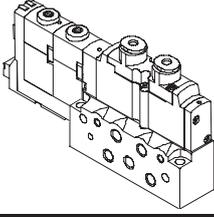


Plate without valve function for reserving valve positions on a valve terminal.

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

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Pneumatic components

Manifold blocks			
Manifold block		Number of valve positions	Manifold block connections
Code A – Working ports (2, 4) on the manifold block			
Manifold block for sub-base valves and blanking plates		2 ... 20	<ul style="list-style-type: none"> <li>• With working ports (2, 4), M5 threaded hole</li> <li>• With ports for supply air (1, 12/14) and exhaust air (3, 5, 82/84)</li> <li>• With pressure compensating port (L)</li> </ul>
Individual sub-base for sub-base valve		1	
Code P – Working ports (2, 4) on the valve			
Manifold block for semi in-line valves and blanking plates		2 ... 20	<ul style="list-style-type: none"> <li>• Without working ports</li> <li>• With ports for supply air (1, 12/14) and exhaust air (3, 5, 82/84)</li> <li>• With pressure compensating port (L)</li> </ul>
Individual sub-base for semi in-line valve		1	

 Note  
Semi in-line valves can also be mounted on manifold blocks for sub-base valves. In this case the corresponding working ports on the manifold block must be sealed using blanking plugs.

The compressed air supply and exhaust air outlet for the valve terminal can either be on the left-hand side or the right-hand side of the valve terminal. Supply at both sides is also possible. Ports that are not required must be sealed with a blanking plug.

An individual sub-base is the ideal solution in cramped space conditions. All available valve types can be used.

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Pneumatic components



Application-optimised valve terminals  
Smart Cubic

## 3.1

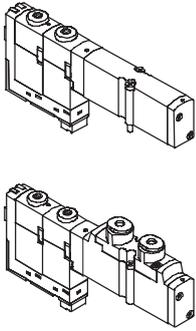
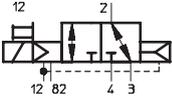
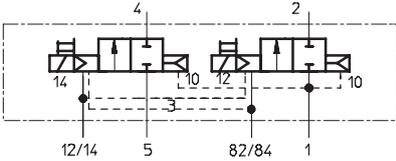
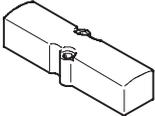
Valves		Code	Circuit symbol	Size 10	Description
	M		■	5/2-way valve, single solenoid • Pneumatic spring return	
	J		■	5/2-way valve, double solenoid	
	N		■	2x 3/2-way valve, single solenoid • Normally open • Pneumatic spring return	
	K		■	2x 3/2-way valve, single solenoid • Normally closed • Pneumatic spring return	
	B		■	5/3-way valve • Mid-position pressurised <sup>1)</sup> • Mechanical spring return The piston rod of a connected cylinder advances when the valve is in the normal position due to the differential piston areas.	
	G		■	5/3-way valve • Mid-position closed <sup>1)</sup> • Mechanical spring return The piston rod side of a connected cylinder remains held under pressure when the valve is in the normal position.	
	E		■	5/3-way valve • Mid-position exhausted <sup>1)</sup> • Mechanical spring return The piston rod of a connected cylinder remains freely movable when the valve is in the normal position.	

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

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Pneumatic components



Valves				
	Code	Circuit symbol	Size 10	Description
	X		■	1x 3/2-way valve <ul style="list-style-type: none"> <li>• Normally closed</li> <li>• External compressed air supply</li> <li>• Pneumatic spring return</li> </ul> Compressed air (–0.9 ... +10 bar) supplied at working port 4 can be switched.
	I		■	2x 2/2-way valve <ul style="list-style-type: none"> <li>• Normally closed</li> <li>• Normally closed, reversible</li> <li>• Pneumatic spring return</li> </ul> – The vacuum is connected at port 5 – Port 14 switches the vacuum – Port 12 switches the ejector pulse – An external T-connection must be established between port 2, 4 and the vacuum generator
	L		■	Blanking plate for vacant position For valve terminal only

 Note

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

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Pneumatic components

## Constructional design

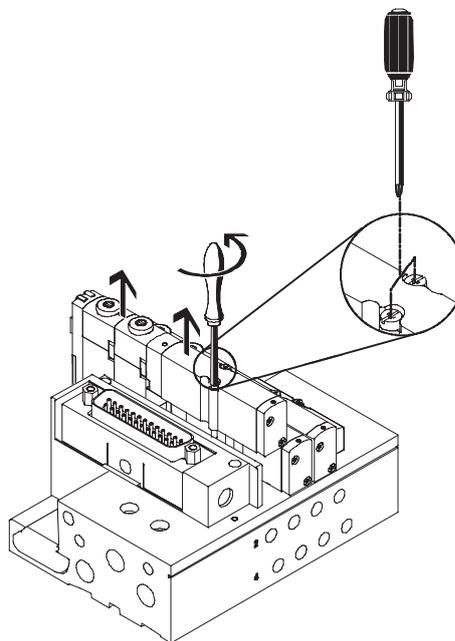
### Valve replacement

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

### Expansion

Vacant positions can be replaced by valves at a later date. The dimensions, mounting points and existing pneumatic installations remain unchanged by this.

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

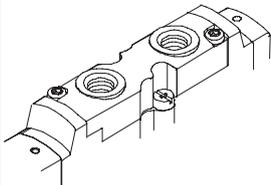
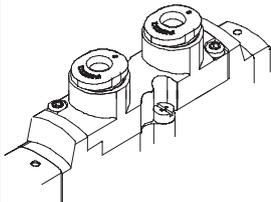


-  - Note

### Plug-in versions

If a vacant position is replaced by a valve, a plug-in socket must also be ordered and inserted into the slot.

When ordering a HC terminal, you must determine the number and length of connecting cable you need and specify them in the order code.

Working port		
	Code	Description
	B	M5 threaded connection
	E	QS-3 push-in connector
	F	QS-4 push-in connector

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Pneumatic components



## Pneumatic connection Supply and exhaust

The valves are supplied with compressed air via various valve terminal manifold blocks or individual blocks.

These contain common lines for compressed air supply, exhaust and pilot exhaust for all valves.

The common lines on a CPA-SC valve terminal can be connected

- at the left (code L)
- at the right (code R) or
- at both ends (code B)

## Pilot air

The CPA-SC valve terminal is suitable for internal or external pilot air. Graphs → 4 / 3.1-57

**Internal pilot air**  
If supply pressure for the CPA-SC valve is within a range of 3 to 8 bar, it can be operated with internally distributed pilot air. The pilot air in the left-hand end plate (electrical multi-pin plug connection and Fieldbus Direct) or in the right-hand end plate (individual electrical connection) is branched off from port 1 in this case.

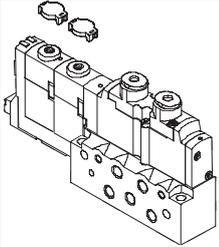
**External pilot air**  
If supply pressure for the CPA-SC valve terminal is within a range of –0.9 to +10 bar, it must be operated with external pilot air. The pilot air is supplied via port 12/14 in this case.

Pneumatic supply						
With CPA-SC valve terminal	Code	Port	Connections for supply and exhaust			
			Designation	Code H QS connection metric, 8 mm Type	Code D Threaded connection G1/8 Type	
	<b>Compressed air supplied by means of internal pilot air, exhausting via silencer</b>					
	S	1	Compressed air/vacuum supply	Push-in fitting	QS-G1/8-8-I	–
		3/5	Exhaust air	Silencer	UC-1/8	–
		12/14	Pilot air	–	–	–
		82/84	Pilot exhaust air	Silencer	UC-M5	–
		L	Pressure relieving port	Silencer	UC-M5	–
	<b>Compressed air supplied via external pilot air, exhausting via silencer</b>					
	T	1	Compressed air/vacuum supply	Push-in fitting	QS-G1/8-8-I	–
		3/5	Exhaust air	Silencer	UC-1/8	–
		12/14	Pilot air	Push-in fitting	QSM-M5-4-I	–
		82/84	Pilot exhaust air	Silencer	UC-M5	–
		L	Pressure relieving port	Silencer	UC-M5	–
	<b>Compressed air supplied by means of internal pilot air, ducted exhaust</b>					
	V	1	Compressed air/vacuum supply	Push-in fitting	QS-G1/8-8-I	–
		3/5	Exhaust air	Push-in fitting	QS-G1/8-8-I	–
		12/14	Pilot air	–	–	–
		82/84	Pilot exhaust air	Push-in fitting	QSM-M5-4-I	–
		L	Pressure relieving port	Silencer	UC-M5	–
	<b>Compressed air supplied via external pilot air, ducted exhaust</b>					
	X	1	Compressed air/vacuum supply	Push-in fitting	QS-G1/8-8-I	–
3/5		Exhaust air	Push-in fitting	QS-G1/8-8-I	–	
12/14		Pilot air	Push-in fitting	QSM-M5-4-I	–	
82/84		Pilot exhaust air	Push-in fitting	QSM-M5-4-I	–	
L		Pressure relieving port	Silencer	UC-M5	–	

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Pneumatic components



Pneumatic supply						
With CPA-SC individual block	Code	Port	Connections for supply and exhaust			
			Designation	Code B Threaded connection M5 Type	Code F Push-in connector QS4 Type	
	Compressed air supplied by means of internal pilot air, exhausting via silencer					
	S	1	Compressed air/vacuum supply	Push-in fitting	–	QSM-M5-4-I
		3/5	Exhaust air	Silencer	–	UC-M5
		12/14	Pilot air	–	–	–
		82/84	Pilot exhaust air	Silencer	–	U-M3
		L	Pressure relieving port	Silencer	–	U-M3
	Compressed air supplied via external pilot air, exhausting via silencer					
	T	1	Compressed air/vacuum supply	Push-in fitting	–	QSM-M5-4-I
		3/5	Exhaust air	Silencer	–	UC-M5
		12/14	Pilot air	Push-in fitting	–	QSM-M3-3-I
		82/84	Pilot exhaust air	Silencer	–	U-M3
		L	Pressure relieving port	Silencer	–	U-M3
	Compressed air supplied by means of internal pilot air, ducted exhaust					
	V	1	Compressed air/vacuum supply	Push-in fitting	–	QSM-M5-4-I
		3/5	Exhaust air	Push-in fitting	–	QSM-M5-4-I
		12/14	Pilot air	–	–	–
		82/84	Pilot exhaust air	Push-in fitting	–	QSM-M3-3-I
		L	Pressure relieving port	Silencer	–	U-M3
	Compressed air supplied via external pilot air, ducted exhaust					
	X	1	Compressed air/vacuum supply	Push-in fitting	–	QSM-M5-4-I
3/5		Exhaust air	Push-in fitting	–	QSM-M5-4-I	
12/14		Pilot air	Push-in fitting	–	QSM-M3-3-I	
82/84		Pilot exhaust air	Push-in fitting	–	QSM-M3-3-I	
L		Pressure relieving port	Silencer	–	U-M3	

-  - Note

The port L compensates the pressure between moving parts inside the valve and the surrounding environment.

A silencer protects against contamination.  
The port L must not be sealed by blanking plugs at both ends.

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Pneumatic components

## Instructions for using pressure zones

The CPA-SC valve terminal can be operated with a maximum of 2 pressure zones, supplied either from the left or from the right.

Pressure zones are created by means of separators that can be used in the following ducts:

- Supply duct 1 (code T) and
- exhaust duct 3 (code V) or
- exhaust duct 5 (code W) or
- exhaust duct 3 and 5 (code R)

## Pilot air

The pilot air is branched off from port 1 in the left-hand end plate (electrical multi-pin plug connection and Fieldbus Direct) or in the right-hand end plate (individual electrical connection).

Internal pilot air is only possible at an operating pressure within a range of 3 to 8 bar.

It must therefore be noted in connection with pressure zone separation

that the valve terminal is supplied with internal pilot air via the left-hand side when using a multi-pin plug connection and Fieldbus Direct and via the right-hand side when using an

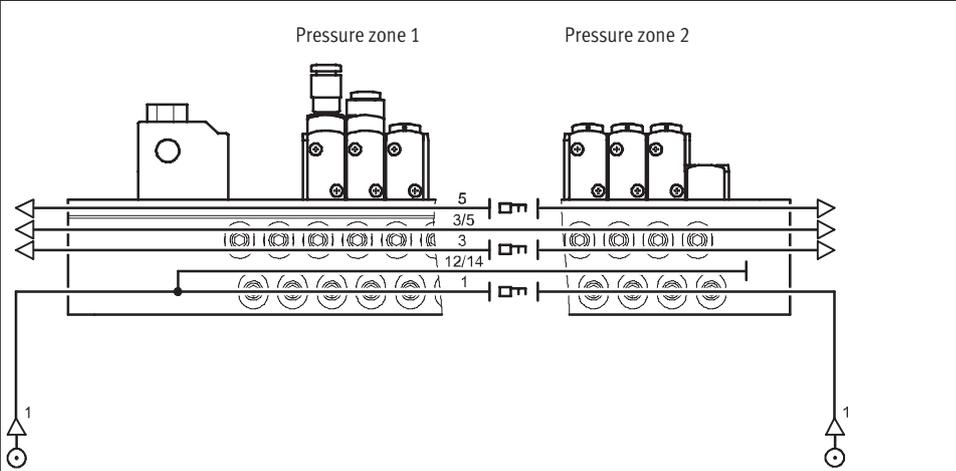
individual electrical connection. This means that the operating pressure at this port must be within a range of 3 to 8 bar.

 Note

The addition of a separator element results in the following valve sub-bases being supplied with less compressed air:

- Valve sub-base at the valve position in which the locating pin is inserted
- Valve sub-bases at the two adjacent valve positions

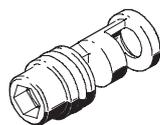
## Creation of pressure zones and duct separation

	Code	Description
	T	Duct 1 closed
	V	Duct 3 closed
	W R	Duct 5 closed Duct 3/5 closed

 Note

The separator element can also be mounted subsequently using an Allen key. An assembly tool for long terminals is available as an accessory.

Separator CPASC-KT



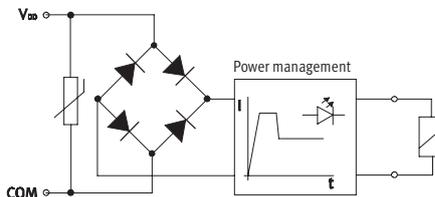
# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Electrical components

### Electrical power as a result of current reduction

Each valve solenoid coil is protected with a spark arresting protective circuit as well as against polarity reversal.

All valve types are additionally equipped with integrated current reduction.



### Individual electrical connection

With an individual electrical connection, the plug is connected directly to the valve.

