Valve terminal type 82 CPASC1, Smart Cubic

■ **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**
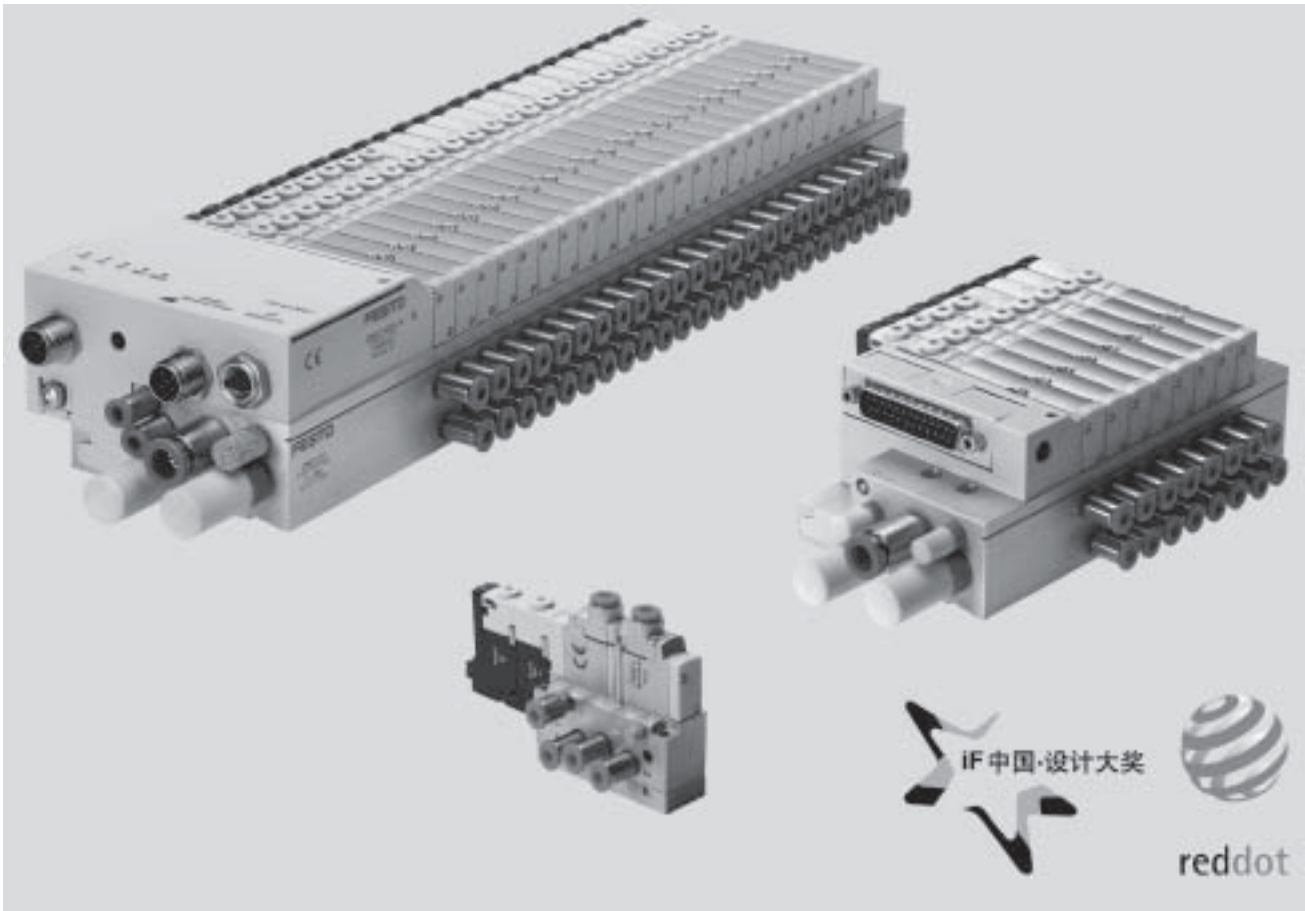
■ **Variety of pneumatic and electrical connection options**

Valve terminal type 82 CPASC1, Smart Cubic

Key features

FESTO

Innovative

- Compact valve terminal for a wide range of pneumatic applications
- Standardised from the individual valve up to multi-pin plug and field-bus 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
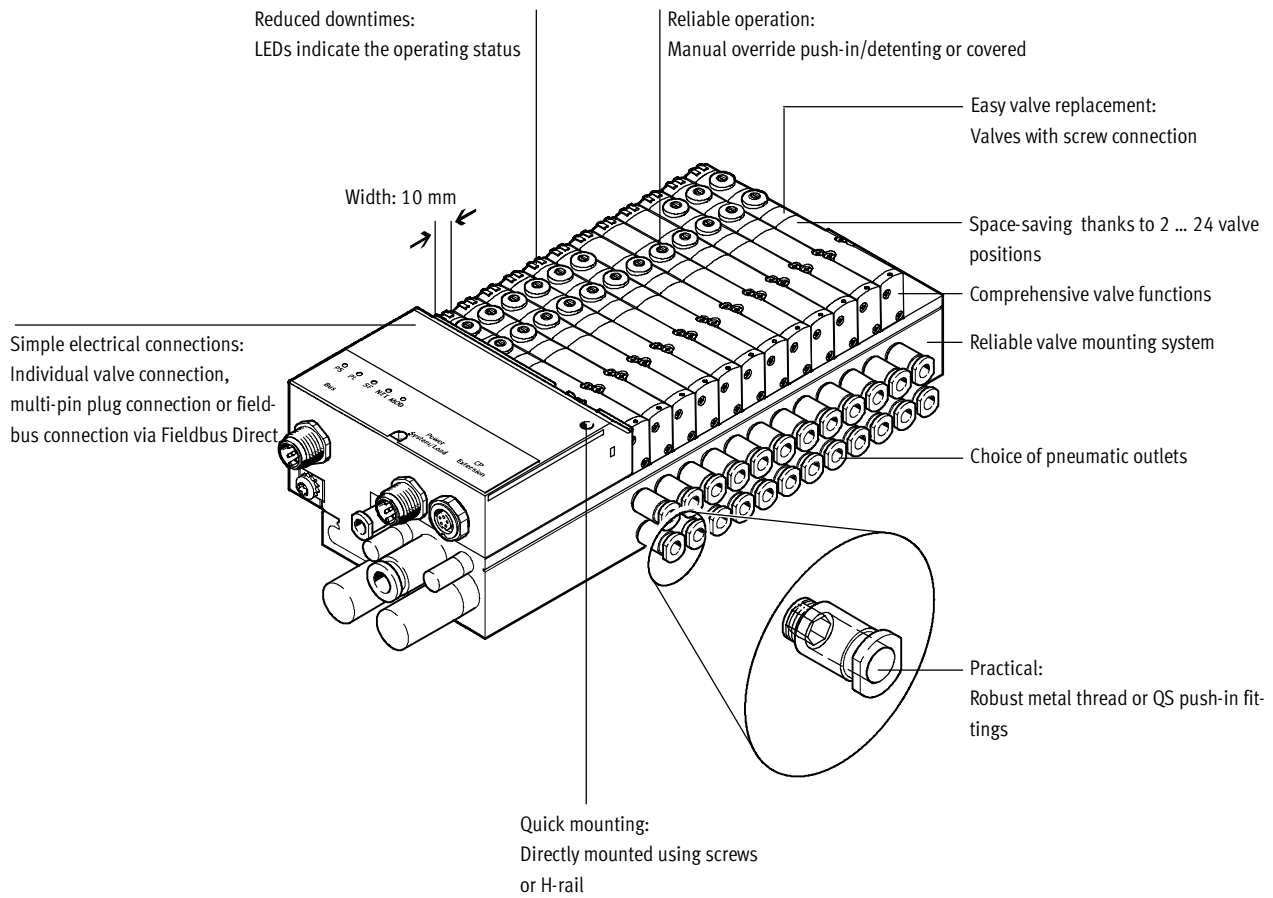- Wide range of electrical connections for 24 V DC operating voltage

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 terminal type 82 CPASC1, Smart Cubic

Key features

Reduced downtimes:
LEDs indicate the operating status

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

Easy valve replacement:
Valves with screw connection

Space-saving thanks to 2 ... 24 valve positions

Width: 10 mm

Comprehensive valve functions

Reliable valve mounting system

Simple electrical connections:
Individual valve connection, multi-pin plug connection or field-bus connection via Fieldbus Direct

Choice of pneumatic outlets

Practical:
Robust metal thread or QS push-in fittings

Quick mounting:
Directly mounted using screws or H-rail

Equipment options			
Valve functions			
■ 5/2-way valve, single solenoid ■ 5/2-way valve, double solenoid ■ 2x 3/2-way valve, normally open ■ 2x 3/2-way valve, normally closed	■ 5/3-way valve, mid-position pressurised ■ 5/3-way valve, mid-position closed ■ 5/3-way valve, mid-position exhausted	■ 1x 3/2-way valve, normally closed, external compressed air supply ■ 2x 2/2-way valve, normally closed, dual compressed air supply	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.
Electrical connection options			
Individual connection ■ Plug-in (PI) ■ Horizontal connection (HC)	**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

Valve terminal type 82 CPASC1, Smart Cubic

Key features

| Valve terminal configurator | Online via: ➔ 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 / 3.1-72

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. CPASC1) 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.
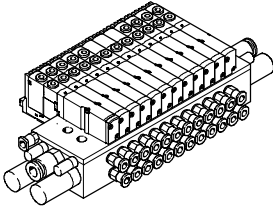Select the "Finish" menu to continue on with the ordering process.

# Valve terminal type 82 CPASC1, Smart Cubic

Key features

Individual connection

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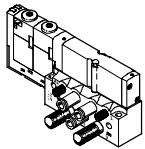
Valves can also be used on an individual block for actuators further away from the valve terminal.