Two types of individual electrical connection are available for the valve terminal and for the individual sub-base:

- Horizontal connection (HC) or
- Plug-in (PI)



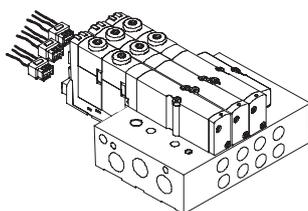
Note

Connecting cables with 2- or 3-wires are available for single solenoid valves with one solenoid coil or double solenoid valves with two solenoid coils.

### Individual electrical connection – Horizontal connection (HC)

Valve on manifold block

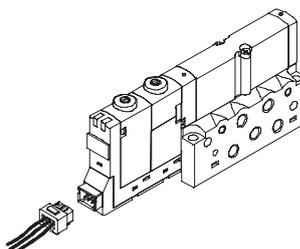
Code IH



The valve terminal can be configured with 2 to max. 16 valve positions. This means that max. 32 valve solenoid coils can be actuated with this type of electrical connection. The horizontal connection (HC) must be removed when replacing the valve.

Valve on individual block

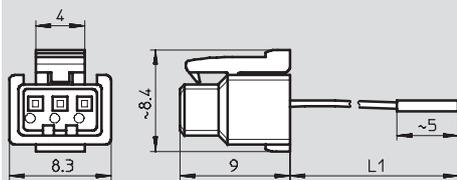
Code SH



With the individual sub-base, the electrical connection is also plugged in directly on the valve.

### Dimensions – Horizontal connection (HC)

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



Type	Code	L1 Cable length [m]	Number of valve solenoid coils	Cable colour		
				Pin 1 Common	Pin 2 Solenoid coil 12	Pin 3 Solenoid coil 14
KMH-0,5	CH	0.5	1 coil	Black	–	Red
KMH-1	CI	1	1 coil	Black	–	Red
KMH-2,5	CJ	2.5	1 coil	Black	–	Red
KMH-5	CK	5	1 coil	Black	–	Red
KMH-D-0,5	CD	0.5	2 coils	Black	Blue	Red
KMH-D-1	CE	1	2 coils	Black	Blue	Red
KMH-D-2,5	CF	2.5	2 coils	Black	Blue	Red
KMH-D-5	CG	5	2 coils	Black	Blue	Red

# Valve terminals type 82 CPA-SC, Smart Cubic

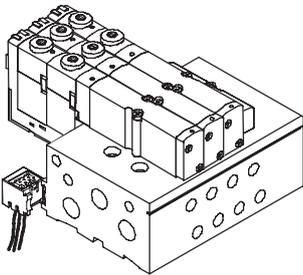
Key features – Electrical components



## Individual electrical connection – Plug-in (PI)

Valve on manifold block

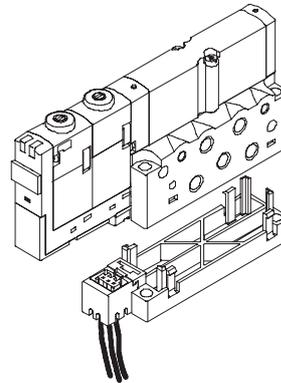
Code IP, IQ



The valve terminal can be configured with 2 to max. 16 valve positions. This means that max. 32 valve solenoid coils can be actuated with this type of electrical connection. The connector plug is inserted into the slot on the manifold block. To replace a valve or extend the terminal (vacant position), all you need do is loosen two screws; the connector plug remains in the slot.

Valve on individual block

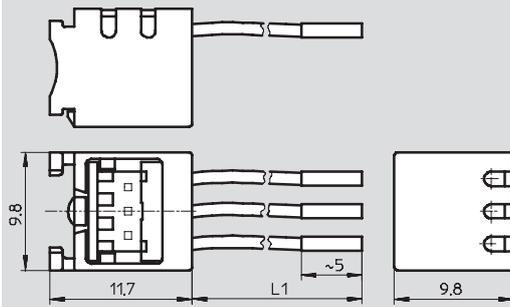
Code SP, SQ



With this electrical connection variant, the connector plug is mounted on an adapter. This adapter is then attached to the manifold block.

## Dimensions – Plug-in (PI) connection

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



Type	Code	L1 Cable length [m]	Number of valve solenoid coils	Cable colour		
				Pin 1 Common	Pin 2 Solenoid coil 12	Pin 3 Solenoid coil 14
MHAP-PI	–	0.5	1 coil	Black	–	Red
MHAP-PI-1	–	1	1 coil	Black	–	Red
MHAP-PI-D-0,5	–	0.5	2 coils	Black	Blue	Red
MHAP-PI-D-1	–	1	2 coils	Black	Blue	Red

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Electrical components

## Electrical multi-pin plug connection

The following multi-pin plug connection types are offered for the valve terminal CPA-SC:

- Sub-D multi-pin plug connection (25-pin) or
- Multi-pin plug connection with connector for flat cable (26-pin)

Pins 1 ... 20 are used for coils 1 ... 20 in order. If there are fewer than 20 coils on the valve terminal, the remaining pins up to 20 are left free. Pins 21 and above are reserved for neutral conductors. Four solenoid coils are always combined on one neutral conductor.

This means that individual valve groups can be switched off separately or a mixture of negative- and positive-switching valves achieved.

Each pin on the multi-pin plug can activate only one valve solenoid coil. If the maximum configurable number of valve positions is 20, this means that 20 valves each with a single solenoid can be addressed.

With 10 or less valve positions, 2 valve solenoid coils per valve can be addressed.

With 12 or more valve positions, the number of available valve positions for valves with two solenoid coils decreases (➔ table below).

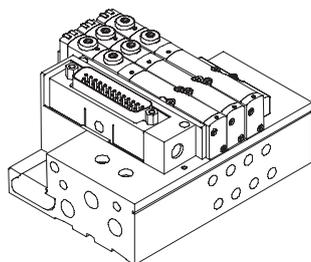
### Example:

With 16 valve positions, valves with one or two solenoid coils can be actuated on the first four (0 ... 3) positions. Valves with just one solenoid coil are permissible at positions 4 ... 15.

Address/ solenoid coil	Number of the valve position																			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1				
20	2	2	2	2	2	2	2	2	1	1	1	1								
20	2	2	2	2	2	2	2	2	2	2										
16	2	2	2	2	2	2	2	2												
12	2	2	2	2	2	2														
8	2	2	2	2																

## Electrical multi-pin plug connection – Sub-D

Code MS



With this electrical connection variant, all valves are centrally actuated via the 25-pin connector plug.

The electrical connection is located on the left-hand side and can be re-positioned by 90°.

# Valve terminals type 82 CPA-SC, Smart Cubic



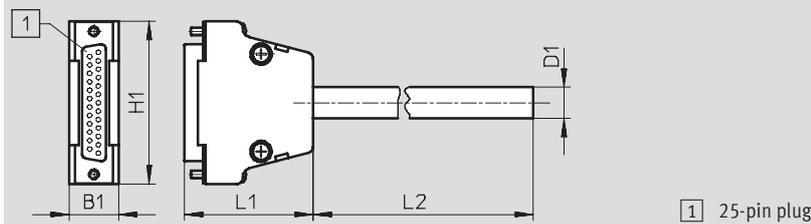
Key features – Electrical components

Pin allocation – Connector for Sub-D, 25-pin cable												
Pin	Address/ solenoid coil	Core colour <sup>2)</sup>		Valve positions <sup>1)</sup>								
		KMP6-25P-1 2-...	KMP6-25P-2 0-...	2	4	6	8	10	12	16	20	
				Valve position no./coil designation								
	1	0	WH	WH	0/14	0/14	0/14	0/14	0/14	0/14	0/14	0/14
	2	1	BN	BN	0/12	0/12	0/12	0/12	0/12	0/12	0/12	1/14
	3	2	GN	GN	1/14	1/14	1/14	1/14	1/14	1/14	1/14	2/14
	4	3	YE	YE	1/12	1/12	1/12	1/12	1/12	1/12	1/12	3/14
	5	4	GY	GY		2/14	2/14	2/14	2/14	2/14	2/14	4/14
	6	5	PK	PK		2/12	2/12	2/12	2/12	2/12	2/12	5/14
	7	6	BU	BU		3/14	3/14	3/14	3/14	3/14	3/14	6/14
	8	7	RD	RD		3/12	3/12	3/12	3/12	3/12	3/12	7/14
	9	8	BK	BK			4/14	4/14	4/14	4/14	4/14	8/14
	10	9	VT	VT			4/12	4/12	4/12	4/12	5/14	9/14
	11	10	GY PK	GY PK			5/14	5/14	5/14	5/14	6/14	10/14
	12	11	RD BU	RD BU			5/12	5/12	5/12	5/12	7/14	11/14
	13	12	-	WH GN				6/14	6/14	6/14	8/14	12/14
	14	13	-	BN GN				6/12	6/12	6/12	9/14	13/14
	15	14	-	WH YE				7/14	7/14	7/14	10/14	14/14
	16	15	-	YE BN				7/12	7/12	7/12	11/14	15/14
	17	16	-	WH GN					8/14	8/14	12/14	16/14
	18	17	-	BN GN					8/12	9/14	13/14	17/14
	19	18	-	WH YE					9/14	10/14	14/14	18/14
	20	19	-	YE BN					9/12	11/14	15/14	19/14
	21	com	-	WH BU	Coil 16 ... 19							
	22	com	-	BN BU	Coil 12 ... 15							
	23	com	WH GN	WH RD	Coil 8 ... 11							
	24	com	BN DN	BN RD	Coil 4 ... 7							
	25	com	WH YE	WH BK	Coil 0 ... 3							
Number of solenoid coils				4	8	12	16	20	20	20	20	

1) Valve positions for actuation of 2 coils are shown against a grey background  
 2) To IEC 757

## Dimensions – Sub-D plug with cable

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



Type	Code	B1 [mm]	D1 [mm]	H1 [mm]	L1 [mm]	L2 [m]
KMP6-25P-20-2,5	CP	16	10.3	53.4	37.7	2.5
KMP6-25P-20-5	CQ	16	10.3	53.4	37.7	5
KMP6-25P-20-10	CR	16	10.3	53.4	37.7	10
KMP6-25P-12-2,5	CV	16	8.5	53.4	37.7	2.5
KMP6-25P-12-5	CW	16	8.5	53.4	37.7	5
KMP6-25P-12-10	CX	16	8.5	53.4	37.7	10

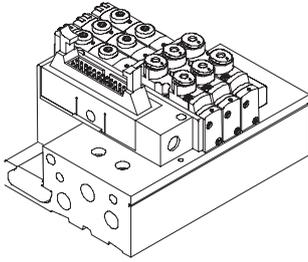
# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Electrical components



## Electrical multi-pin plug connection – Connector for flat cable

Code MF



With this electrical connection variant, all valves are centrally actuated via the 26-pin connector plug. The electrical connection is located on the left-hand side and can be re-positioned by 90°.

This connection is intended for flat cables to DIN EN 60603-13, cable cross section AWG26.

## Pin allocation – Connector for flat cable

	Pin	Address/ solenoid coil	Valve positions <sup>1)</sup>							
			4	6	8	10	12	16	20	
			Valve position no./coil designation							
	1	0	0/14	0/14	0/14	0/14	0/14	0/14	0/14	
	2	1	0/12	0/12	0/12	0/12	0/12	0/12	1/14	
	3	2	1/14	1/14	1/14	1/14	1/14	1/14	2/14	
	4	3	1/12	1/12	1/12	1/12	1/12	1/12	3/14	
	5	4	2/14	2/14	2/14	2/14	2/14	2/14	4/14	
	6	5	2/12	2/12	2/12	2/12	2/12	2/12	5/14	
	7	6	3/14	3/14	3/14	3/14	3/14	3/14	6/14	
	8	7	3/12	3/12	3/12	3/12	3/12	3/12	7/14	
	9	8		4/14	4/14	4/14	4/14	4/14	8/14	
	10	9		4/12	4/12	4/12	4/12	5/14	9/14	
	11	10		5/14	5/14	5/14	5/14	6/14	10/14	
	12	11		5/12	5/12	5/12	5/12	7/14	11/14	
	13	12				6/14	6/14	6/14	8/14	12/14
	14	13				6/12	6/12	6/12	9/14	13/14
	15	14				7/14	7/14	7/14	10/14	14/14
	16	15				7/12	7/12	7/12	11/14	15/14
17	16						8/14	8/14	12/14	16/14
18	17						8/12	9/14	13/14	17/14
19	18						9/14	10/14	14/14	18/14
20	19						9/12	11/14	15/14	19/14
21 (free)	–	–	–							
22	com	Coil 16 ... 19								
23	com	Coil 12 ... 15								
24	com	Coil 8 ... 11								
25	com	Coil 4 ... 7								
26	com	Coil 0 ... 3								
Number of solenoid coils			8	12	16	20	20	20	20	

1) Valve positions for actuation of 2 coils are shown against a grey background

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Electrical components

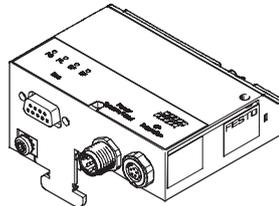
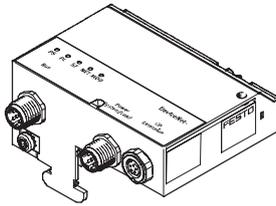


## Fieldbus Direct

DeviceNet

Profibus DP

Properties

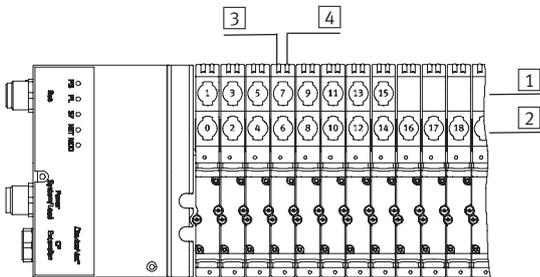


Fieldbus Direct is a system for the compact connection of a valve terminal of various sizes to different fieldbus standards.  
The CP string extension option allows the functions and components of the CPI installation system to be used.

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

➔ Info 243 CPI installation system

## Address allocation – Solenoid coils



- 1 Solenoid coils 12
- 2 Solenoid coils 14
- 3 LED solenoid coil 12
- 4 LED solenoid coil 14

The addresses of the valve solenoids on the CPASC-DN/CPASC-DP are allocated from left to right, while the addresses of the individual valve positions are allocated from front to back.

### Example:

Valve terminal where the first 8 valve positions are prepared for 2 solenoids each.

Each valve position can actuate one or two solenoid coils depending on the configuration (number of valve positions and internal wiring). It then occupies one or two addresses. The internal wiring cannot be changed subsequently.

The number of addresses each valve position occupies has nothing to do with what is actually mounted on the valve position (valve, blanking plate).

If a valve position for 2 addresses is actually equipped with two solenoid coils, the following allocation applies:

- Solenoid coil 14 occupies the less significant address
- Solenoid coil 12 occupies the more significant address

If a valve position for 2 addresses is equipped with only one solenoid coil, the more significant address remains unused. The valve position occupies two addresses nonetheless.