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) or
■ Plug-in (PI)

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

Version SP, SQ:
The connector plug is mounted on an adapter. This adapter is then attached to the manifold block.
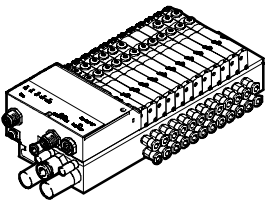
Multi-pin plug connection
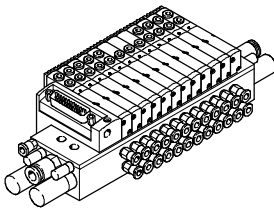
Control signals from the controller to the valve terminal are transmitted via a pre-assembled multi-core cable, which substantially reduces installation time.

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.
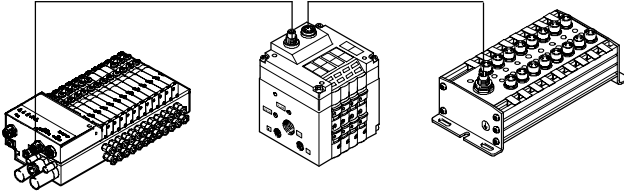
Variants
■ DeviceNet connection
■ 4 to 32 solenoid coils

Valve terminal type 82 CPASC1, Smart Cubic

Key features

CP string extension

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

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

The CP string interface offers:
- 16 input signals
- 16 output signals for output modules 24 V DC or solenoid coils
- Logic and sensor supply for the input modules
- Logic and sensor supply for the output modules
- Load voltage supply for the valve terminals
- Logic supply for the output module

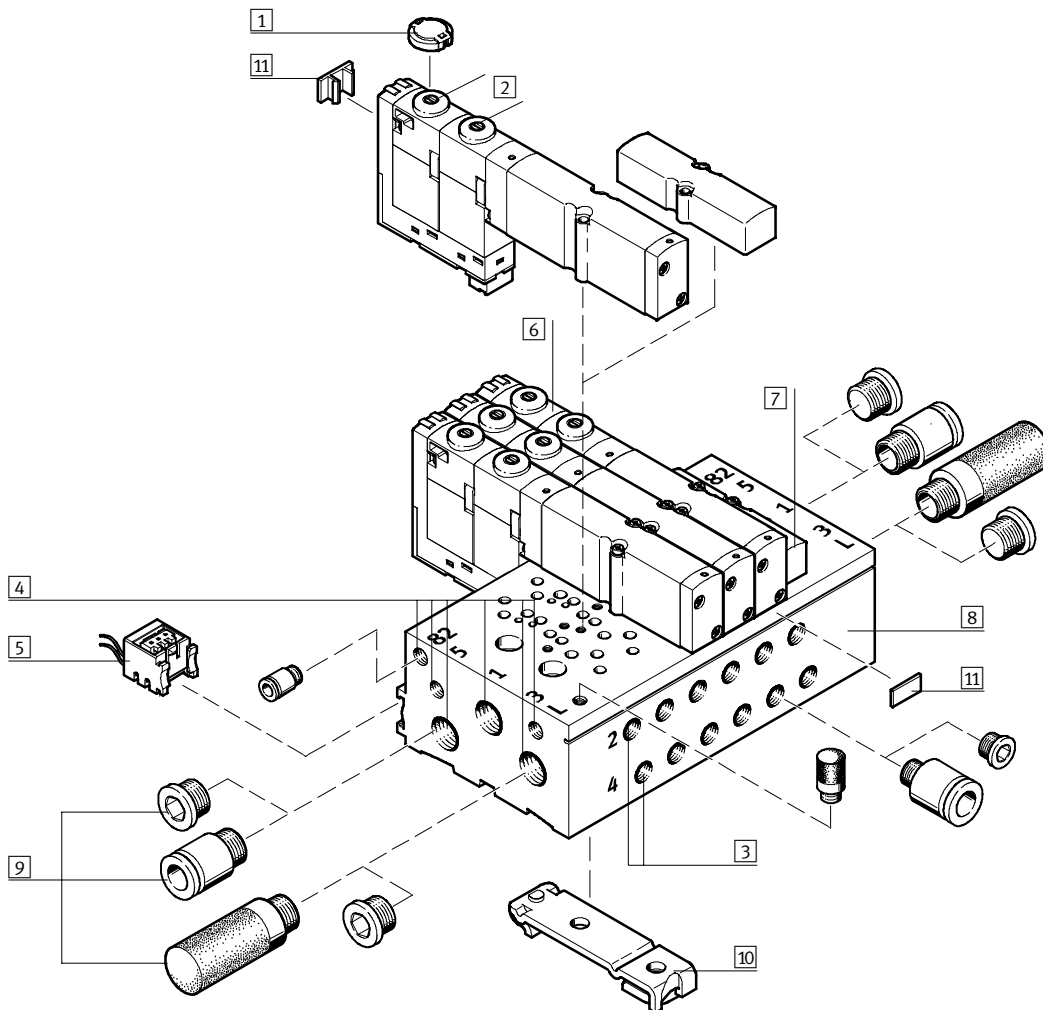➜ 4 / 4.7-2

Overview – CPASC 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.

CPASC 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
2	Manual override (per solenoid coil, push-in/rotary-detenting)		
3	Working lines (2, 4) on the manifold block (per valve position)		

5	Individual plug-in (PI) connection	9	Connectors, silencers and blanking plugs
6	Valve	10	H-rail mounting
7	Cover for vacant position (blanking plate)	11	Inscription labels
8	Manifold block for sub-base valves		

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.

CPASC valve terminal with sub-base valves

☐	Cover for manual override (optional)	☐	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	☐	Individual horizontal connection (HC)	☐	Connectors, silencers and blanking plugs
1		4		5		9	
2	Manual override (per solenoid coil, push-in/rotary-detenting)			6	Valve	10	H-rail mounting
3	Working lines (2, 4) on the manifold block (per valve position)			7	Cover for vacant position (blanking plate)	11	Inscription labels
				8	Manifold block for sub-base valves		

Overview – CPASC 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.

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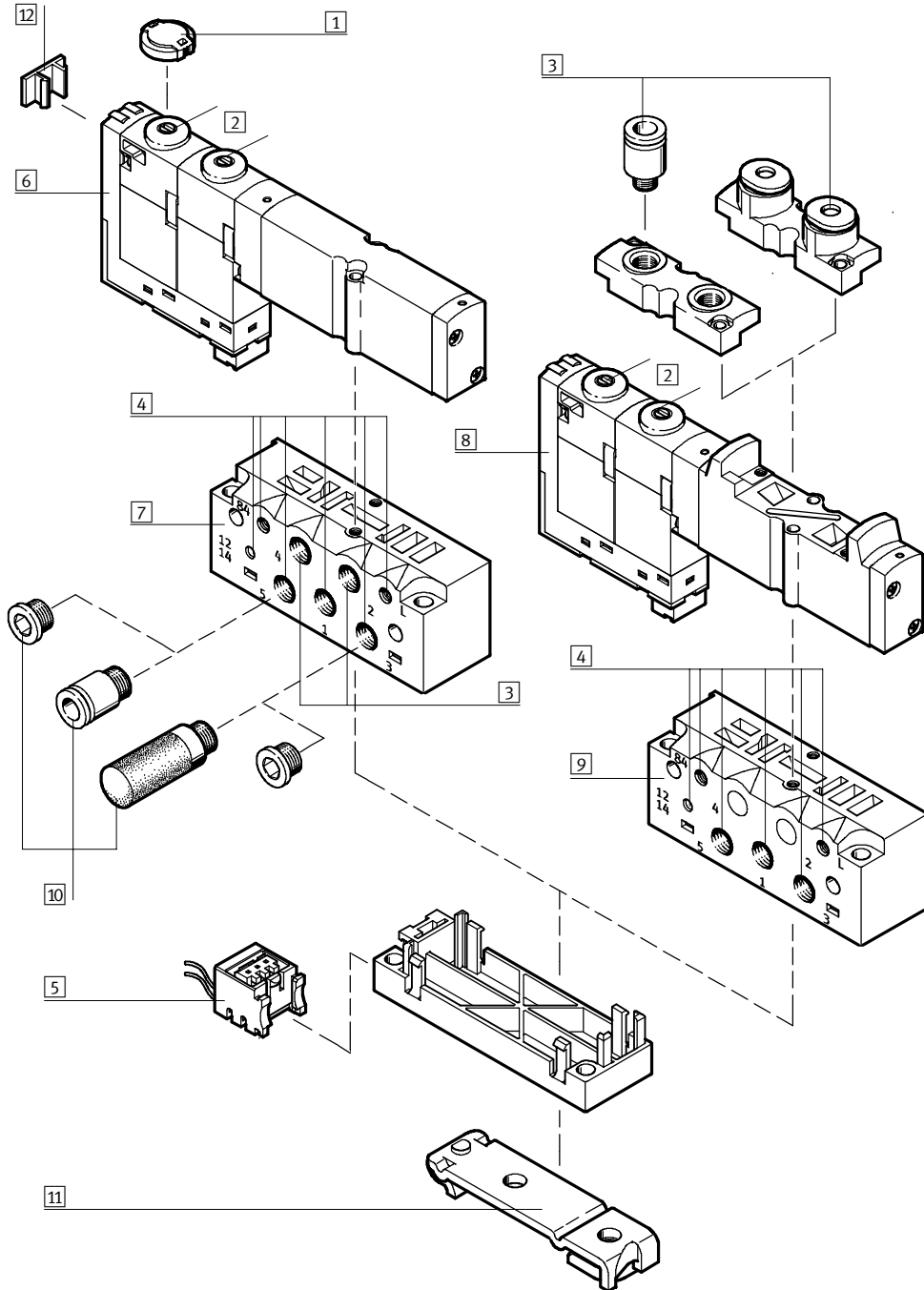
1 Cover for manual override (optional)
2 Manual override (per solenoid coil, push-in/rotary-detenting)
3 Working lines (2, 4) on the individual block or on the valve (semi in-line version)
4 Supply ports (1, 12/14), exhaust ports (3, 5, 82/84) and pressure compensating port (L) on the individual block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

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.