Address/ solenoid coil	Number of the valve position																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
32	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
32	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	-	-	-	-
32	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-
24	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
20	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Display and operation

## Display and operation – Multi-pin plug and individual valve connection

Each valve solenoid coil is allocated an LED which indicates its operating status. Inscription labels (type IBS-6x10) can be applied to each valve for labelling purposes. Alternatively inscription labels (type MH-BZ-80x) can also be affixed to the slot in the manifold block.

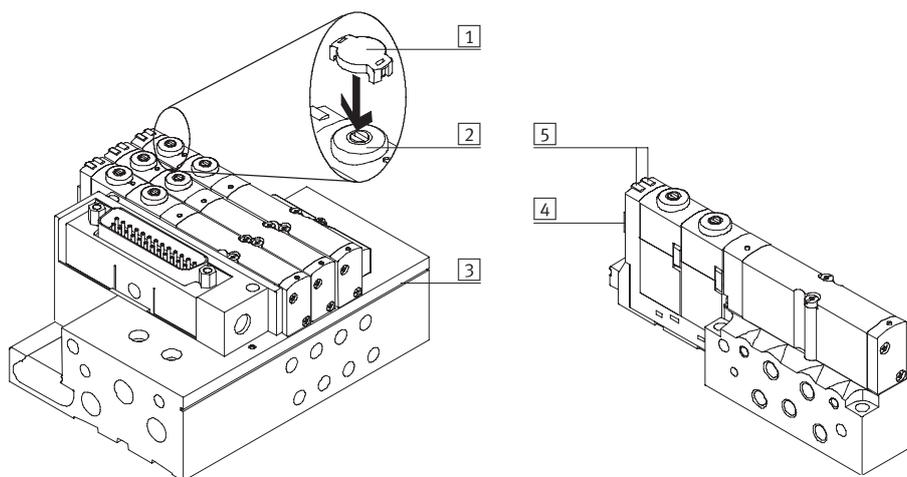
The manual override (MO) allows the valve to be activated without electronic control or power supply. The valve is activated by pushing the manual override. The set switching status can also be secured by turning the manual override.

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



Note

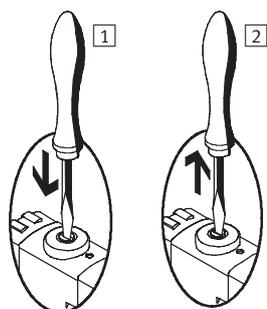
A manually activated valve (manual override) cannot be reset electrically. Conversely, an electrically activated valve cannot be reset using the manual override facility.



- 1 Cover for manual override (code V or accessory CPASC-MO-V)
- 2 Optional manual override (pushing and detenting via turning using a screwdriver)
- 3 Slot for inscription labels type MH-BZ-80x
- 4 Location for valve inscription label type IBS-6x10
- 5 LED signal status display per solenoid coil

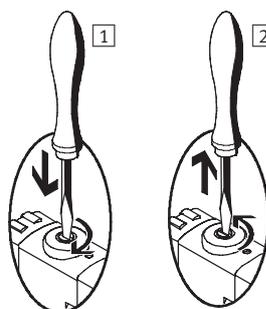
## Manual override (MO)

### Manual override with automatic return (non-detenting)



- 1 Press in the stem of the MO with a screwdriver.  
→ Valve is in switching position
- 2 Remove the screwdriver.  
Spring force pushes the stem of the MO back.  
→ Valve returns to initial position (not with double solenoid valve code J).

### MO with detent (turning with detent)



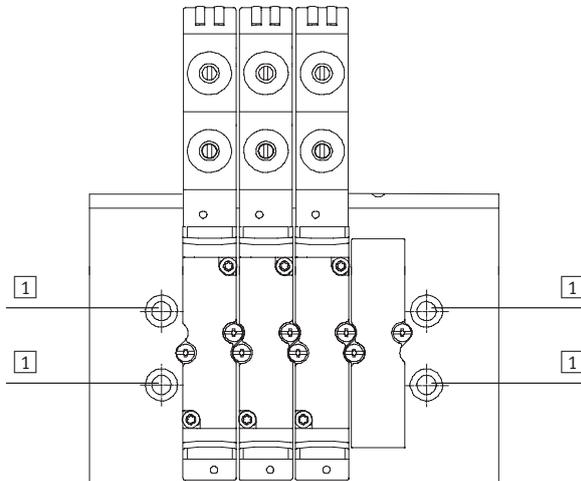
- 1 Press in the stem of the MO with a screwdriver until the valve switches and then turn the stem clockwise by 90° until the stop is reached.  
→ Valve remains in switching position
- 2 Turn the stem anti-clockwise by 90° until the stop is reached and then remove the screwdriver. Spring force pushes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

# Valve terminals type 82 CPA-SC, Smart Cubic

Key features – Mounting types

## Mounting – Valve terminal

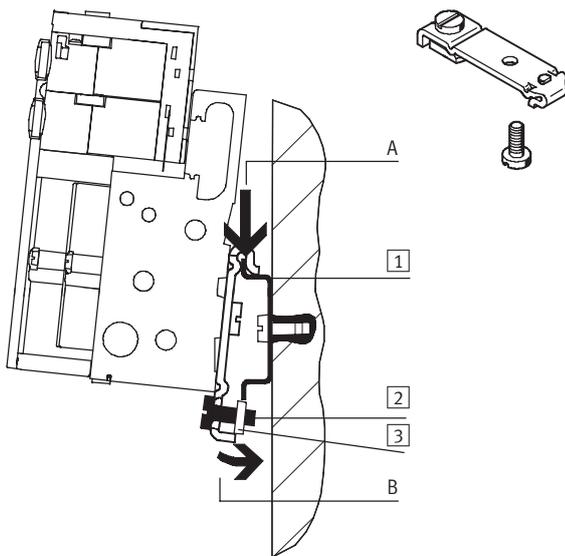
### Wall mounting



The CPA-SC valve terminal is screwed onto the mounting surface using four M4 screws.

- 1 Holes for wall mounting

### H-rail mounting



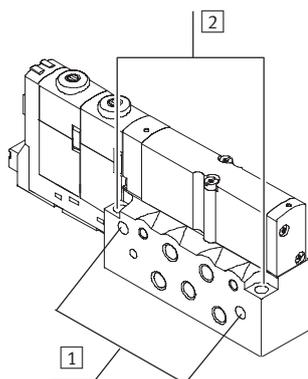
The CPA-SC valve terminal is attached to the H-rail (see arrow A). The CPA-SC valve terminal is then swivelled on the H-rail and secured in place with the clamping component (see arrow B).

For H-rail mounting of the CPA valve terminal, you will need the mounting kit CPA-BG-NRH. This enables the valve terminal to be mounted on a H-rail to EN 60715.

- 1 H-rail
- 2 Self-tapping M4x10 screw of the H-rail clamping unit
- 3 Clamping component of the H-rail clamping unit

## Mounting – Individual sub-base

### Wall mounting



The individual sub-base for wall mounting is designed for integration into a system or machine.

#### Mounting holes

- 1 Horizontal mounting
- 2 Vertical mounting

# Valve terminals type 82 CPA-SC, Smart Cubic

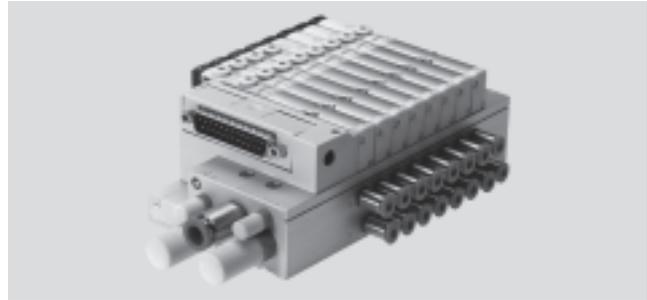
Technical data



- - Flow rate  
150 l/min

- - Width  
10 mm

- - Voltage  
24 V DC



Application-optimised valve terminals  
Smart Cubic

3.1

General technical data										
Valve	5/2-way valve		2x 3/2-way valve		5/3-way valve			1x 3/2-way valve	2x 2/2-way valve	
	Single solenoid	Double solenoid	Normally open	closed	Mid-position pressurised	closed	exhausted	Normally closed	closed	
Valve function ordering code	M	J	N	K	B	G	E	X	I	
Design	Electromagnetically actuated piston spool valve									
Width [mm]	10									
Nominal diameter [mm]	2.5									
Lubrication	Lubricated for life, PWIS-free (free of paint-wetting impairment substances)									
Type of mounting	Wall mounting									
	On H-rail to EN 60715									
Assembly position	Any									
Manual override	Pushing/detented by turning									
Pneumatic connections										
Pneumatic connection	Via manifold block, PRS manifold or individual connection									
Supply port	1	G $\frac{1}{8}$ (M5 with individual block)								
Exhaust port	3/5	G $\frac{1}{8}$ (M5 with individual block)								
Working lines	2/4	Depending on the connection type selected								
		<ul style="list-style-type: none"> <li>• M5</li> <li>• QS-3</li> <li>• QS-4</li> </ul>								
Pilot air port	12/14	M5 (M3 with individual block)								
Pilot exhaust air port	82/84	M5 (M3 with individual block)								
Pressure compensating port	L	M5, M3								

# Valve terminals type 82 CPA-SC, Smart Cubic

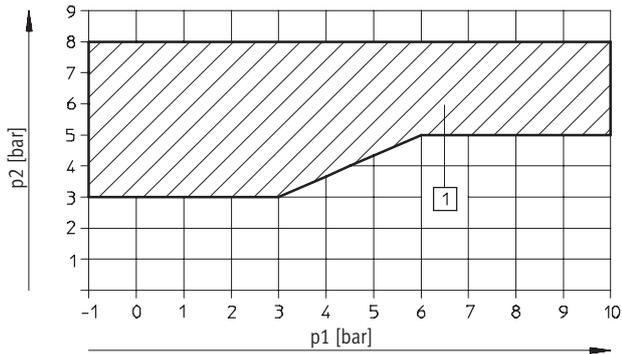
Technical data

FESTO

Operating pressure [bar]									
Valve function ordering code	M	J	N	K	B	G	E	X	I
With internal pilot air supply	+3 ... +8								
With external pilot air supply	-0.9 ... +10		+3 ... +10		-0.9 ... +10			+3 ... +10	

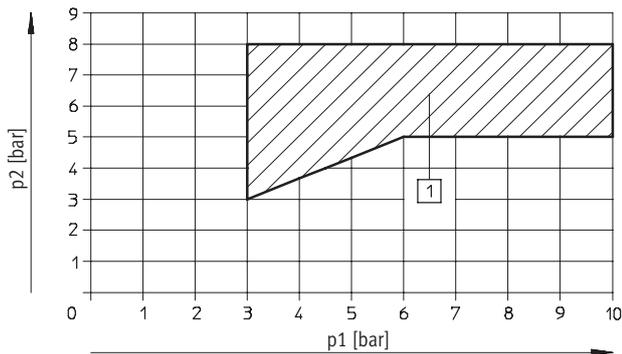
### Pilot pressure p2 as a function of working pressure p1 with external pilot air supply

for valve sub-bases with code M, J, B, G, E, X



1 Operating range for valves with external pilot air supply

for valve sub-bases with code N, K, I



1 Operating range for valves with external pilot air supply

Valve response times [ms]									
Valve function ordering code	M	J	N	K	B	G	E	X	I
Response times	on	10	-	10	10	10	10	10	10
	off	20	-	20	20	25	25	25	20
	change-over	-	10	-	-	-	-	-	-

Operating and environmental conditions									
Valve function ordering code	M	J	N	K	B	G	E	X	I
Operating medium	Filtered compressed air, lubricated or unlubricated, inert gases → 4 / 3.1-61								
Grade of filtration [µm]	40								
Ambient temperature [°C]	-5 ... +60		-5 ... +40 <sup>2)</sup>		-5 ... +60			-5 ... +40 <sup>2)</sup>	
Ambient temperature in case of fieldbus connection [°C]	-5 ... +50		-5 ... +40 <sup>2)</sup>		-5 ... +50			-5 ... +40 <sup>2)</sup>	
Storage temperature [°C]	-20 ... +40								
Corrosion resistance class CRC <sup>1)</sup>	1								
Certification	c UL us - Recognized (OL)								

- 1) Corrosion resistance class 1 according to Festo standard 940 070  
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.
- 2) Restricted ambient temperature in case of two permanently activated solenoid coils per valve location, otherwise same temperature range as ordering code M.

# Valve terminals type 82 CPA-SC, Smart Cubic



Technical data

Application-optimised valve terminals  
Smart Cubic

## 3.1

Electrical data	
Valve function ordering code	M   J   N   K   B   G   E   X   I
Electromagnetic compatibility of the CPA-SC valve terminal (Sub-D or flat cable connection)	Interference emission tested to EN 61000-6-4, industry
	Interference immunity <sup>1)</sup> tested to EN 61000-6-2, industry
Protection against electric shock (protection against direct and indirect contact to EN 60204-1/IEC 204)	By means of PELV power supply unit
Operating voltage of valves and electronic components	
Nominal operating voltage [V]	24 DC
Operating voltage range [V]	20.4 ... 26.4 DC
Electrical power consumption	
Electronic components [mA]	200 and current consumption of sensors
Valves [W]	Pull: 1, hold: 0.3
Residual ripple [Vss]	4
Cut-off pause [ms]	Min. 1
Switching frequency [Hz]	Max. 10
Duty cycle	100%
Protection class to EN 60529	IP40 (in assembled state and with detenting plug)
Relative air humidity	90% at 40°C, non-condensing
Vibration resistance	To DIN/IEC 68/EN 60068, Parts 2-6, severity level 2
Continuous shock resistance	To DIN/IEC 68/EN 60068, Parts 2-27, severity level 2

1) The maximum signal line length is 10 m

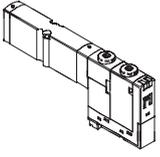
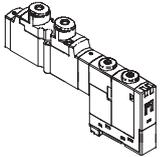
Materials	
Valve function ordering code	M   J   N   K   B   G   E   X   I
Manifold block	Wrought aluminium alloy
Valve sub-base	Die-cast aluminium
Seal	Nitrile rubber

Product weight [g]	Approx. weights
Valve function ordering code	M   J   N   K   B   G   E   X   I
Basic manifold block weight	125
Additional manifold block weight per valve position	40
Individual block	45
per valve sub-base	40
Fieldbus connection	150