CPASC 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)		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)	5 Individual horizontal connection (HC)	8 Semi in-line valve	12 Inscription label
		9 Individual block for semi in-line valve	

Valve terminal type 82 CPASC1, Smart Cubic

Peripherals overview

Overview – CPASC 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.

CPASC 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
2	Manual override (per solenoid coil, push-in/rotary-detenting)	5	Multi-pin plug connection Sub-D
3	Working lines (2, 4) on the manifold block (per valve position)		

6	Multi-pin plug connection with connector for flat cable	9	Manifold block for sub-base valves
7	Valve	10	Connectors, silencers and blanking plugs
8	Cover for vacant position (blanking plate)	11	H-rail mounting
		12	Inscription labels

CPASC valve terminal with semi in-line 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	☐10	Connectors, silencers and blanking plugs
☐2	Manual override (per solenoid coil, push-in/rotary-detenting)			☐7	Valve	☐11	Pneumatic connection plates for semi in-line valves
☐3	Working lines (2, 4) on the valve	☐5	Multi-pin plug connection Sub-D	☐8	Cover for vacant position (blanking plate)	☐12	H-rail mounting
				☐9	Manifold block for semi in-line valves	☐13	Inscription labels

Overview – CPASC 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.
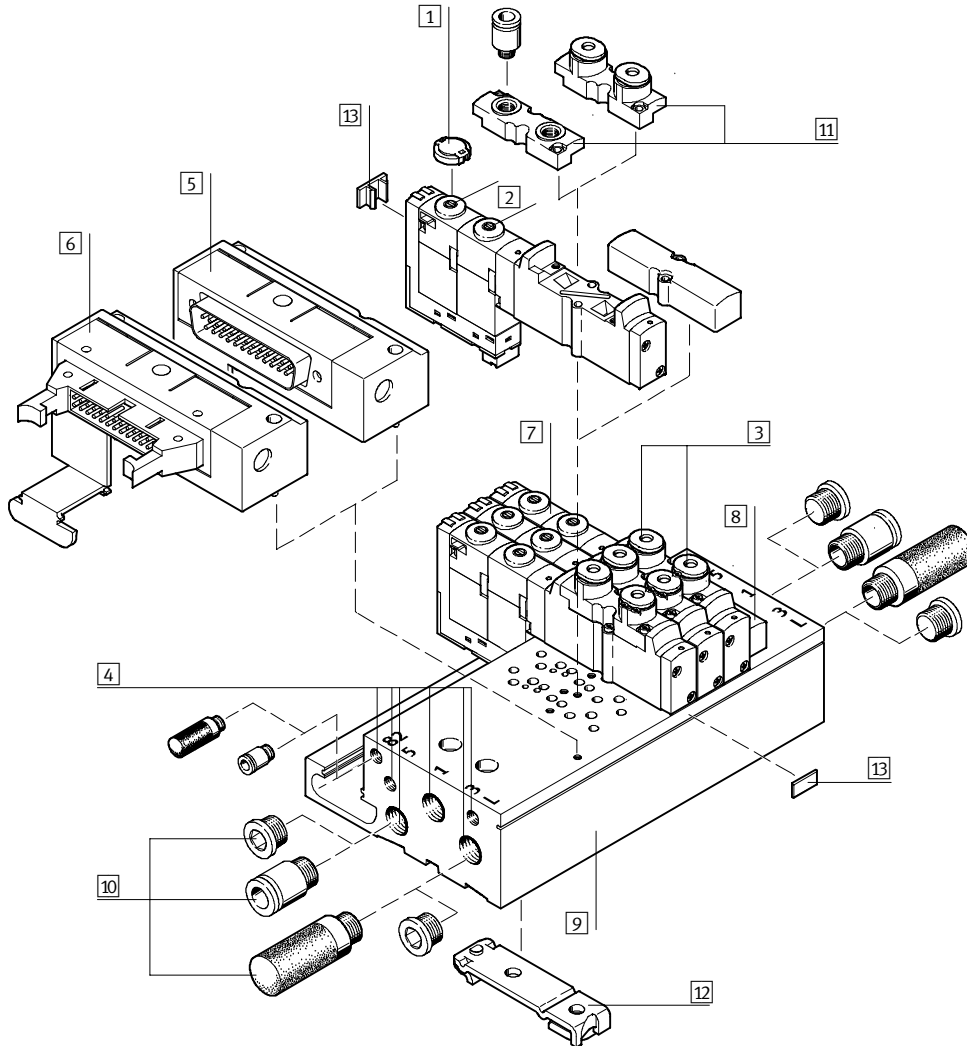
CPASC valve terminal with sub-base valves

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)		7 Cover for vacant position (blanking plate)	10 H-rail mounting
3 Working lines (2, 4) on the manifold block (per valve position)	5 Fieldbus Direct	8 Manifold block for sub-base valves	11 Inscription labels

CPASC valve terminal with semi in-line 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	☐10	Pneumatic connection plates for semi in-line valves
☐2	Manual override (per solenoid coil, push-in/rotary-detenting)			☐7	Cover for vacant position (blanking plate)	☐11	H-rail mounting
☐3	Working lines (2, 4) on the valve	☐5	Fieldbus Direct	☐8	Manifold block for semi in-line valves	☐12	Inscription labels
				☐9	Connectors, silencers and blanking plugs		

Valve terminal type 82 CPASC1, Smart Cubic

Key features – Pneumatic components

Valves

Sub-base valve
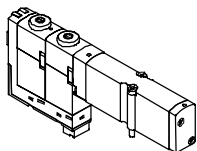
Sub-base valves can be quickly replaced since the pipe connection remains on the manifold block.

This design is also particularly flat.

Semi in-line valve (with working ports on the valve)
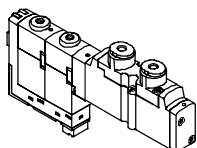
With semi in-line valves the pneumatic connection are on the top. This means that elbow connectors are not needed.

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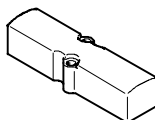
Plate without valve function for reserving valve positions on a valve terminal.

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

Manifold blocks			
Manifold block		Number of valve positions	Manifold block connections
Code A – Working lines (2, 4) on the manifold block			
Manifold block for sub-base valves and blanking plates		2 ... 20	■ With working lines (2, 4), M5 threaded hole ■ With ports for supply air (1, 12/14) and exhaust air (3, 5, 82/84) ■ With pressure compensating port (L)
Individual block for sub-base valve		1	
Code P – Working lines (2, 4) on the valve			
Manifold block for semi in-line valves and blanking plates		2 ... 20	■ No working lines ■ With ports for supply air (1, 12/14) and exhaust air (3, 5, 82/84) ■ With pressure compensating port (L)
Individual block 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 supply 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 block is the ideal solution in cramped space conditions. All available valve types can be used with this block type.

Valve terminal type 82 CPASC1, Smart Cubic

Key features – Pneumatic components

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 Spring force 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 Spring force return The piston rod side of a cylinder remains held under pressure in the normal valve position.
	E		■	5/3-way valve Mid-position exhausted Spring force return In the normal valve position, the piston rod can be moved freely.

Valve terminal type 82 CPASC1, Smart Cubic

Key features – Pneumatic components

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Valves

	Code	Circuit symbol	Size 10	Description
	X	12 2 12 82 4 3	■	1x 3/2-way valve Normally closed, external compressed air supply Pneumatic spring return Compressed air (–0.9 … +10 bar) supplied at working port 4 can be switched.
	I	4 2 14 10 12 10 3 12/14 5 82/84 1	■	2x 2/2-way valve Normally closed (operating pressure at 1 or 5), dual compressed air supply (e.g. for vacuum switching with ejector pulse) Pneumatic spring return ■ 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		■	For valve terminal only Blanking plate for vacant position

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.

Extension

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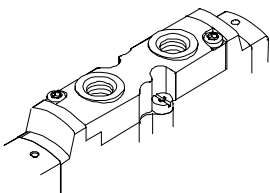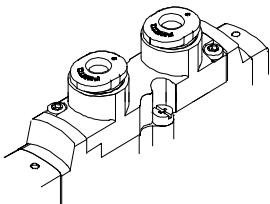
If a vacant position is replaced by a valve, a plug-in socket must also be ordered and inserted into the slot.

When ordering a HC terminal, you must determine the number and lengths of connecting cable you need and specify them in the order code.
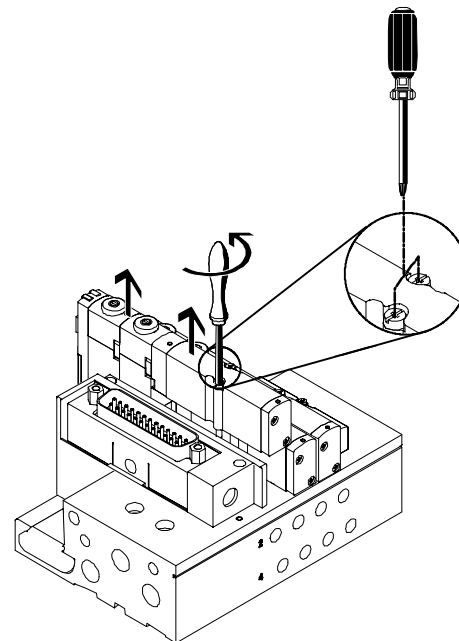
Valve terminal type 82 CPASC1, Smart Cubic

Key features – Pneumatic components

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

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, exhausting and pilot exhausts from all valves.

The common lines on a CPASC valve terminal can be connected
- at the left (code L)
- at the right (code R) or
- at both ends (code B)

Pilot supply air

The CPASC valve terminal is suitable for internal or external pilot air supply.
Graphs ➔ 4 / 3.1-59

Internal pilot supply air
If the supply pressure for your CPASC valve terminal is between 3 and 8 bar, it can be operated with internally distributed pilot air. Pilot air supply is branched at the left-hand end plate of port 1 for this purpose.

External pilot supply air
If the supply pressure for your CPASC valve terminal is between -0.9 and +10 bar, it must be operated with external pilot air. The pilot air is supplied externally via port 12/14 in this case.
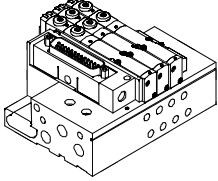
Pneumatic supply					
With CPASC valve terminal	Code	Connection	Ports for supply and exhaust		
				Code H QS connection metric, 8 mm	Code D Threaded connection G⅛
			Designation	Type	Type
	Compressed air supplied by means of internal pilot air supply, exhausting via silencer				
	S	1 Compressed air/vacuum supply	Push-in fitting	QS-G⅛-8-I	–
		3/5 Exhaust	Silencer	UC-⅛	–
		12/14 Pilot supply air	–	–	–
		82/84 Exhaust for pilot supply air	Silencer	UC-M5	–
		L Pressure compensation	Silencer	UC-M5	–
	Compressed air supplied via external pilot air supply, exhausting via silencer				
	T	1 Compressed air/vacuum supply	Push-in fitting	QS-G⅛-8-I	–
		3/5 Exhaust	Silencer	UC-⅛	–
		12/14 Pilot supply air	Push-in fitting	QSM-M5-4-I	–
		82/84 Exhaust for pilot supply air	Silencer	UC-M5	–
		L Pressure compensation	Silencer	UC-M5	–
	Compressed air supplied by means of internal pilot air supply, ducted exhaust				
	V	1 Compressed air/vacuum supply	Push-in fitting	QS-G⅛-8-I	–
		3/5 Exhaust	Push-in fitting	QS-G⅛-8-I	–
		12/14 Pilot supply air	–	–	–
		82/84 Exhaust for pilot supply air	Push-in fitting	QSM-M5-4-I	–
		L Pressure compensation	Silencer	UC-M5	–
	Compressed air supplied via external pilot air supply, ducted exhaust				
	X	1 Compressed air/vacuum supply	Push-in fitting	QS-G⅛-8-I	–
		3/5 Exhaust	Push-in fitting	QS-G⅛-8-I	–
		12/14 Pilot supply air	Push-in fitting	QSM-M5-4-I	–
		82/84 Exhaust for pilot supply air	Push-in fitting	QSM-M5-4-I	–
		L Pressure compensation	Silencer	UC-M5	–

Valve terminal type 82 CPASC1, Smart Cubic

Key features – Pneumatic components

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

Using pressure zones

The CPASC 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 separator elements 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)
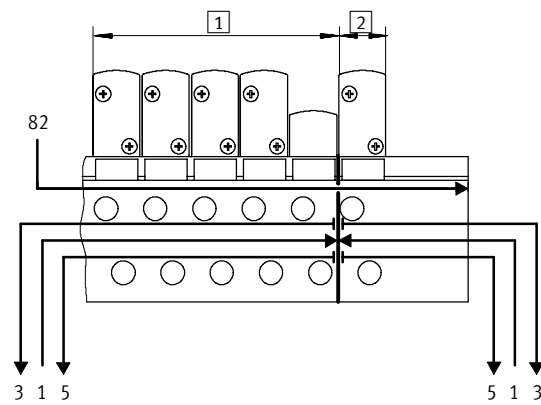
-    - Note

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 on the two adjacent valve positions

Duct separation

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

1 Pressure zone 1
2 Pressure zone 2

-    - Note

The separator element can also be mounted subsequently using an Allen key. An assembly tool for long terminals is available as an accessory.
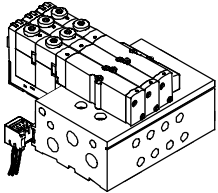
Separator element CPASC1-KT
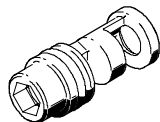
Valve terminal type 82 CPASC1, Smart Cubic

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.
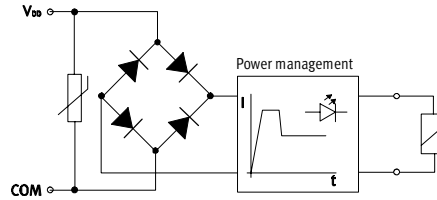
Individual electrical connection

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

Two individual electrical connection types are available for the valve terminal and for the individual block:
■ 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 valve terminal
Code IH
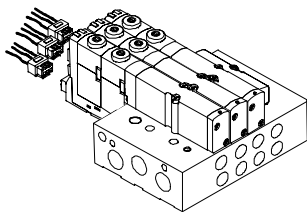
The valve terminal can be configured with 2 to max. 16 valve positions. This means that max. 32 valve solenoid coils can be actuated with this type of electrical connection.
The horizontal connection (HC) must be removed when replacing the valve.

Valve on individual block
Code SH
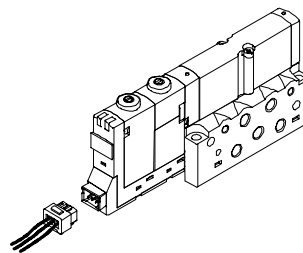
With the individual block, the electrical connection can be plugged in directly on the valve.

Dimensions – Horizontal connection (HC)

Download CAD data ➜ www.festo.com/en/engineering
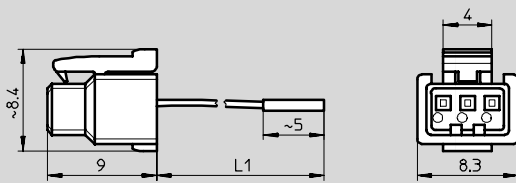
Type	Code	L1	Number of valve solenoid coils	Cable colour		
				Pin 1 Common	Pin 2 Solenoid coil 12	Pin 3 Solenoid coil 14
KMH-0,5	CH	500	1 coil	black	–	red
KMH-1	CI	1000	1 coil	black	–	red
KMH-2,5	CJ	2500	1 coil	black	–	red
KMH-5	CK	5000	1 coil	black	–	red
KMH-D-0,5	CD	500	2 coils	black	blue	red
KMH-D-1	CE	1000	2 coils	black	blue	red
KMH-D-2,5	CF	2500	2 coils	black	blue	red
KMH-D-5	CG	5000	2 coils	black	blue	red

Individual electrical connection – Plug-in (PI)

Valve on valve terminal	Valve on individual block
Code IP, IQ	Code SP, SQ
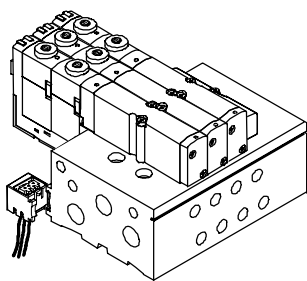
The valve terminal can be configured with 2 to max. 16 valve positions. This means that max. 32 valve solenoid coils can be actuated with this type of electrical connection.

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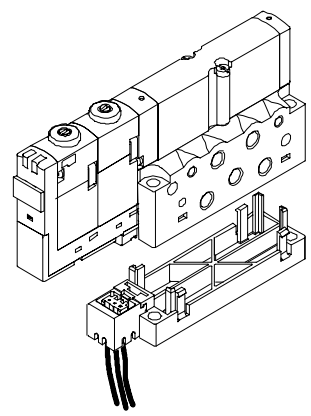
With this electrical connection variant, the connector plug is mounted on an adapter. This adapter is then attached to the individual block.

Dimensions – Plug-in (PI) connection

Download CAD data ➔ **www.festo.com/en/engineering**
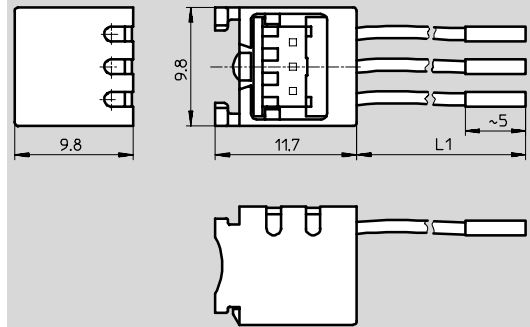
Type	Code	L1	Number of valve solenoid coils	Cable colour		
				Pin 1 Common	Pin 2 Solenoid coil 12	Pin 3 Solenoid coil 14
MHAP-PI	–	500	1 coil	black	–	red
MHAP-PI-1	–	1000	1 coil	black	–	red
MHAP-PI-D-0,5	–	500	2 coils	black	blue	red
MHAP-PI-D-1	–	1000	2 coils	black	blue	red

Electrical multi-pin plug connection

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

- 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 up 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 NPN- and PNP-switching valves achieved.

Each pin on the multi-pin plug can activate just 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
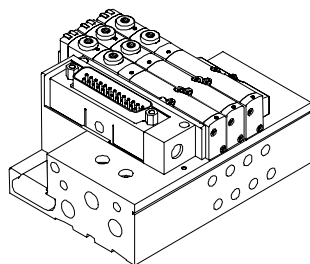
With this electrical connection variant, all valves are centrally actuated via the 25-pin connector plug.
The electrical connection is located on the left-hand side and can be rotated by 90°.