# Valve terminals type 82 CPA-SC, Smart Cubic

Technical data

FESTO

Standard nominal flow rate [l/min]						
	Code	Valve function	Valve	Individual block	CPA-SC valve terminal with multi-pin plug connection/individual PI connections	CPA-SC valve terminal with individual horizontal connections
	<b>Sub-base valve</b>					
	M	5/2-way valve, single solenoid	220	170	150	120
	J	5/2-way valve, double solenoid	220	170	150	120
	N	2x 3/2-way valve, normally open	220	170	150	120
	K	2x 3/2-way valve, normally closed	180	150	120	120
	B	5/3-way valve, mid-position pressurised	220	150	120	120
	G	5/3-way valve, mid-position closed	180	150	120	120
	E	5/3-way valve, mid-position exhausted	180	150	120	120
	X	1x 3/2-way valve	120	–	100	85
I	2x 2/2-way valve	150	140	140	120	
	<b>Semi in-line valve with working port M5</b>					
	M	5/2-way valve, single solenoid	200	180	180	180
	J	5/2-way valve, double solenoid	200	180	180	180
	N	2x 3/2-way valve, normally open	200	180	180	180
	K	2x 3/2-way valve, normally closed	150	150	150	150
	B	5/3-way valve, mid-position pressurised	180	180	180	180
	G	5/3-way valve, mid-position closed	150	150	150	150
	E	5/3-way valve, mid-position exhausted	180	170	180	170
	X	1x 3/2-way valve	120	–	120	120
I	2x 2/2-way valve	150	150	150	150	

Application-optimised valve terminals  
Smart Cubic

3.1

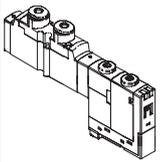
# Valve terminals type 82 CPA-SC, Smart Cubic



Technical data

Application-optimised valve terminals  
Smart Cubic

3.1

Standard nominal flow rate [l/min]						
	Code	Valve function	Valve	Individual block	CPA-SC valve terminal with multi-pin plug connection/individual PI connections	CPA-SC valve terminal with individual horizontal connections
	<b>Semi in-line valve, working port with QS-3 fitting</b>					
	M	5/2-way valve, single solenoid	140	140	140	140
	J	5/2-way valve, double solenoid	140	140	140	140
	N	2x 3/2-way valve, normally open	140	140	140	140
	K	2x 3/2-way valve, normally closed	130	130	130	130
	B	5/3-way valve, mid-position pressurised	140	140	140	140
	G	5/3-way valve, mid-position closed	130	130	130	130
	E	5/3-way valve, mid-position exhausted	140	140	140	140
	X	1x 3/2-way valve	100	–	100	100
	I	2x 2/2-way valve	130	130	130	130
	<b>Semi in-line valve, working port with QS-4 fitting</b>					
	M	5/2-way valve, single solenoid	180	170	180	180
	J	5/2-way valve, double solenoid	180	170	180	180
	N	2x 3/2-way valve, normally open	180	170	180	180
	K	2x 3/2-way valve, normally closed	150	150	150	150
	B	5/3-way valve, mid-position pressurised	180	170	180	170
G	5/3-way valve, mid-position closed	150	150	150	150	
E	5/3-way valve, mid-position exhausted	170	170	170	170	
X	1x 3/2-way valve	120	–	120	120	
I	2x 2/2-way valve	150	140	150	150	

# Valve terminals type 82 CPA-SC, Smart Cubic

Technical data

FESTO

## Pneumatic equipment

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

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 upon synthetic or native ester, e.g. rapeseed oil methyl ester), the maximum residual oil content of 0.1 mg/m<sup>3</sup> 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<sup>3</sup> must not be exceeded (see ISO 8573-1 Class 4). A higher residual oil content irrespective of the compressor oil cannot be permitted, as the basic lubricant would be flushed out over time.

# Valve terminals type 82 CPA-SC, Smart Cubic

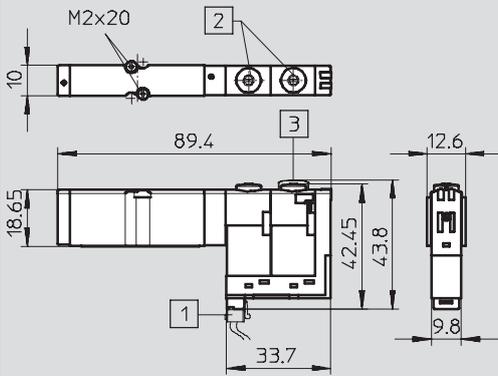
Technical data



## Dimensions – Sub-base valve

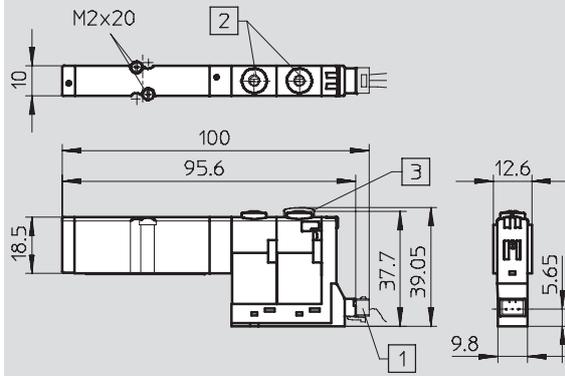
Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

With individual plug-in (PI) connection



- 1 Individual PI connection
- 2 Manual override (MO)
- 3 Manual override cover

With individual horizontal connection (HC)

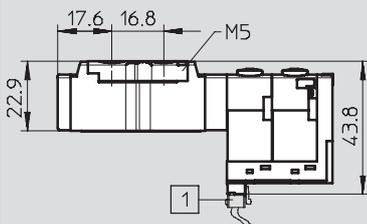


- 1 Individual horizontal connection
- 2 Manual override (MO)
- 3 Manual override cover

## Dimensions – Semi in-line valve with working port M5

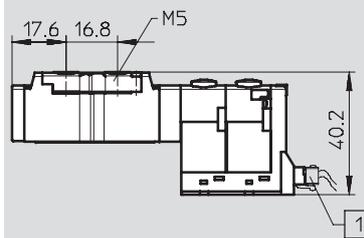
Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

With individual plug-in (PI) connection



- 1 Individual PI connection

With individual horizontal connection (HC)

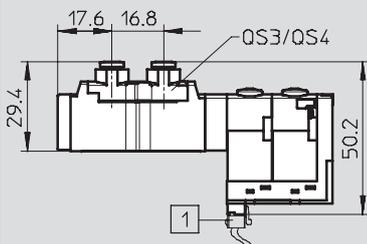


- 1 Individual horizontal connection

## Dimensions – Semi in-line valve with working port QS-3/QS-4

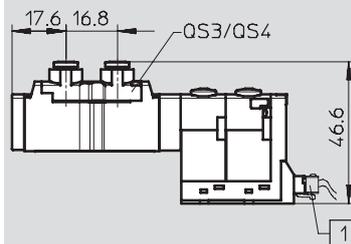
Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

With individual plug-in (PI) connection



- 1 Individual PI connection

With individual horizontal connection (HC)



- 1 Individual horizontal connection



# Valve terminals type 82 CPA-SC, Smart Cubic

Technical data



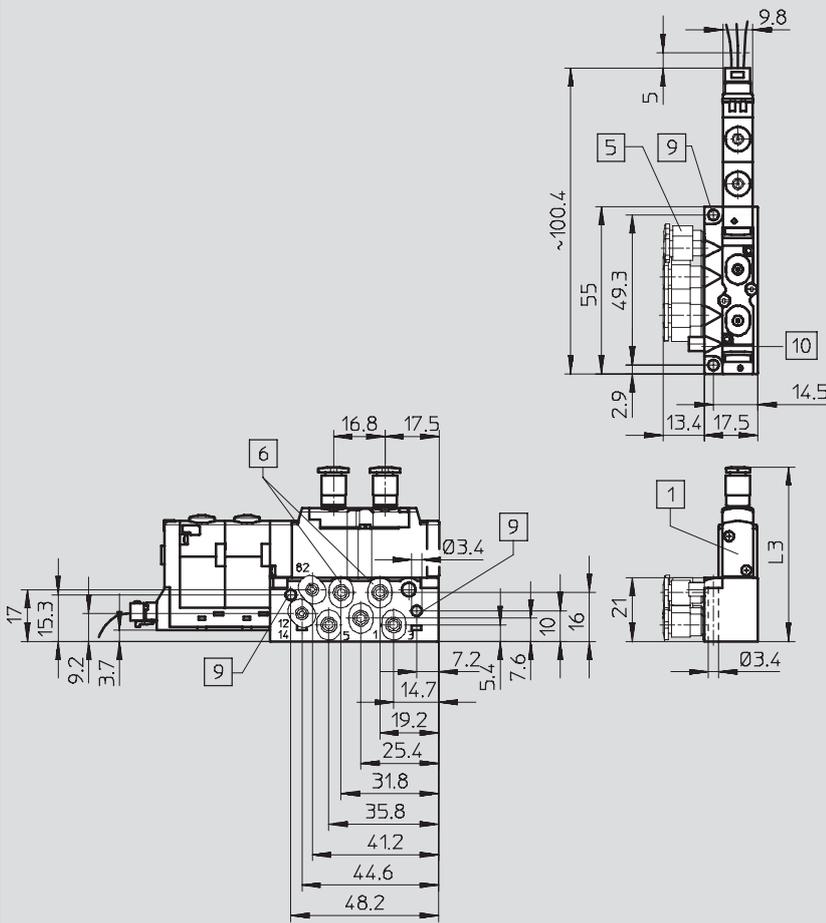
Application-optimised valve terminals  
Smart Cubic

## 3.1

### Dimensions – Individual sub-base

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

With individual horizontal connection (HC)



- 1 Semi in-line valve with M5 threaded connection
- 5 Push-in fitting
- 6 Working lines for sub-base valve (not required with semi in-line valves)
- 9 4x mounting holes
- 10 Silencer for exhaust air

Valve type		L3
Semi in-line valve	with working port M5	43.9
	with working port QS-3	50.3
	with working port QS-4	50.3
Sub-base valve		41.4
Blanking plate		30.2

# Valve terminals type 82 CPA-SC, Smart Cubic

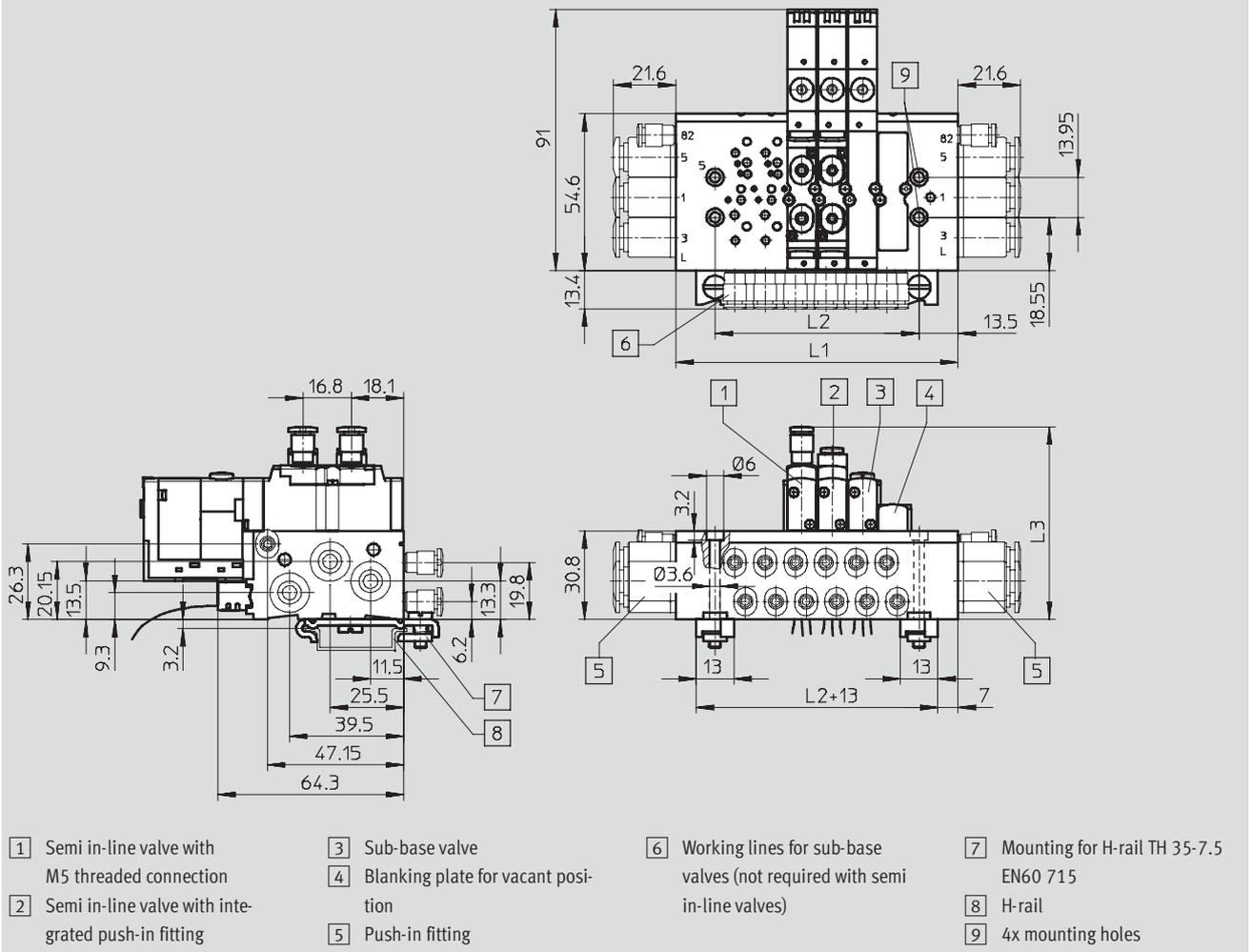
Technical data



## Dimensions – Valve terminal

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

With individual plug-in (PI) connection



Valve positions	L1	L2
2	55,5	28,5
4	76,5	49,5
6	97,5	70,5
8	118,5	91,5
10	139,5	112,5
12	160,5	133,5
16	202,5	175,5

Valve type	L3
Semi in-line valve with working port M5	53,7
with working port QS-3	60,1
with working port QS-4	60,1
Sub-base valve	51,2
Blanking plate	40

# Valve terminals type 82 CPA-SC, Smart Cubic

Technical data



Application-optimised valve terminals  
Smart Cubic

## 3.1

**Dimensions – Valve terminal** Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)  
With individual horizontal connection (HC)

The technical drawings show three views of the valve terminal: a top view, a side view, and a front view. Dimensions are provided in millimeters. Callouts 1 through 10 identify specific components of the terminal.