Pin allocation – Connector for Sub-D, 25-pin cable

Pin	Address/ solenoid coil	Core colour KMP6-25P-12	KMP6-25P-25	Valve positions[1]						
				4	6	8	10	12	16	20
				Valve position no./coil designation						
1	0	white	white	0/14	0/14	0/14	0/14	0/14	0/14	1/14
2	1	brown	brown	0/12	0/12	0/12	0/12	0/12	0/12	1/14
3	2	green	green	1/14	1/14	1/14	1/14	1/14	1/14	2/14
4	3	yellow	yellow	1/12	1/12	1/12	1/12	1/12	1/12	3/14
5	4	grey	grey	2/14	2/14	2/14	2/14	2/14	2/14	4/14
6	5	pink	pink	2/12	2/12	2/12	2/12	2/12	2/12	5/14
7	6	blue	blue	3/14	3/14	3/14	3/14	3/14	3/14	6/14
8	7	red	red	3/12	3/12	3/12	3/12	3/12	3/12	7/14
9	8	black	black		4/14	4/14	4/14	4/14	4/14	8/14
10	9	purple	purple		4/12	4/12	4/12	4/12	5/14	9/14
11	10	grey-pink	grey-pink			5/14	5/14	5/14	6/14	10/14
12	11	red-blue	red-blue			5/12	5/12	5/12	7/14	11/14
13	12	–	white-green			6/14	6/14	6/14	8/14	12/14
14	13	–	brown-green			6/12	6/12	6/12	9/14	13/14
15	14	–	white-yellow			7/14	7/14	7/14	10/14	14/14
16	15	–	yellow-brown			7/12	7/12	7/12	11/14	15/14
17	16	–	white-grey				8/14	8/14	12/14	16/14
18	17	–	grey-brown				8/12	9/14	13/14	17/14
19	18	–	white-pink				9/14	10/14	14/14	18/14
20	19	–	pink-brown				9/12	11/14	15/14	19/14
21	com	–	white-blue	Coil 16 … 19						
22	com	–	brown-blue	Coil 12 … 15						
23	com	white-green	white-red	Coil 8 … 11						
24	com	brown-green	brown-red	Coil 4 … 7						
25	com	white-yellow	white-black	Coil 0 … 3						
No. of solenoid coils				8	12	16	20	20	20	20

Pin diagram:
```
14+   + 1
15+   + 2
16+   + 3
17+   + 4
18+   + 5
19+   + 6
20+   + 7
21+   + 8
22+   + 9
23+   +10
24+   +11
25+   +12
      +13
```
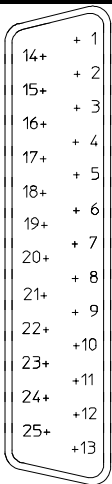
1) Shown against a grey background: Valve positions for actuation of 2 coils

Dimensions – Sub-D plug with cable

Download CAD data ➜ www.festo.com/en/engineering
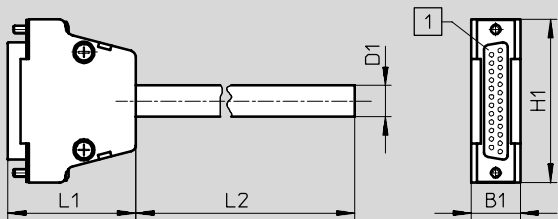
1 25-pin plug

Type	Code	B1	D1	H1	L1	L2
KMP6-25P-20-2,5	CP	16	10.3	53.4	37.7	2500
KMP6-25P-20-5	CQ	16	10.3	53.4	37.7	5000
KMP6-25P-20-10	CR	16	10.3	53.4	37.7	10000
KMP6-25P-12-2,5	CV	16	8.5	53.4	37.7	2500
KMP6-25P-12-5	CW	16	8.5	53.4	37.7	5000
KMP6-25P-12-10	CX	16	8.5	53.4	37.7	10000

Valve terminal type 82 CPASC1, Smart Cubic

Key features – Electrical components

Electrical multi-pin plug connection – Connector for flat cable
Code MF
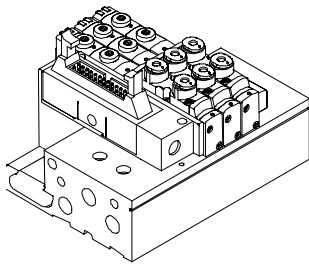
With this electrical connection variant, all valves are centrally actuated via the 26-pin connector plug. The electrical connection is located on the left-hand side and can be rotated by 90°.

Pin allocation – Connector for flat cable									
	Pin	Address/ solenoid coil	Valve positions[1]						
			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						
	No. of solenoid coils		8	12	16	20	20	20	20

1) Shown against a grey background: Valve positions for actuation of 2 coils

Valve terminal type 82 CPASC1, Smart Cubic

Key features – Electrical components

FESTO
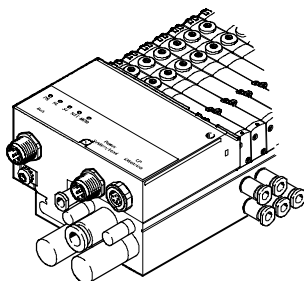
Fieldbus Direct

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

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

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

➜ Info 221 CP installation system

Address allocation – Solenoid coils
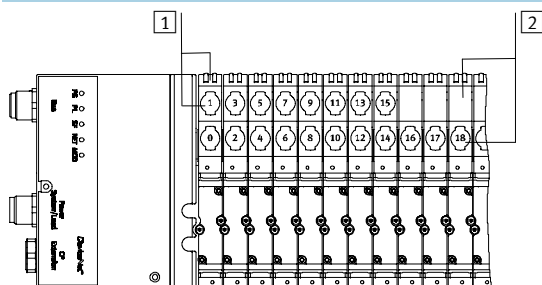
| 1 | Valve solenoid coils 12 |
| 2 | Valve solenoid coils 14 |

The addresses of the valve solenoids on the CPASC-DN 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:
- Pilot solenoid coil 14 occupies the less significant address
- Pilot 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	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 terminal type 82 CPASC1, 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 of the manifold block.

The manual override (MO) allows the valve to be switched when in the electrically non-activated or de-energised status. The valve is switched by pushing the manual override. The set switching status can also be secured by rotating the manual override.

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

- ☱ - Note

A manually actuated valve (manual override) cannot be reset electrically. Conversely, an electrically actuated valve cannot be reset using the mechanical manual override.
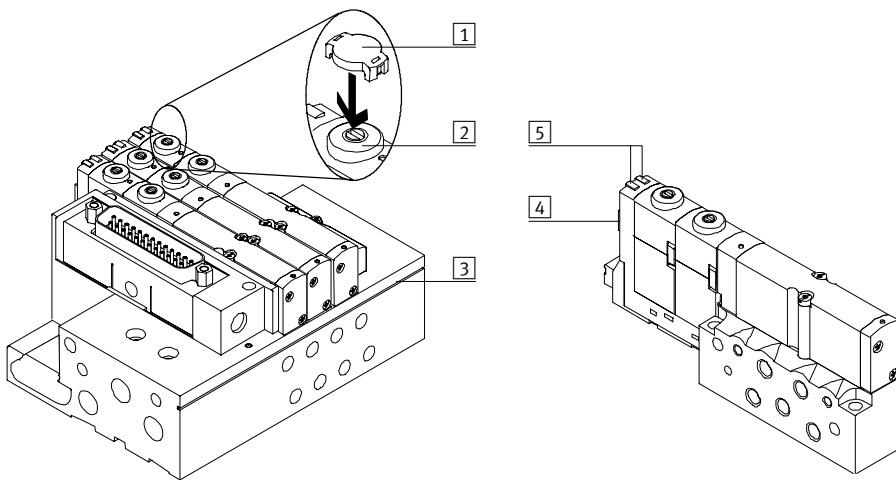
1 Cover for manual override (code V or accessory CPASC1-MO-V)
2 Optional manual override (pushing and detenting via turning using a screwdriver)
3 Slot for inscription labels type MH-BZ-80x
4 Location for valve inscription label type ISB-6x10
5 LED signal status display per valve position

Manual override MO

Manual override with automatic return (push-in)	Manual override with lock (detenting)
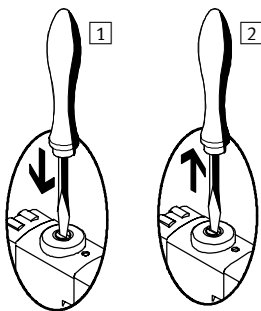
1 Press in the stem of the MO with a pin or screwdriver .
⤳ Valve is in switching position
2 Remove the blade of the screwdriver.
Spring force pushes the stem of the MO back.
⤳ Valve returns to initial position (not with double solenoid valve code J).
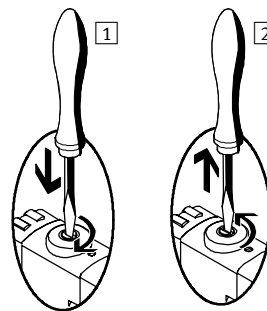
1 Press in the stem of the MO using a screwdriver until the valve switches and then turn the stem clockwise by 90° until the stop is reached.
⤳ Valve remains in switching position
2 Turn the stem anti-clockwise by 90° until the stop is reached and then remove the screwdriver. Spring force pushes the stem of the MO back.
⤳ Valve returns to initial position (not with double solenoid valve code J).

Mounting – Valve terminal

Sturdy terminal assembly thanks to:
- Four through-holes for wall mounting
- Integrated attachment for H-rail mounting

Wall mounting
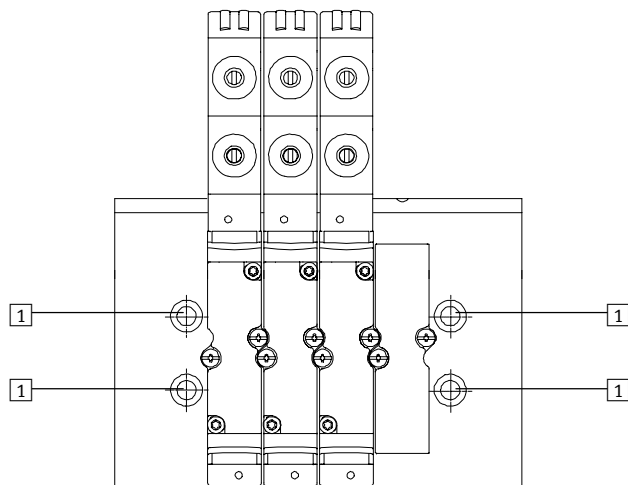
The CPASC valve terminal is screwed onto the mounting surface using four M4 screws.

[1] Holes for wall mounting

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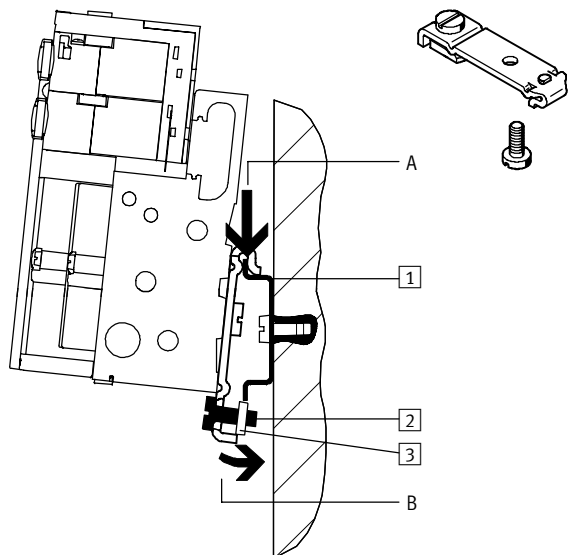
The CPASC valve terminal is attached to the H-rail (see arrow A).
The CPASC valve terminal is then hinged on the H-rail and secured in place with the clamping component (see arrow B).

For H-rail mounting of the CPA valve terminal, you will need the mounting kit CPA-BG-NRH. This permits mounting of the valve terminal on an H-rail to DIN EN 50 022.

[1] Holes for wall mounting
[2] Self-tapping M4x10 screw of the H-rail clamping unit
[3] Clamping component of the H-rail clamping unit

Valve terminal type 82 CPASC1, Smart Cubic

Key features – Mounting types

FESTO

Mounting – Individual block

The individual block for wall mounting
is designed for integration into a sys-
tem or machine.

Wall mounting – Horizontal
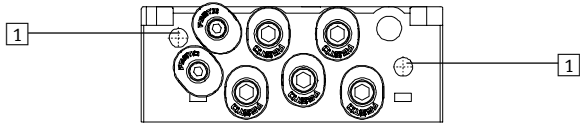
| 1 | Mounting holes |

Wall mounting – Vertical

| 1 | Mounting holes |

Application-optimised valve terminals
Smart Cubic

3.1
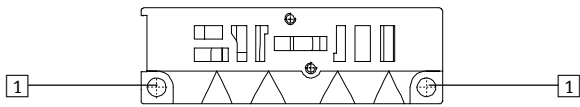
Valve terminal type 82 CPASC1, Smart Cubic

Technical data

- ▮▮ - Flow rate
150 l/min

- ⌐⌐ - Width
10 mm

- ⌐ - Voltage
24 V DC
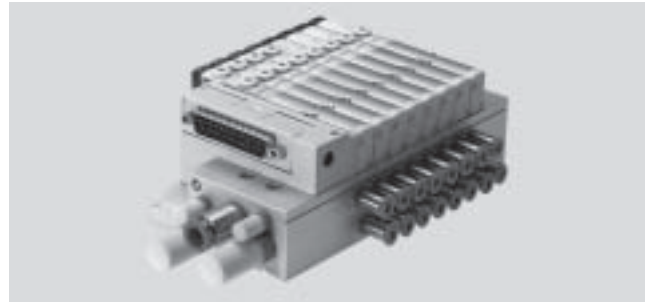
General technical data										
Valve		5/2-way valve		2x 3/2-way valve		5/3-way valve			1x 3/2-way valve	2x 2/2-way valve
				Normally		Mid-position			Normally	
		Single solenoid	Double solenoid	open	closed	pressur-ised	closed	exhausted	closed	closed
Valve function ordering code		M	J	N	K	B	G	E	X	I
Design		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 DIN EN 50 022								
Assembly position		Any								
Manual override		Pushing/detented by turning								
Pneumatic connections										
Pneumatic connection		Via manifold block, PRS manifold or individual connection								
Supply port	1	G⅛ (M5 with individual block)								
Exhaust port	3/5	G⅛ (M5 with individual block)								
Working lines	2/4	Depending on the connection type selected ■ M5 ■ QS-3 ■ QS-4								
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 terminal type 82 CPASC1, Smart Cubic

Technical data

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
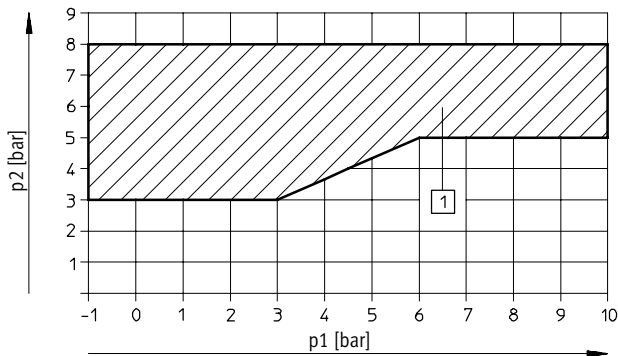
| 1 | Operating range for valves with external pilot air supply

for valve sub-bases with code N, K, I
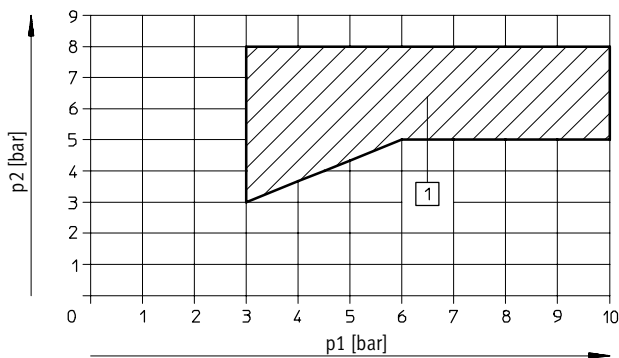
| 1 | Operating range for valves with external pilot air supply

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	10
	off	20	–	20	20	25	25	25	20	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 / 3.1-63								
Grade of filtration	[µm]	40								
Ambient temperature	[°C]	−5 ... +60		−5 ... +40[2]		−5 ... +60				−5 ... +40[2]
Storage temperature	[°C]	−20 ... +40								
Corrosion resistance class CRC[1]		1								

1) Corrosion resistance class 1 according to Festo standard 940 070
   Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

2) Restricted ambient temperature in case of fieldbus connection, otherwise same temperature range as ordering code M.

Electrical data										
Valve function ordering code		M	J	N	K	B	G	E	X	I
Electromagnetic compatibility of the CPASC valve terminal (Sub-D or flat cable connection)		Interference emission tested to EN 61 000-6-4, industry								
		Interference immunity[1] tested to EN 61 000-6-2, industry								
Protection against electric shock (protection against direct and indirect contact to EN 60204-1/IEC 204)		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. 10
Switching frequency	[Hz]	Max. 10
Duty cycle		100% at 40°C ambient temperature
Protection class to EN 60 529		IP40 (in assembled state and with detenting plug)
Relative air humidity		90% at 40°C, non-condensing
Vibration resistance		To DIN/IEC 68/EN 60 068, Parts 2-6, severity level 2
Continuous shock resistance		To DIN/IEC 68/EN 60 068, Parts 2-27, severity level 2

1) The maximum signal line length is 10 m
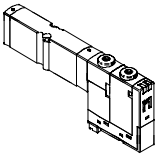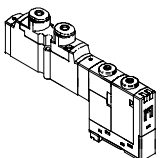
Materials										
Valve function ordering code	M	J	N	K	B	G	E	X	I	
Manifold block	Wrought aluminium alloy									
Valve sub-base	Die-cast aluminium									
Seal	Nitrile rubber									

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									

Technical data

Standard nominal flow rate [l/min]						
	Code	Valve function	Valve	Individual block	CPASC valve terminal with multi-pin plug connection/individual PI connections	CPASC valve terminal with individual horizontal connections
Sub-base valve						
	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
Semi in-line valve with working port M5						
	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
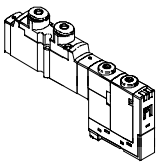
Valve terminal type 82 CPASC1, Smart Cubic

Technical data

Standard nominal flow rate [l/min]					
	Code	Valve function	Valve	Individual block	CPASC valve terminal with multi-pin plug connection/individual PI connections	CPASC valve terminal with individual horizontal connections
Semi in-line valve, working port with QS-3 fitting					
	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
Semi in-line valve, working port with QS-4 fitting					
	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 terminal type 82 CPASC1, Smart Cubic
Technical data

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 51 524-HLP32; basic oil viscosity 32 CST at 40 °C).

Bio-oils
When using bio-oils (oils which are based upon synthetic or native ester, e.g. rapeseed oil methyl ester), the maximum residual oil content of 0.1 mg/m^3 must not be exceeded (see ISO 8573-1 Class 2).

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

Application-optimised valve terminals
Smart Cubic

3.1

Valve terminal type 82 CPASC1, Smart Cubic

Technical data

Dimensions – Sub-base valve

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

With individual plug-in (PI) connection

12.6
89.4
3
18.65
41.25
42.6
1
34.2
9.8

M2×20
2
10

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

With individual horizontal connection (HC)

100
95.6
3
12.6
18.5
5.65
37.7
39.05
1
9.8

M2×20
2
10

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**

With individual plug-in (PI) connection

17.6 16.8 M5
22.9
43.8
1

1 Individual PI connection

With individual horizontal connection (HC)

17.6 16.8 M5
40.2
1

1 Individual horizontal connection

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

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

With individual plug-in (PI) connection

17.6 16.8 QS3/QS4
29.4
50.2
1

1 Individual PI connection

With individual horizontal connection (HC)