- 1** Semi in-line valve with M5 threaded connection
- 2** Semi in-line valve with integrated push-in fitting
- 3** Sub-base valve
- 4** Blanking plate for vacant position
- 5** Push-in fitting
- 6** Working lines for sub-base valves (not required with semi in-line valves)
- 7** Mounting for H-rail TH 35-7.5 EN60 715
- 8** H-rail
- 9** 4x mounting holes
- 10** Silencer for exhaust air

Valve positions	L1	L2
2	54.5	29
4	75.5	50
6	96.5	71
8	117.5	92
10	138.5	113
12	159.5	134
16	201.5	176

Valve type	L3
Semi in-line valve with working port M5	42.9
with working port QS-3	49.3
with working port QS-4	49.3
Sub-base valve	40.4
Blanking plate	29.2

# Valve terminals type 82 CPA-SC, Smart Cubic

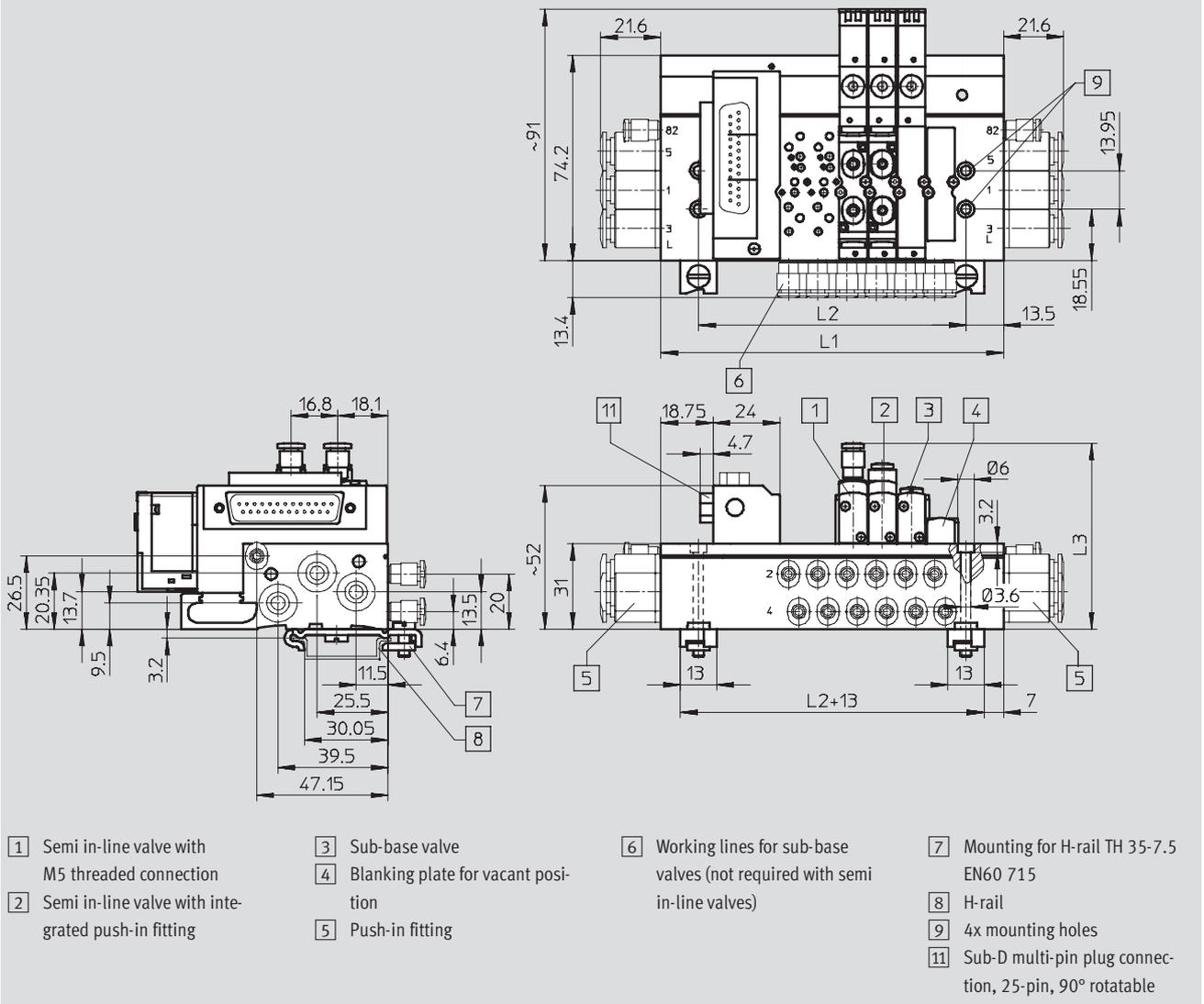
Technical data



## Dimensions – Valve terminal

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

With Sub-D multi-pin plug connection



Valve positions	L1	L2
2	81	54
4	102	75
6	123	96
8	144	117
10	165	138
12	186	159
16	228	201
20	270	243

Valve type	L3
Semi in-line valve with working port M5	53.9
Semi in-line valve with working port QS-3	60.3
Semi in-line valve with working port QS-4	60.3
Sub-base valve	51.4
Blanking plate	40.2

# Valve terminals type 82 CPA-SC, Smart Cubic

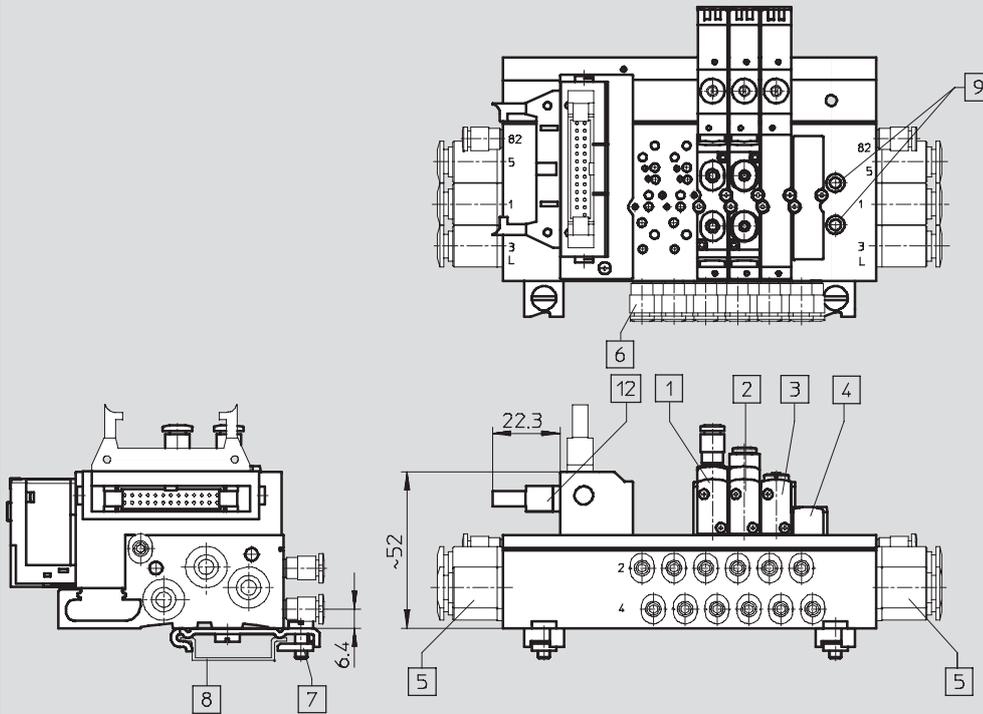
Technical data

FESTO

## Dimensions – Valve terminal

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

With multi-pin connector for flat cable



- |   |  |  |  |
|---|--|--|--|
| <p>1 Semi in-line valve with M5 threaded connection</p> <p>2 Semi in-line valve with integrated push-in fitting</p> | <p>3 Sub-base valve</p> <p>4 Blanking plate for vacant position</p> <p>5 Push-in fitting</p> | <p>6 Working lines for sub-base valves (not required with semi in-line valves)</p> | <p>7 Mounting for H-rail TH 35-7.5 EN60 715</p> <p>8 H-rail</p> <p>9 4x mounting holes</p> <p>12 Connector for flat cable, 26-pin, 90° rotatable</p> |
|---|--|--|--|

# Valve terminals type 82 CPA-SC, Smart Cubic

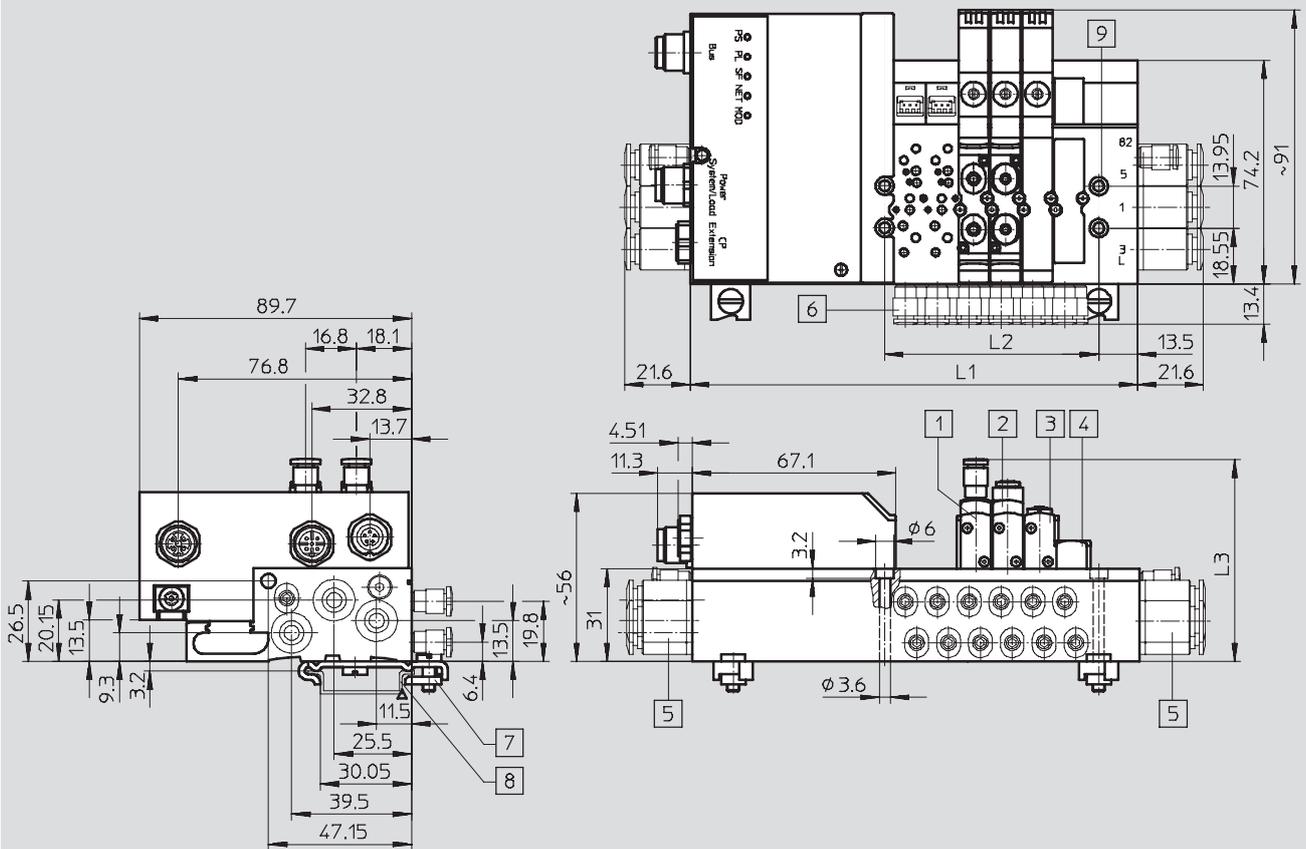
Technical data



## Dimensions – Valve terminal

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

With fieldbus connection



- 1 Semi in-line valve with M5 threaded connection
- 2 Semi in-line valve with integrated push-in fitting
- 3 Sub-base valve
- 4 Blanking plate for vacant position
- 5 Push-in fitting
- 6 Working lines for sub-base valves (not required with semi in-line valves)
- 7 Mounting for H-rail TH 35-7.5 EN60715
- 8 H-rail
- 9 4x mounting holes

Valve positions	L1	L2
4	127.2	49.5
6	148.2	70.5
8	169.2	91.5
10	190.2	112.5
12	211.2	133.5
16	253.2	175.5
20	295.2	217.5
24	337.2	259.5

Valve type	L3	
Semi in-line valve	with working port M5	53.9
	with working port QS-3	60.3
	with working port QS-4	67.3
Sub-base valve	51.4	
Blanking plate	40.2	

# Valve terminals type 82 CPA-SC, with individual plug-in connection



Ordering data – Modular products

Application-optimised valve terminals  
Smart Cubic

## 3.1

### Mandatory data →

Module No.	Valve terminal	Size	Solenoid voltage selection	Electrical connection	Position of the working ports	Type of working ports	Manual override	Pneumatic supply	Pneumatic supply connection	Type of connections
529 045	82P	10	1	IP IQ	P A	B E F I J	N V	S T V X	L R B	H G D
<b>Order example</b>										
529 045	82P	10	1	IP	P	E	N	S	R	D
1	2	3	4	5	6	7	8	9	10	11

### Ordering table

Size	10	Condi- tions	Code	Enter code
<b>M 1</b> Module No.	<b>529 045</b>			
2 Valve terminal	Valve terminal type 82, Smart Cubic, CPA-SC		<b>82P</b>	82P
3 Size [mm]	10		<b>-10</b>	-10
4 Solenoid voltage selection [V]	Power supply for valves 24 DC		<b>-1</b>	-1
5 Electrical connection	Individual plug-in connection, cable, PI socket, 0.5 m, 2 coils		<b>IP</b>	
	Individual plug-in connection, cable, PI socket, 1 m, 2 coils		<b>IQ</b>	
6 Position of the working ports	Working ports on the valve		<b>-P</b>	
	Working ports on the sub-base		<b>-A</b>	
7 Type of working ports	Threaded connection M5		<b>B</b>	
	Push-in connector QS-3		<b>E</b>	
	Push-in connector QS-4		<b>F</b>	
	Push-in connector QS-1/8"		<b>I</b>	
	Push-in connector QS-5/32"		<b>J</b>	
8 Manual override	Pushing/detenting		<b>-N</b>	
	Blocked		<b>-V</b>	
9 Pneumatic supply	Internal pilot air, exhausting via silencer		<b>-S</b>	
	External pilot air, exhausting via silencer		<b>-T</b>	
	Internal pilot air, ducted exhaust air		<b>-V</b>	
	External pilot air, ducted exhaust air		<b>-X</b>	
10 Pneumatic supply connection	Supply air at left		<b>L</b>	
	Supply air at right		<b>R</b>	
	Pneumatic supply at both ends		<b>B</b>	
11 Type of connections	Push-in connector QS-8		<b>H</b>	
	Push-in connector QS-5/16"		<b>G</b>	
	Threaded connection G1/8		<b>D</b>	

### Transfer order code

529 045	82P	-	10	-	1		-			
1	2	3	4	5	6	7	8	9	10	11

# Valve terminals type 82 CPA-SC, with individual plug-in connection

Ordering data – Modular products



M Mandatory data																O Options			
Equipment at valve position 0 ... 15																User documentation		Accessories	
<b>12 Valve functions:</b> M, J, N, K, B, G, E, X, I, L, V, W, R <b>13 Duct separation, duct 1, valve position 0 ... 14:</b> T																D, E, F, I, S, V		H	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	- D		+ H	
12 + 13																14		15	

Ordering table					
Size		10	Condi- tions	Code	Enter code
M	12	Equipment at valve position 0 ... 15		-	-
		Valve functions	5/2-way valve, single solenoid		M
		5/2-way valve, double solenoid		J	
		2x 3/2-way valve, normally open		N	
		2x 3/2-way valve, normally closed		K	
		5/3-way valve, mid-position pressurised		B	
		5/3-way valve, mid-position closed		G	
		5/3-way valve, mid-position exhausted		E	
		3/2-way valve, normally closed, external supply air	[1]	X	
		2x 2/2-way valve, 1x normally closed and 1x normally closed, reversible		I	
		Blanking plate for vacant valve position		L	
		Duct separation, duct 3 separated	[2]	V	
		Duct separation, duct 5 separated	[2]	W	
		Duct separation, duct 3/5 separated	[2]	R	
	13 Duct separation, duct 1, valve position 0 ... 14	Duct 1 separated	[2]	T	
14	User documentation	German		-D	
		English		-E	
		French		-F	
		Italian		-I	
		Spanish		-S	
		Swedish		-V	
O	15	Accessories		+	+
		H-rail mounting	1		H

- [1] X Not together with duct separation T at one valve position.
- [2] V, W, R, T Only with pneumatic supply connection B (pneumatic supply at both ends).  
Only one duct separation per valve terminal can be selected for the supply and for the exhaust.  
Only duct separation T is permissible at the first valve position.  
Duct separation is not permissible at the last valve position.