17.6 16.8 QS3/QS4
46.6
1

1 Individual horizontal connection

Valve terminal type 82 CPASC1, Smart Cubic

Technical data

Dimensions – Individual sub-base

Download CAD data ➜ **www.festo.com/en/engineering**

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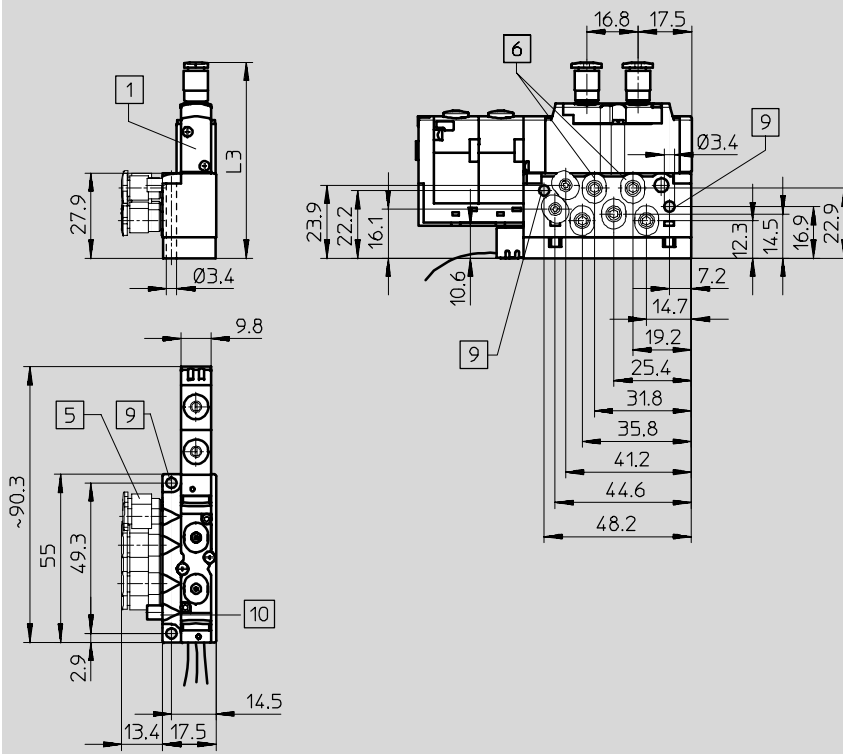
1 Semi in-line valve with
   M5 threaded connections
5 Push-in fitting
6 Working lines for sub-base
   valve (not required with semi
   in-line valves)
9 4x mounting holes
10 Silencer for exhaust air

Valve type		L3
Semi in-line valve	with working port M5	50.8
	with working port QS-3	57.2
	with working port QS-4	57.2
Sub-base valve		48.3
Blanking plate		37.1

Dimensions – Individual sub-base

Download CAD data ➜ **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 terminal type 82 CPASC1, Smart Cubic

Technical data

Dimensions – Valve terminal

With Sub-D multi-pin plug connection

Download CAD data ➜ www.festo.com/en/engineering
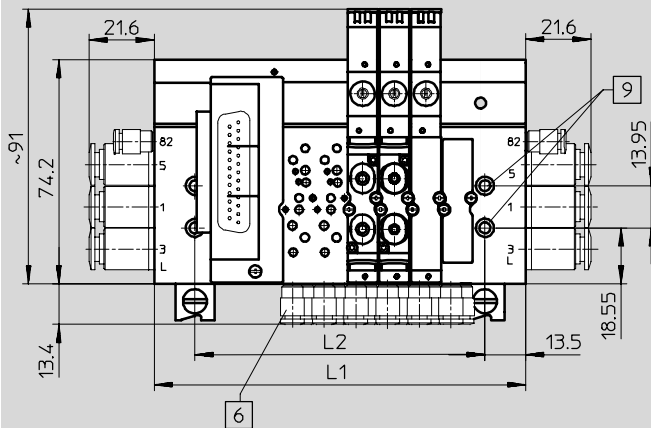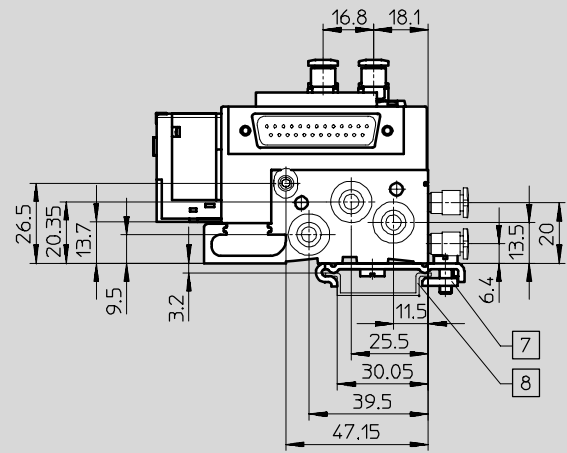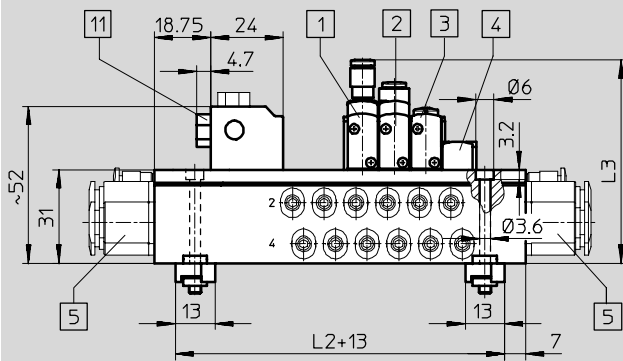
[1]	Semi in-line valve with M5 threaded connection	[3]	Sub-base valve	[6]	Working lines for sub-base valves (not required with semi in-line valves)	[7]	Mounting for H-rail TH 35-7.5 EN60 715
[2]	Semi in-line valve with integrated push-in fitting	[4]	Blanking plate for vacant position			[8]	H-rail
		[5]	Push-in fitting			[9]	4x mounting holes
						[11]	Sub-D multi-pin plug connection, 25-pin, 90° rotatable

Valve positions	L1	L2
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
	with working port QS-3	60.3
	with working port QS-4	60.3
Sub-base valve		51.4
Blanking plate		40.2

Application-optimised valve terminals
Smart Cubic

3.1

Dimensions – Valve terminal

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

With multi-pin connector for flat cable

1	Semi in-line valve with M5 threaded connection	3	Sub-base valve	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
2	Semi in-line valve with integrated push-in fitting	4	Blanking plate for vacant position			8	H-rail
		5	Push-in fitting			9	4x mounting holes
						12	Connector for flat cable, 26-pin, 90° rotatable

Valve terminal type 82 CPASC1, Smart Cubic

Technical data

Dimensions – Valve terminal

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

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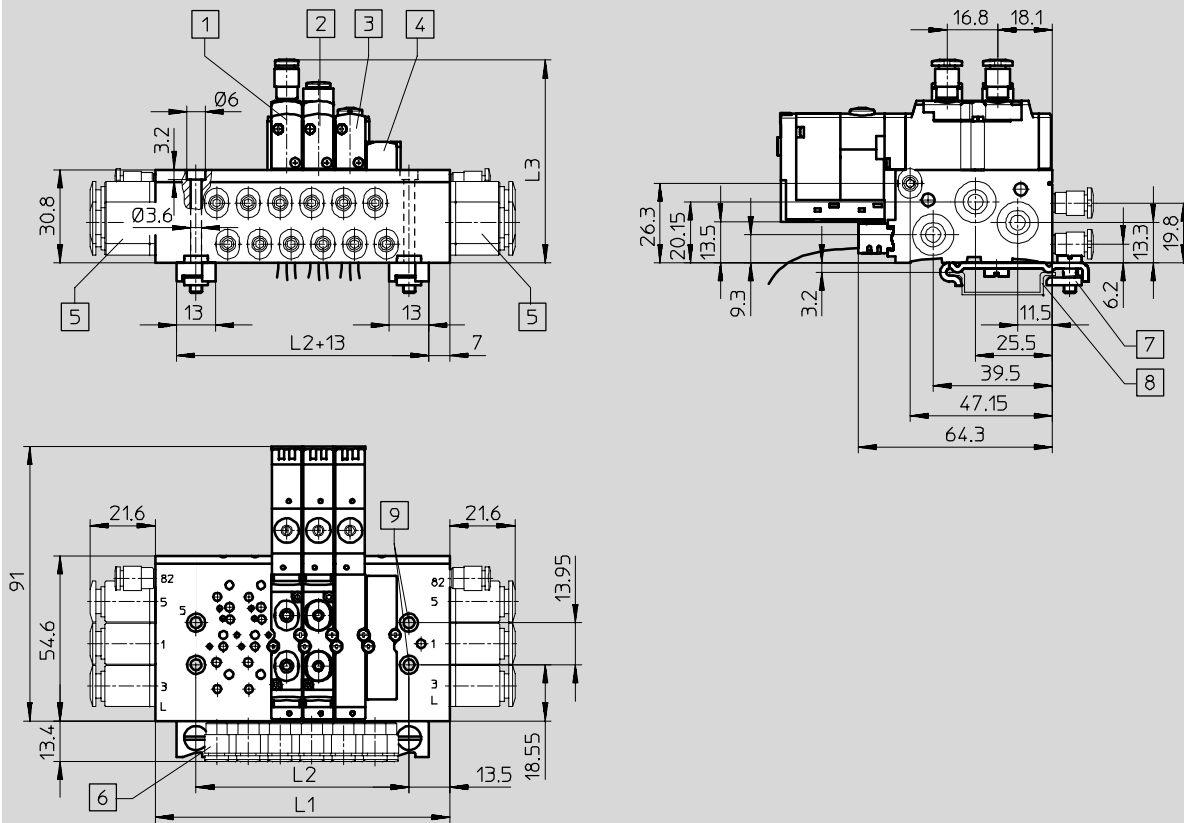
1	Semi in-line valve with M5 threaded connection	3	Sub-base valve	6	Working lines for sub-base valves (not required with semi in-line valves)	7	Mounting for H-rail TH 35-7.5 EN60 715
2	Semi in-line valve with integrated push-in fitting	4	Blanking plate for vacant position			8	H-rail
		5	Push-in fitting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

Valve positions	L1	L2
2	55	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 terminal type 82 CPASC1, Smart Cubic

Technical data

Dimensions – Valve terminal

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

With individual horizontal connection (HC)

1	Semi in-line valve with M5 threaded connection	3	Sub-base valve
2	Semi in-line valve with integrated push-in fitting	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 terminal type 82 CPASC1, Smart Cubic

Technical data

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

[1] Semi in-line valve with M5 threaded connection	[3] Sub-base valve	[6] Working lines for sub-base valves (not required with semi in-line valves)
[2] Semi in-line valve with integrated push-in fitting	[4] Blanking plate for vacant position	
	[5] Push-in fitting	