### Transfer order code

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	- [ ]		+ [ ]	
12 + 13																14		15	

# Valve terminals type 82 CPA-SC, with horizontal individual connection



Ordering data – Modular products

Application-optimised valve terminals  
Smart Cubic

### 3.1

**M** Mandatory data →

Module No.	Valve terminal	Size	Solenoid voltage selection	Electrical connection	Position of the working ports	Type of working ports	Manual override	Pneumatic supply	Pneumatic supply connection	Type of connections
529 045	82P	10	1	IH	P A	B E F I J	N V	S T V X	L R B	H G D
<b>Order example</b>										
529 045	82P	- 10	- 1	IH	- P	E	- N	- S	R	D
1	2	3	4	5	6	7	8	9	10	11

**Ordering table**

Size	10	Condi- tions	Code	Enter code
<b>M</b> 1	Module No.	529 045		
2	Valve terminal	Valve terminal type 82, Smart Cubic, CPA-SC	82P	82P
3	Size [mm]	10	-10	-10
4	Solenoid voltage selection [V]	Power supply for valves 24 DC	-1	-1
5	Electrical connection	Individual horizontal electrical connection	IH	IH
6	Position of the working ports	Working ports on the valve	-P	
		Working ports on the sub-base	-A	
7	Type of working ports	Threaded connection M5	B	
		Push-in connector QS-3	E	
		Push-in connector QS-4	F	
		Push-in connector QS-1/8"	I	
		Push-in connector QS-5/32"	J	
8	Manual override	Pushing/detenting	-N	
		Blocked	-V	
9	Pneumatic supply	Internal pilot air, exhausting via silencer	-S	
		External pilot air, exhausting via silencer	-T	
		Internal pilot air, ducted exhaust air	-V	
		External pilot air, ducted exhaust air	-X	
10	Pneumatic supply connection	Supply air at left	L	
		Supply air at right	R	
		Pneumatic supply at both ends	B	
11	Type of connections for pneumatic supply	Push-in connector QS-8	H	
		Push-in connector QS-5/16	G	
		Threaded connection G1/8	D	

Transfer order code

529 045	82P	- 10	- 1	IH	-		-			
1	2	3	4	5	6	7	8	9	10	11

# Valve terminals type 82 CPA-SC, with horizontal individual connection



Ordering data – Modular products

M Mandatory data																O Options			
Equipment at valve position 0 ... 15																User documentation		Accessories	
12 Valve functions: M, J, N, K, B, G, E, X, I, L																D, E, F, I, S, V		H, ...CD, ...CE, ...CF, ...CG, ...CH, ...CI, ...CJ, ...CK	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	- D		+ H	
- M M M J J K G L L M M M																- 13		+ 14	

Ordering table						
Size		10	Condi- tions	Code	Enter code	
12	Equipment at valve position 0 ... 15			-	-	
	M Valve functions	5/2-way valve, single solenoid		M	Enter equip- ment selection for valve positions in order code	
		5/2-way valve, double solenoid		J		
		2x 3/2-way valve, normally open		N		
		2x 3/2-way valve, normally closed		K		
		5/3-way valve, mid-position pressurised		B		
		5/3-way valve, mid-position closed		G		
		5/3-way valve, mid-position exhausted		E		
		3/2-way valve, normally closed, external supply air		X		
		2x 2/2-way valve, 1x normally closed and 1x normally closed, reversible		I		
		Blanking plate for vacant valve position		L		
	13 User documentation	German		-D		
English			-E			
French			-F			
Italian			-I			
Spanish			-S			
Swedish			-V			
O 14 Accessories	H-rail mounting	1		+	+	
	HC connecting cable, 2 coils	0.5 m	1 ... 99		...CD	
		1 m	1 ... 99		...CE	
		2.5 m	1 ... 99		...CF	
		5 m	1 ... 99		...CG	
	HC connecting cable, 1 coil	0.5 m	1 ... 99		...CH	
		1 m	1 ... 99		...CI	
		2.5 m	1 ... 99		...CJ	
		5 m	1 ... 99		...CK	

**Transfer order code**

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	-		+	
- 12																-	13	+	14

# Valve terminals type 82 CPA-SC, with individual sub-base



Ordering data – Modular products

Application-optimised valve terminals  
Smart Cubic

## 3.1

### Mandatory data →

Module No.	Valve terminal	Size	Solenoid voltage selection	Electrical connection	Position of the working ports	Type of working ports	Manual override	Pneumatic supply	Pneumatic supply connection	Type of connections
529 045	82P	10	1	SP SQ SH	P A	B E F I J	N V	S T V X	L	B F J
<b>Order example</b>										
529 045	82P	10	1	SQ	A	F	V	V	L	F
1	2	3	4	5	6	7	8	9	10	11

### Ordering table

Size	10	Condi- tions	Code	Enter code
<b>M 1</b> Module No.	<b>529 045</b>			
<b>2</b> Valve terminal	Valve terminal type 82, Smart Cubic, CPA-SC		<b>82P</b>	82P
<b>3</b> Size [mm]	10		<b>-10</b>	-10
<b>4</b> Solenoid voltage selection [V]	Power supply for valves 24 DC		<b>-1</b>	-1
<b>5</b> Electrical connection	Individual plug-in sub-base, connecting cable 0.5 m	<input type="checkbox"/>	<b>SP</b>	
	Individual plug-in sub-base, connecting cable 1 m	<input type="checkbox"/>	<b>SQ</b>	
	Individual sub-base, horizontal connection	<input type="checkbox"/>	<b>SH</b>	
<b>6</b> Position of the working ports	Working ports on the valve		<b>-P</b>	
	Working ports on the sub-base		<b>-A</b>	
<b>7</b> Type of working ports	Threaded connection M5		<b>B</b>	
	Push-in connector QS-3		<b>E</b>	
	Push-in connector QS-4		<b>F</b>	
	Push-in connector QS-1/8"		<b>I</b>	
	Push-in connector QS-5/32"		<b>J</b>	
<b>8</b> Manual override	Pushing/detenting		<b>-N</b>	
	Blocked		<b>-V</b>	
<b>9</b> Pneumatic supply	Internal pilot air, exhausting via silencer		<b>-S</b>	
	External pilot air, exhausting via silencer		<b>-T</b>	
	Internal pilot air, ducted exhaust air		<b>-V</b>	
	External pilot air, ducted exhaust air		<b>-X</b>	
<b>10</b> Pneumatic supply connection	Supply air at left		<b>L</b>	L
<b>11</b> Type of connections for pneumatic supply	Threaded connection M5		<b>B</b>	
	Push-in connector QS-4		<b>F</b>	
	Push-in connector QS-5/32"		<b>J</b>	

**SP, SQ, SH** No user documentation selectable

#### Transfer order code

529 045	82P	-	10	-	1		-			L	
1	2		3		4	5		6	7	8	9
										10	11

# Valve terminals type 82 CPA-SC, with individual sub-base

Ordering data – Modular products



M	Mandatory data	O	Options
	<p>Equipment for valve positions</p>  <p>12 Valve functions: M, J, N, K, B, G, E, I</p>		<p>Accessories</p>  <p>...CD, ...CE, ...CF, ...CG, ...CH, ...CI, ...CJ, ...CK</p>
-	E		+
	12		13

Ordering table						
Size		10	Condi- tions	Code	Enter code	
↓ M	12	Equipment for valve positions		-	-	
		Valve functions	5/2-way valve, single solenoid		M	Enter equip- ment selec- tion for valve positions in order code
			5/2-way valve, double solenoid		J	
			2x 3/2-way valve, normally open		N	
			2x 3/2-way valve, normally closed		K	
			5/3-way valve, mid-position pressurised		B	
			5/3-way valve, mid-position closed		G	
			5/3-way valve, mid-position exhausted		E	
			2x 2/2-way valve, 1x normally closed and 1x normally closed, reversible		I	
O	13	Accessories		+	+	
		HC connecting cable, 2 coils	0.5 m	1 ... 99	2	...CD
			1 m	1 ... 99	2	...CE
			2.5 m	1 ... 99	2	...CF
			5 m	1 ... 99	2	...CG
		HC connecting cable, 1 coil	0.5 m	1 ... 99	2	...CH
			1 m	1 ... 99	2	...CI
			2.5 m	1 ... 99	2	...CJ
			5 m	1 ... 99	2	...CK

2 CD, CE, CF, CG, CH, CI, CJ, CK  
Only in combination with electrical connection SH

Transfer order code

-  +

12
13

# Valve terminals type 82 CPA-SC, Smart Cubic – Multi-pin plug connection



Ordering data – Modular products

Application-optimised valve terminals  
Smart Cubic

3.1

**M** Mandatory data →

Module No.	Valve terminal	Size	Solenoid voltage selection	Electrical connection	Position of the working ports	Type of working ports	Manual override	Pneumatic supply	Pneumatic supply connection	Type of connections
529 045	82P	10	1	MS MF	P A	B E F I J	N V	S T V X	L R B	H G D
<b>Order example</b>										
529 045	82P	- 10	- 1	MF	- P	E	- V	- S	B	D
1	2	3	4	5	6	7	8	9	10	11

**Ordering table**

Size	10	Condi- tions	Code	Enter code
<b>M</b> 1	Module No.	529 045		
2	Valve terminal	Valve terminal type 82, Smart Cubic, CPA-SC	82P	82P
3	Size [mm]	10	-10	-10
4	Solenoid voltage selection [V]	Power supply for valves 24 DC	-1	-1
5	Electrical connection	Multi-pin plug connection for Sub-D, 25-pin	<sup>1</sup> MS	
		Multi-pin plug connection for flat cable, 25-pin	<sup>2</sup> MF	
6	Position of the working ports	Working ports on the valve	-P	
		Working ports on the sub-base	-A	
7	Type of working ports	Threaded connection M5	B	
		Push-in connector QS-3	E	
		Push-in connector QS-4	F	
		Push-in connectors QS-1/8"	I	
		Push-in connectors QS-5/32"	J	
8	Manual override	Pushing/detenting	-N	
		Blocked	-V	
9	Pneumatic supply	Internal pilot air, exhausting via silencer	-S	
		External pilot air, exhausting via silencer	-T	
		Internal pilot air, ducted exhaust air	-V	
		External pilot air, ducted exhaust air	-X	
10	Pneumatic supply connection	Supply air at left	L	
		Supply air at right	R	
		Pneumatic supply at both ends	B	
11	Type of connections for pneumatic supply	Push-in connector QS-8	H	
		Push-in connector QS-5/16"	G	
		Threaded connection G1/8	D	

<sup>1</sup> **MS** At least 2 valve positions must be equipped

<sup>2</sup> **MF** At least 4 valve positions must be equipped

# Valve terminals type 82 CPA-SC, Smart Cubic – Multi-pin plug connection

Ordering data – Modular products



M Mandatory data	O Options	
Equipment at valve position 0 ... 19	User documentation	Accessories
<b>12 Valve functions:</b> M, J, N, K, B, G, E, X, I, L, V, W, R <b>13 Duct separation, duct 1, valve position 0 ... 18:</b> T	D, E, F, I, S, V	H, CP, CQ, CR, CV, CW, CX
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 - M J M J J K G L L M T M M - D + H 12 + 13 14 15		

Ordering table					
Size	10	Condi- tions	Code	Enter code	
M	12 Equipment at valve position 0 ... 19		-	-	
	Valve functions	5/2-way valve, single solenoid		M	Enter equip- ment selection for valve positions in order code
		5/2-way valve, double solenoid		J	
		2x 3/2-way valve, normally open		N	
		2x 3/2-way valve, normally closed		K	
		5/3-way valve, mid-position pressurised		B	
		5/3-way valve, mid-position closed		G	
		5/3-way valve, mid-position exhausted		E	
		3/2-way valve, normally closed, external supply air	3	X	
		2x 2/2-way valve, 1x normally closed and 1x normally closed, reversible		I	
		Blanking plate for vacant valve position		L	
		Duct separation, duct 3 separated	4	V	
		Duct separation, duct 5 separated	4	W	
		Duct separation, duct 3/5 separated	4	R	
13 Duct separation, duct 1, valve position 0 ... 18	Duct 1 separated	4	T		
14 User documentation	German		-D		
	English		-E		
	French		-F		
	Italian		-I		
	Spanish		-S		
	Swedish		-V		
O 15 Accessories			+	+	
	H-rail mounting	1		H	
	Connecting cables	Sub-D 25-pin, 20 coils, 2.5 m	5	CP	
		Sub-D 25-pin, 20 coils, 5 m	5	CQ	
		Sub-D 25-pin, 20 coils, 10 m	5	CR	
		Sub-D 25-pin, 12 coils, 2.5 m	5	CV	
		Sub-D 25-pin, 12 coils, 5 m	5	CW	
Sub-D 25-pin, 12 coils, 10 m	5	CX			

3 X Not together with duct separation T at one valve position.

4 V, W, R, T Only with pneumatic supply connection B (pneumatic supply connection at both ends).

Only one duct separation per valve terminal can be selected for the supply and for the exhaust.

Only duct separation T is permissible at the first valve position.

Duct separation is not permissible at the last valve position.

5 CP, CQ, CR, CV, CW, CX

Only in combination with electrical connection MS, whereby CV, CW and CX are only permissible with 2, 4 or 6 valve positions.

# Valve terminals type 82 CPA-SC, Smart Cubic – Fieldbus



Ordering data – Modular products

Application-optimised valve terminals  
Smart Cubic

3.1

**M** Mandatory data →

Module No.	Valve terminal	Size	Electrical connection	Position of the working ports	Type of working ports	Manual override	Compressed air supply	Pneumatic connection	Type of connections
538 509	82P	10	DN DP	P A	B E F I J	N V	S T V X	L R B	H G D
<b>Order example</b>									
538 509	82P	10	DN	P	E	N	S	B	D
1	2	3	4	5	6	7	8	9	10

**Ordering table**

Size	10	Condi- tions	Code	Enter code
<b>M</b> 1	Module No.	538 509		
2	Valve terminal	Valve terminal type 82, Smart Cubic, CPA-SC	82P	82P
3	Size [mm]	10	-10	-10
4	Electrical connection	DeviceNet	-DN	
		Profibus	-DP	
5	Position of the working ports	Working ports on the valve	-P	
		Working ports on the sub-base	-A	
6	Type of working ports	Thread M5	B	
		Push-in connector QS-3	E	
		Push-in connector QS-4	F	
		Push-in connector QS-1/8"	I	
		Push-in connector QS-5/32"	J	
7	Manual override	Pushing/detenting	-N	
		Blocked	-V	
8	Compressed air supply	Internal pilot air, silencer	-S	
		External pilot air, silencer	-T	
		Internal pilot air, ducted exhaust air	-V	
		External pilot air, ducted exhaust air	-X	
9	Pneumatic connection for supply and exhaust	Supply air at left	L	
		Supply air at right	R	
		Supply at both ends	B	
10	Type of connections for supply and exhaust	Push-in connector QS-8	H	
		Push-in connector QS-5/16"	G	
		Threaded connection G1/8	D	

Transfer order code

538 509	82P	-	10	-		-		-		
1	2		3		4		5		6	7

# Valve terminals type 82 CPA-SC, Smart Cubic – Fieldbus

Ordering data – Modular products



M Mandatory data										O Options													
Equipment at valve position 0 ... 23										User documentation		Accessories											
<b>11 Valve functions:</b> M, J, N, K, B, G, E, X, I, L, V, W, R <b>12 Duct separation, duct 1, valve position 0 ... 22:</b> T										D, E, F, I, S, V		H, ...D, ...M, ...N											
Valve position																							
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
- M J M J J K G L L MT M E										- E		+ H4D											
11 + 12										13		14											

Ordering table						
Size		10	Condi- tions	Code	Enter code	
↓	M	11 Equipment at valve position 0 ... 23		-	-	
		Valve functions	5/2-way valve, single solenoid		M	Enter equip- ment selection for valve positions in order code
			5/2-way valve, double solenoid		J	
			2x 3/2-way valve, normally open		N	
			2x 3/2-way valve, normally closed		K	
			5/3-way valve, mid-position pressurised		B	
			5/3-way valve, mid-position closed		G	
			5/3-way valve, mid-position exhausted		E	
			3/2-way valve, normally closed, external supply air		X	
			2x 2/2-way valve, 1x normally closed and 1x normally closed, reversible		I	
			Blanking plate for vacant valve position		L	
			Duct separation, duct 3 separated	[1]	V	
			Duct separation, duct 5 separated	[1]	W	
			Duct separation, duct 3/5 separated	[1]	R	
12 Duct separation, duct 1, valve position 0 ... 22	Duct 1 separated	[1]	T			
13	User documentation	German		-D		
		English		-E		
		French		-F		
		Italian		-I		
		Spanish		-S		
		Swedish		-V		
O	14	Accessories		+	+	
		H-rail mounting	1		H	
		Straight connection socket for DeviceNet B-coded	1 ... 99	[2]	...D	
		Straight connection socket for Profibus DP A-coded	1 ... 99	[2]	...M	
		Straight connection socket for Profibus DP	1 ... 99	[3]	...N	

[1] **V, W, R, T** Only with pneumatic supply connection B (pneumatic supply connection at both ends).  
Only one duct separation per valve terminal can be selected for the supply and for the exhaust.

[2] **D, M**  
[3] **N**

Only duct separation T is permissible at the first valve position.  
Duct separation is not permissible at the last valve position.  
Only with electrical connection DN.  
Only with electrical connection DP.

### Transfer order code

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

-  -  +

11 + 12 13 14

# Valve terminals type 82 CPA-SC, Smart Cubic



Ordering data – Individual valve

Application-optimised valve terminals  
Smart Cubic

3.1

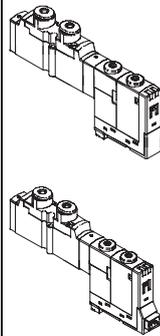
Ordering data – Sub-base valves						
	Code	Valve function	Electrical plug-in connection		Electrical horizontal connection	
			Type	Part No.	Type	Part No.
	M	5/2-way valve, single solenoid	CPASC1-M1H-M-P-2,5	526 990	CPASC1-M1H-M-H-2,5	527 008
	J	5/2-way valve, double solenoid	CPASC1-M1H-J-P-2,5	526 992	CPASC1-M1H-J-H-2,5	527 010
	N	2x 3/2-way valve, normally open	CPASC1-M1H-N-P-2,5	526 994	CPASC1-M1H-N-H-2,5	527 012
	K	2x 3/2-way valve, normally closed	CPASC1-M1H-K-P-2,5	526 996	CPASC1-M1H-K-H-2,5	527 014
	B	5/3-way valve, mid-position pressurised	CPASC1-M1H-B-P-2,5	526 998	CPASC1-M1H-B-H-2,5	527 016
	G	5/3-way valve, mid-position closed	CPASC1-M1H-G-P-2,5	527 000	CPASC1-M1H-G-H-2,5	527 018
	E	5/3-way valve, mid-position exhausted	CPASC1-M1H-E-P-2,5	527 002	CPASC1-M1H-E-H-2,5	527 020
	X	1x 3/2-way valve	CPASC1-M1H-X-P-2,5	527 004	CPASC1-M1H-X-H-2,5	527 022
	I	2x 2/2-way valve	CPASC1-M1H-I-P-2,5	527 006	CPASC1-M1H-I-H-2,5	527 024

Ordering data – Semi in-line valves						
	Code	Valve function	Electrical plug-in connection		Electrical horizontal connection	
			Type	Part No.	Type	Part No.
	Semi in-line valve with M5 working ports					
	M	5/2-way valve, single solenoid	CPPSC1-M1H-M-P-M5	527 294	CPPSC1-M1H-M-H-M5	527 303
	J	5/2-way valve, double solenoid	CPPSC1-M1H-J-P-M5	527 295	CPPSC1-M1H-J-H-M5	527 304
	N	2x 3/2-way valve, normally open	CPPSC1-M1H-N-P-M5	527 296	CPPSC1-M1H-N-H-M5	527 305
	K	2x 3/2-way valve, normally closed	CPPSC1-M1H-K-P-M5	527 297	CPPSC1-M1H-K-H-M5	527 306
	B	5/3-way valve, mid-position pressurised	CPPSC1-M1H-B-P-M5	527 298	CPPSC1-M1H-B-H-M5	527 307
	G	5/3-way valve, mid-position closed	CPPSC1-M1H-G-P-M5	527 299	CPPSC1-M1H-G-H-M5	527 308
	E	5/3-way valve, mid-position exhausted	CPPSC1-M1H-E-P-M5	527 300	CPPSC1-M1H-E-H-M5	527 309
	X	1x 3/2-way valve	CPPSC1-M1H-X-P-M5	527 301	CPPSC1-M1H-X-H-M5	527 310
	I	2x 2/2-way valve	CPPSC1-M1H-I-P-M5	527 302	CPPSC1-M1H-I-H-M5	527 311
	Semi in-line valve with QS-3 working ports					
	M	5/2-way valve, single solenoid	CPPSC1-M1H-M-P-Q3	527 330	CPPSC1-M1H-M-H-Q3	527 339
	J	5/2-way valve, double solenoid	CPPSC1-M1H-J-P-Q3	527 331	CPPSC1-M1H-J-H-Q3	527 340
	N	2x 3/2-way valve, normally open	CPPSC1-M1H-N-P-Q3	527 332	CPPSC1-M1H-N-H-Q3	527 341
	K	2x 3/2-way valve, normally closed	CPPSC1-M1H-K-P-Q3	527 333	CPPSC1-M1H-K-H-Q3	527 342
B	5/3-way valve, mid-position pressurised	CPPSC1-M1H-B-P-Q3	527 334	CPPSC1-M1H-B-H-Q3	527 343	
G	5/3-way valve, mid-position closed	CPPSC1-M1H-G-P-Q3	527 335	CPPSC1-M1H-G-H-Q3	527 344	
E	5/3-way valve, mid-position exhausted	CPPSC1-M1H-E-P-Q3	527 336	CPPSC1-M1H-E-H-Q3	527 345	
X	1x 3/2-way valve	CPPSC1-M1H-X-P-Q3	527 337	CPPSC1-M1H-X-H-Q3	527 346	
I	2x 2/2-way valve	CPPSC1-M1H-I-P-Q3	527 338	CPPSC1-M1H-I-H-Q3	527 347	

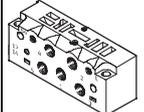
# Valve terminals type 82 CPA-SC, Smart Cubic

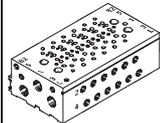
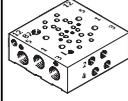


Ordering data – Individual valve, manifold block

Ordering data – Semi in-line valves						
	Code	Valve function	Electrical plug-in connection		Electrical horizontal connection	
			Type	Part No.	Type	Part No.
	Semi in-line valve with QS-4 working ports					
	M	5/2-way valve, single solenoid	CPPSC1-M1H-M-P-Q4	527 312	CPPSC1-M1H-M-H-Q4	527 321
	J	5/2-way valve, double solenoid	CPPSC1-M1H-J-P-Q4	527 313	CPPSC1-M1H-J-H-Q4	527 322
	N	2x 3/2-way valve, normally open	CPPSC1-M1H-N-P-Q4	527 314	CPPSC1-M1H-N-H-Q4	527 323
	K	2x 3/2-way valve, normally closed	CPPSC1-M1H-K-P-Q4	527 315	CPPSC1-M1H-K-H-Q4	527 324
	B	5/3-way valve, mid-position pressurised	CPPSC1-M1H-B-P-Q4	527 316	CPPSC1-M1H-B-H-Q4	527 325
	G	5/3-way valve, mid-position closed	CPPSC1-M1H-G-P-Q4	527 317	CPPSC1-M1H-G-H-Q4	527 326
	E	5/3-way valve, mid-position exhausted	CPPSC1-M1H-E-P-Q4	527 318	CPPSC1-M1H-E-H-Q4	527 327
	X	1x 3/2-way valve	CPPSC1-M1H-X-P-Q4	527 319	CPPSC1-M1H-X-H-Q4	527 328
I	2x 2/2-way valve	CPPSC1-M1H-I-P-Q4	527 320	CPPSC1-M1H-I-H-Q4	527 329	

-  Note  
 Manifold blocks with multi-pin plug or fieldbus connection can only be equipped with valves with electrical plug-in connection.

Ordering data – Individual sub-base			
	With internal pilot air	CPPSC1-PRS-1-5-HC	527 384
	With external pilot air	CPPSC1-PRS-1-5S-HC	527 388

Ordering data – Manifold block for sub-base valves					
	Valve positions	Internal pilot air		External pilot air	
		Type	Part No.	Type	Part No.
Individual plug-in connection					
	2	CPASC1-PRS-2-5-M5-PI	527 106	CPASC1-PRS-2-5S-M5-PI	527 218
	4	CPASC1-PRS-4-5-M5-PI	527 108	CPASC1-PRS-4-5S-M5-PI	527 220
	6	CPASC1-PRS-6-5-M5-PI	527 110	CPASC1-PRS-6-5S-M5-PI	527 222
	8	CPASC1-PRS-8-5-M5-PI	527 112	CPASC1-PRS-8-5S-M5-PI	527 224
	10	CPASC1-PRS-10-5-M5-PI	527 114	CPASC1-PRS-10-5S-M5-PI	527 226
	12	CPASC1-PRS-12-5-M5-PI	527 116	CPASC1-PRS-12-5S-M5-PI	527 228
	16	CPASC1-PRS-16-5-M5-PI	527 118	CPASC1-PRS-16-5S-M5-PI	527 230
Individual horizontal connection					
	2	CPASC1PRS-2-5-M5-HC	527 078	CPASC1PRS-2-5S-M5-HC	527 190
	4	CPASC1PRS-4-5-M5-HC	527 080	CPASC1PRS-4-5S-M5-HC	527 192
	6	CPASC1PRS-6-5-M5-HC	527 082	CPASC1PRS-6-5S-M5-HC	527 194
	8	CPASC1PRS-8-5-M5-HC	527 084	CPASC1PRS-8-5S-M5-HC	527 196
	10	CPASC1PRS-10-5-M5-HC	527 086	CPASC1PRS-10-5S-M5-HC	527 198
	12	CPASC1PRS-12-5-M5-HC	527 088	CPASC1PRS-12-5S-M5-HC	527 200
	16	CPASC1PRS-16-5-M5-HC	527 090	CPASC1PRS-16-5S-M5-HC	527 202

Application-optimised valve terminals  
Smart Cubic

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# Valve terminals type 82 CPA-SC, Smart Cubic

Ordering data – Individual valve, manifold block



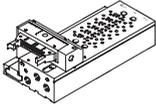
Ordering data – Manifold block for sub-base valves					
	Valve positions	Internal pilot air		External pilot air	
		Type	Part No.	Type	Part No.
Multi-pin plug connection, Sub-D					
	2	CPASC1-PRS-2-5-M5-MP	539 898	CPASC1-PRS-2-5S-M5-MP	539 896
	4	CPASC1-PRS-4-5-M5-MP	527 134	CPASC1-PRS-4-5S-M5-MP	527 246
	6	CPASC1-PRS-6-5-M5-MP	527 136	CPASC1-PRS-6-5S-M5-MP	527 248
	8	CPASC1-PRS-8-5-M5-MP	527 138	CPASC1-PRS-8-5S-M5-MP	527 250
	10	CPASC1-PRS-10-5-M5-MP	527 140	CPASC1-PRS-10-5S-M5-MP	527 252
	12	CPASC1-PRS-12-5-M5-MP	527 142	CPASC1-PRS-12-5S-M5-MP	527 254
	16	CPASC1-PRS-16-5-M5-MP	527 144	CPASC1-PRS-16-5S-M5-MP	527 256
	20	CPASC1-PRS-20-5-M5-MP	527 146	CPASC1-PRS-20-5S-M5-MP	527 258
Multi-pin plug connection, flat cable					
	4	CPASC1-PRS-4-5-M5-FL	527 162	CPASC1-PRS-4-5S-M5-FL	527 274
	6	CPASC1-PRS-6-5-M5-FL	527 164	CPASC1-PRS-6-5S-M5-FL	527 276
	8	CPASC1-PRS-8-5-M5-FL	527 166	CPASC1-PRS-8-5S-M5-FL	527 278
	10	CPASC1-PRS-10-5-M5-FL	527 168	CPASC1-PRS-10-5S-M5-FL	527 280
	12	CPASC1-PRS-12-5-M5-FL	527 170	CPASC1-PRS-12-5S-M5-FL	527 282
	16	CPASC1-PRS-16-5-M5-FL	527 172	CPASC1-PRS-16-5S-M5-FL	527 284
	20	CPASC1-PRS-20-5-M5-FL	527 174	CPASC1-PRS-20-5S-M5-FL	527 286

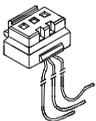
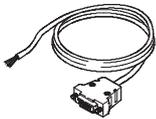
Ordering data – Manifold block for semi in-line valves					
	Valve positions	Internal pilot air		External pilot air	
		Type	Part No.	Type	Part No.
Individual plug-in connection					
	2	CPPSC1-PRS-2-5-PI	527 092	CPPSC1-PRS-2-5S-PI	527 204
	4	CPPSC1-PRS-4-5-PI	527 094	CPPSC1-PRS-4-5S-PI	527 206
	6	CPPSC1-PRS-6-5-PI	527 096	CPPSC1-PRS-6-5S-PI	527 208
	8	CPPSC1-PRS-8-5-PI	527 098	CPPSC1-PRS-8-5S-PI	527 210
	10	CPPSC1-PRS-10-5-PI	527 100	CPPSC1-PRS-10-5S-PI	527 212
	12	CPPSC1-PRS-12-5-PI	527 102	CPPSC1-PRS-12-5S-PI	527 214
	16	CPPSC1-PRS-16-5-PI	527 104	CPPSC1-PRS-16-5S-PI	527 216
Individual horizontal connection					
	2	CPPSC1PRS-2-5-HC	527 064	CPPSC1PRS-2-5S-HC	527 176
	4	CPPSC1PRS-4-5-HC	527 066	CPPSC1PRS-4-5S-HC	527 178
	6	CPPSC1PRS-6-5-HC	527 068	CPPSC1PRS-6-5S-HC	527 180
	8	CPPSC1PRS-8-5-HC	527 070	CPPSC1PRS-8-5S-HC	527 182
	10	CPPSC1PRS-10-5-HC	527 072	CPPSC1PRS-10-5S-HC	527 184
	12	CPPSC1PRS-12-5-HC	527 074	CPPSC1PRS-12-5S-HC	527 186
	16	CPPSC1PRS-16-5-HC	527 076	CPPSC1PRS-16-5S-HC	527 188
Multi-pin plug connection, Sub-D					
	2	CPPSC1-PRS-2-5-MP	539 902	CPPSC1-PRS-2-5S-MP	539 900
	4	CPPSC1-PRS-4-5-MP	527 120	CPPSC1-PRS-4-5S-MP	527 232
	6	CPPSC1-PRS-6-5-MP	527 122	CPPSC1-PRS-6-5S-MP	527 234
	8	CPPSC1-PRS-8-5-MP	527 124	CPPSC1-PRS-8-5S-MP	527 236
	10	CPPSC1-PRS-10-5-MP	527 126	CPPSC1-PRS-10-5S-MP	527 238
	12	CPPSC1-PRS-12-5-MP	527 128	CPPSC1-PRS-12-5S-MP	527 240
	16	CPPSC1-PRS-16-5-MP	527 130	CPPSC1-PRS-16-5S-MP	527 242
	20	CPPSC1-PRS-20-5-MP	527 132	CPPSC1-PRS-20-5S-MP	527 244

# Valve terminals type 82 CPA-SC, Smart Cubic

Ordering data – Accessories

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Ordering data – Manifold block for semi in-line valves					
	Valve positions	Internal pilot air		External pilot air	
		Type	Part No.	Type	Part No.
Multi-pin plug connection, flat cable					
	4	CPPSC1-PRS-4-5-FL	527 148	CPPSC1-PRS-4-5S-FL	527 260
	6	CPPSC1-PRS-6-5-FL	527 150	CPPSC1-PRS-6-5S-FL	527 262
	8	CPPSC1-PRS-8-5-FL	527 152	CPPSC1-PRS-8-5S-FL	527 264
	10	CPPSC1-PRS-10-5-FL	527 154	CPPSC1-PRS-10-5S-FL	527 266
	12	CPPSC1-PRS-12-5-FL	527 156	CPPSC1-PRS-12-5S-FL	527 268
	16	CPPSC1-PRS-16-5-FL	527 158	CPPSC1-PRS-16-5S-FL	527 270
	20	CPPSC1-PRS-20-5-FL	527 160	CPPSC1-PRS-20-5S-FL	527 272

Ordering data – Accessories					
Designation				Type	Part No.
Soldering base for plug-in connection					
	3-pin		Scope of delivery 10 pieces	PCBC-B-10	539 904
	3-pin		Scope of delivery 100 pieces	PCBC-B-100	539 905
Plug socket with cable for plug-in connection					
	For 1 coil		0.5 m	MHAP-PI	197 260
			1 m	MHAP-PI-1	532 182
	For 2 coils		0.5 m	MHAP-PI-D-0,5	529 116
			1 m	MHAP-PI-D-1	527 395
Plug socket with cable for horizontal connection					
	For 1 coil, 2-wire		0.5 m	KMH-0,5	197 263
			1 m	KMH-1	197 264
			2.5 m	KMH-2,5	527 400
			5 m	KMH-5	527 401
	For 2 coils, 3-wire		0.5 m	KMH-D-0,5	527 396
			1 m	KMH-D-1	527 397
			2.5 m	KMH-D-2,5	527 398
			5 m	KMH-D-5	527 399
Connecting cable to IP40					
	Sub-D, 25-pin, up to 20 coils		2.5 m	KMP6-25P-20-2,5	530 046
			5 m	KMP6-25P-20-5	530 047
			10 m	KMP6-25P-20-10	530 048
	Sub-D, 25-pin, up to 12 coils		2.5 m	KMP6-25P-12-2,5	530 049
			5 m	KMP6-25P-12-5	530 050
			10 m	KMP6-25P-12-10	530 051
Power supply					
	MicroStyle M12, 5-pin socket (B-coded) for DeviceNet		for 0.75 mm <sup>2</sup>	NTSD-GD-9-M12-5POL-RK	538 999
	M12, 5-pin socket (A-coded) for Profibus DP		for 0.75 mm <sup>2</sup>	FBSD-GD-9-5POL	18 324

# Valve terminals type 82 CPA-SC, Smart Cubic



Ordering data – Accessories

Application-optimised valve terminals  
Smart Cubic

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Ordering data – Accessories				
Designation		Type	Part No.	
<b>Fieldbus connection</b>				
	Plug to IP65, M12, 5-pin, PG9 for DeviceNet	for 0.75 mm <sup>2</sup>	<b>FBS-M12-5GS-PG9</b>	<b>175 380</b>
	Fieldbus socket for MicroStyle connection, M12, socket (A-coded) for DeviceNet	for 0.75 mm <sup>2</sup>	<b>FBSD-GD-9-5POL</b>	<b>18 324</b>
<b>Adapter</b>				
	T-adapter, 5-pin, for DH-485/DeviceNet	–	<b>FB-TA-M12-5POL</b>	<b>171 175</b>
<b>Valve terminal connection</b>				
	Connecting cable WS-WD, angled plug-angled socket	0.25 m	<b>KVI-CP-3-WS-WD-0,25</b>	<b>540 327</b>
		0.5 m	<b>KVI-CP-3-WS-WD-0,5</b>	<b>540 328</b>
		2 m	<b>KVI-CP-3-WS-WD-2</b>	<b>540 329</b>
		5 m	<b>KVI-CP-3-WS-WD-5</b>	<b>540 330</b>
		8 m	<b>KVI-CP-3-WS-WD-8</b>	<b>540 331</b>
	Connecting cable GS-GD, straight plug-straight socket	2 m	<b>KVI-CP-3-GS-GD-2</b>	<b>540 332</b>
		5 m	<b>KVI-CP-3-GS-GD-5</b>	<b>540 333</b>
		8 m	<b>KVI-CP-3-GS-GD-8</b>	<b>540 334</b>

# Valve terminals type 82 CPA-SC, Smart Cubic

Accessories

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Ordering data – Accessories				
Designation			Type	Part No.
<b>Push-in fitting for working ports</b>				
	Connecting thread M5 for tubing O.D.	3 mm	QSM-M5-3	153 302
		4 mm	QSM-M5-4	153 304
		3 mm	QSM-M5-3-I	153 313
		4 mm	QSM-M5-4-I	153 315
<b>Push-in L-fitting for working ports</b>				
	Connecting thread M5 for tubing O.D.	3 mm	QSML-M5-3	153 331
		4 mm	QSML-M5-4	153 333
		6 mm	QSML-M5-6	153 335
		4 mm	QSMLL-M5-4	153 339
		6 mm	QSMLL-M5-6	153 341
<b>Push-in fitting for manifold block</b>				
	Connecting thread M3 for tubing O.D.	3 mm	QSM-M3-3	153 301
		4 mm	QSM-M3-4	153 303
		3 mm	QSM-M3-3-I	153 312
		4 mm	QSM-M3-4-I	153 314
	Connecting thread M5 for tubing O.D.	3 mm	QSM-M5-3	153 302
		4 mm	QSM-M5-4	153 304
		6 mm	QSM-M5-6	153 306
		3 mm	QSM-M5-3-I	153 313
		4 mm	QSM-M5-4-I	153 315
		6 mm	QSM-M5-6-I	153 317
	Connecting thread G1/8 for tubing O.D.	4 mm	QSM-G1/8-4-I	186 266
		6 mm	QSM-G1/8-6-I	186 267
		8 mm	QS-G1/8-8-I	186 109
	Connecting thread R1/8 for tubing O.D.	4 mm	QSM-1/8-4	153 305
		6 mm	QSM-1/8-6	153 307
		4 mm	QSM-1/8-4-I	153 316
6 mm		QSM-1/8-6-I	153 318	
<b>Push-in L-fitting for manifold block</b>				
	Connecting thread M3 for tubing O.D.	3 mm	QSML-M3-3	153 330
		4 mm	QSML-M3-4	153 332
		3 mm	QSMLL-M3-3	153 337
		4 mm	QSMLL-M3-4	153 338
	Connecting thread M5 for tubing O.D.	3 mm	QSML-M5-3	153 331
		4 mm	QSML-M5-4	153 333
		6 mm	QSML-M5-6	153 335
		4 mm	QSMLL-M5-4	153 339
		6 mm	QSMLL-M5-6	153 341
	Connecting thread R1/8 for tubing O.D.	4 mm	QSML-1/8-4	153 334
		6 mm	QSML-1/8-6	153 336
		4 mm	QSMLL-1/8-4	153 340
6 mm		QSMLL-1/8-6	153 342	

Application-optimised valve terminals  
Smart Cubic

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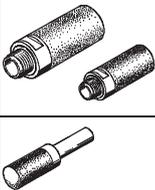
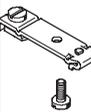
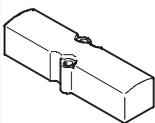
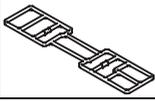
# Valve terminals type 82 CPA-SC, Smart Cubic

Accessories

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Application-optimised valve terminals  
Smart Cubic

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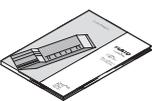
Ordering data – Accessories				
Designation			Type	Part No.
<b>Silencer</b>				
	Connecting thread	M3	U-M3	163 978
		M5	U-M5	4 645
		M5	UC-M5	165 003
		G $\frac{1}{8}$	UC- $\frac{1}{8}$	161 419
	Push-in sleeve connection	3 mm	UC-QS-3H	165 005
		4 mm	UC-QS-4H	165 006
		6 mm	UC-QS-6H	165 007
		8 mm	UC-QS-8H	175 611
<b>Blanking plug</b>				
	Thread M5		B-M5	3 843
	Thread M5		B-M5-B	174 308
	Thread G $\frac{1}{8}$		B- $\frac{1}{8}$	3 568
	Blanking plug for tubing O.D.	4 mm	QSC-4H	153 267
		6 mm	QSC-6H	153 268
		8 mm	QSC-8H	153 269
		3 mm	QSMC-3H	153 382
<b>Inscription labels</b>				
	6x10 in frames, 64 pieces for valve identification		IBS-6x10	18 576
	4.5x9 mm, 80 pieces for manifold block identification		MH-BZ-80x	197 259
<b>Mounting</b>				
	For H-rail		CPASC1-BG-NRH	527 392
<b>Blanking plate</b>				
	Cover for vacant position <sup>1)</sup>		CPASC1-RP	527 062
	Cover for manual override		CPASC1-MO-V	527 393
<b>Valve seal</b>				
	For manifold block		CPASC1-SEAL-A	527 394
<b>Separator and assembly tool</b>				
	Separator		CPASC1-KT	536 942
	Assembly tool for separator		CPASC1-MWKT	536 943

1) A self-adhesive label is supplied.

# Valve terminals type 82 CPA-SC, Smart Cubic

Accessories

**FESTO**

Ordering data – Accessories				
Designation		Type	Part No.	
User documentation				
	User documentation – CPA-SC	German	P.BE-CPASC-DE	530 932
		English	P.BE-CPASC-EN	530 933
		French	P.BE-CPASC-FR	530 934
		Spanish	P.BE-CPASC-ES	530 935
		Italian	P.BE-CPASC-IT	530 936
		Swedish	P.BE-CPASC-SV	530 937
	User documentation – DeviceNet fieldbus	German	P.BE-CPASC-CPVSC-DN-DE	539 008
		English	P.BE-CPASC-CPVSC-DN-EN	539 009
		French	P.BE-CPASC-CPVSC-DN-FR	539 010
		Spanish	P.BE-CPASC-CPVSC-DN-ES	539 011
		Italian	P.BE-CPASC-CPVSC-DN-IT	539 012
		Swedish	P.BE-CPASC-CPVSC-DN-SV	539 013
	User documentation – Profibus DP fieldbus	German	P.BE-CPASC-CPVSC-DP-DE	548 725
		English	P.BE-CPASC-CPVSC-DP-EN	548 726
		French	P.BE-CPASC-CPVSC-DP-FR	548 728
		Spanish	P.BE-CPASC-CPVSC-DP-ES	548 727
		Italian	P.BE-CPASC-CPVSC-DP-IT	548 729
		Swedish	P.BE-CPASC-CPVSC-DP-SV	548 730

Application-optimised valve terminals  
Smart Cubic

**3.1**