[7] Mounting for H-rail TH 35-7.5 EN60 715		
[8] H-rail		
[9] 4x mounting holes		
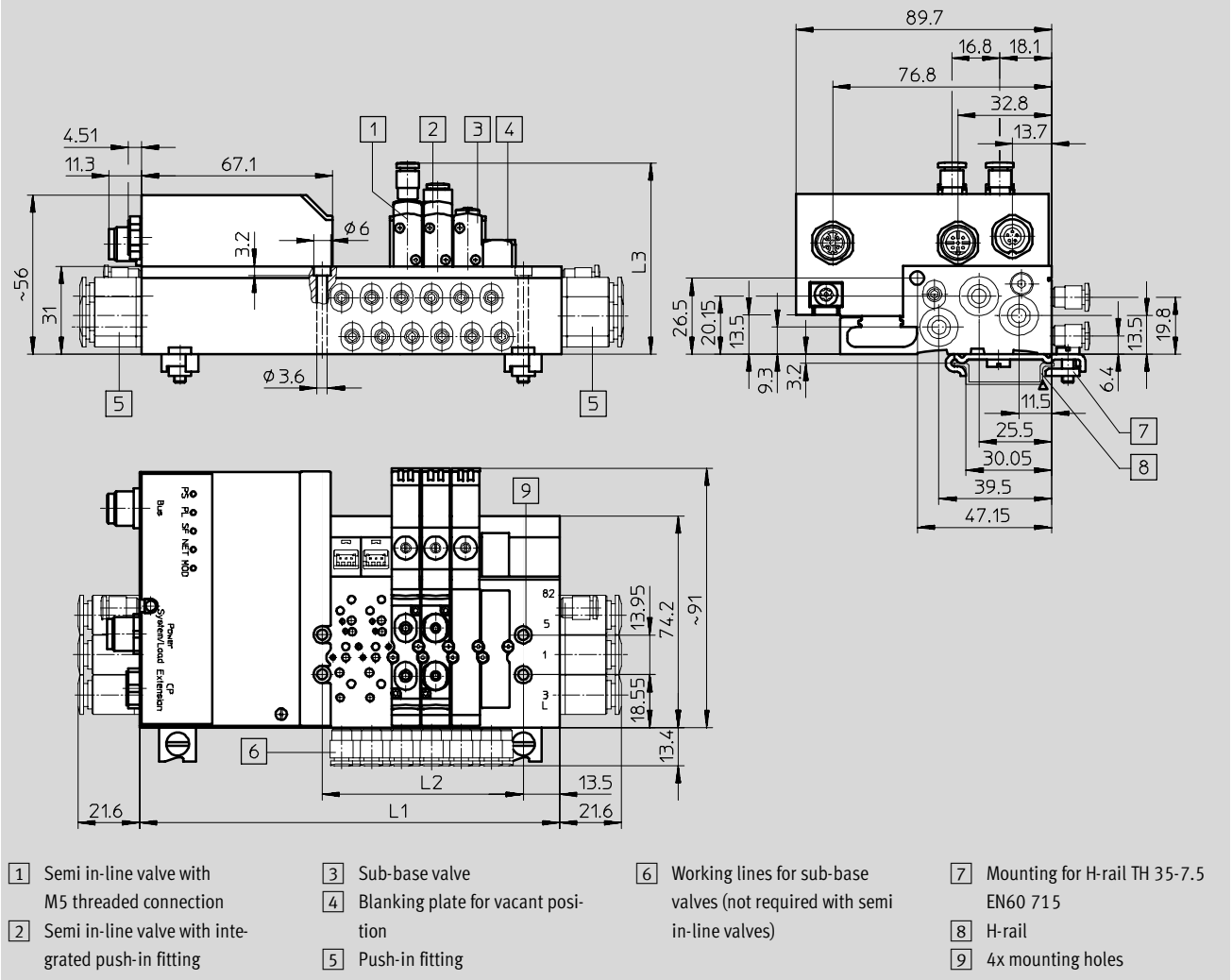
Valve positions	L1	L2
4	127.2	49.5
6	148.2	70.5
8	169.2	91.5
10	190.2	112.5
12	211.2	133.5
16	253.2	175.5
20	295.2	217.5
24	337.2	259.5

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 terminal 82 CPASC1, Smart Cubic – Multi-pin

Ordering data – Modular products

M Mandatory data →

Module No.	Valve terminal	Size	Power supply	Electrical connection	Position of 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	N V	S T V X	L R B	H D
Ordering example										
529 045	**82P** –	**10** –	**1**	–	–	–				
1	2	3	4	5	6	7	8	9	10	11

Ordering table

Size		10	Conditions	Code	Enter code
M 1	Module No.	**529 045**			
2	Valve terminal	Valve terminal type 82, Smart Cubic, CPASC1		**82P**	82P
3	Size [mm]	10		**-10**	-10
4	Power supply [V]	Power supply for valves 24 DC		**-1**	-1
5	Electrical connection	Multi-pin plug connection for Sub-D, 25-pin	1	**MS**	
		Multi-pin plug connection for flat cable, 26-pin	2	**MF**	
6	Position of working ports	Working ports on valve		**-P**	
		Working ports on sub-base		**-A**	
7	Type of working ports	Threaded connection M5		**B**	
		Push-in fitting QS-3		**E**	
		Push-in fitting QS-4		**F**	
8	Manual override	Manual override, push-in/detenting		**-N**	
		Manual override blocked		**-V**	
9	Pneumatic supply	Internal pilot air supply, exhausting via silencer		**-S**	
		External pilot air supply, exhausting via silencer		**-T**	
		Internal pilot air supply, ducted exhaust air		**-V**	
		External pilot air supply, ducted exhaust air		**-X**	
10	Pneumatic supply connection	Supply at left		**L**	
		Supply at right		**R**	
		Supply at both ends		**B**	
11	Type of connections	Push-in fitting QS-8		**H**	
		Threaded connection G⅛		**D**	

1 **MS** At least 2 valve positions must be equipped.   2 **MF** At least 4 valve positions must be equipped.

Valve terminal 82 CPASC1, Smart Cubic – Multi-pin

Ordering data – Modular products

M	Mandatory data		O	Options

Equipment at valve position 0 … 19	User docu-mentation	Accessories
12 Valves: M, J, N, K, B, G, E, X, I, L, V, W, R **13 Duct separation, duct 1, valve position 0 … 18:** T	B, 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

– **12 + 13** – **14** + **15**

Ordering table

Size			10	Condi-tions	Code	Enter code
↓	**12**	Equipment at valve position 0 … 19		3	-	-
M		Valves	5/2-way valve, single solenoid		**M**	Enter equip-ment selection for valve positions in order code
			5/2-way valve, double solenoid		**J**	
			2x 3/2-way valve, normally open		**N**	
			2x 3/2-way valve, normally closed		**K**	
			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, normally closed, dual compressed air supply		**I**	
			Vacant position		**L**	
			Duct separation, duct 3 separate	4	**V**	
			Duct separation, duct 5 separate	4	**W**	
			Duct separation, duct 3/5 separate	4	**R**	
	13	Duct separation, duct 1, valve position 0 … 18	Duct 1 separate	4	**T**	
	14	User documentation	Express waiver - no manual to be included (already available)		**-B**	
			Manuals, German		**-D**	
			Manuals, English		**-E**	
			Manuals, French		**-F**	
			Manuals, Italian		**-I**	
			Manuals, Spanish		**-S**	
			Manuals, Swedish		**-V**	
O	**15**	Accessories			**+**	+
		H-rail mounting	1		**H**	
		Connecting cable, Sub-D, 25-pin (25-strand)	2.5 m	1 … 99	5	**…CP**	
			5 m	1 … 99	5	**…CQ**	
			10 m	1 … 99	5	**…CR**	
		Connecting cable, Sub-D, 25-pin (12-strand)	2.5 m	1 … 99	5	**…CV**	
			5 m	1 … 99	5	**…CW**	
			10 m	1 … 99	5	**…CX**	

3 **Equipment at valve position 0 … 19**
Max. number of coils: 20
Coil usage of the valves: I, J, K, L, N, B, E, G: 2 coils
  M, X: 1 coil
With 4 … 12 valve positions: Only with valve M, N, K, X, I, L from position 9
With 4 … 16 valve positions: Only with valve M, N, K, X, I, L from position 5
With 4 … 20 valve positions: Only with valve M, N, K, X, I, L

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.
Duct separation T only 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 is only permissible with 2, 4 or 6 valve positions.

Valve terminal type 82 CPASC1, with individual plug-in connection

Ordering data – Modular products

FESTO

M Mandatory data →

Module No.	Valve terminal	Size	Power supply	Electrical connection	Position of 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	N V	S T V X	L R B	H D
Ordering example										
529 045	**82P**	**– 10**	**– 1**		–		–	–		
1	2	3	4	5	6	7	8	9	10	11

Ordering table

Size		10	Conditions	Code	Enter code
M **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	Power supply [V]	Power supply for valves 24 DC		**-1**	-1
5	Electrical connection	Connecting cable 0.5 m, for individual plug-in connection, 2 coils	1	**IP**	
		Connecting cable 1 m, for individual plug-in connection, 2 coils	1	**IQ**	
6	Position of working ports	Working ports on valve		**-P**	
		Working ports on sub-base		**-A**	
7	Type of working ports	Threaded connection M5		**B**	
		Push-in fitting QS-3		**E**	
		Push-in fitting QS-4		**F**	
8	Manual override	Manual override, push-in/detenting		**-N**	
		Manual override blocked		**-V**	
9	Pneumatic supply	Internal pilot air supply, exhausting via silencer		**-S**	
		External pilot air supply, exhausting via silencer		**-T**	
		Internal pilot air supply, ducted exhaust air		**-V**	
		External pilot air supply, ducted exhaust air		**-X**	
10	Pneumatic supply connection	Supply at left		**L**	
		Supply at right		**R**	
		Supply at both ends		**B**	
11	Type of connections	Push-in fitting QS-8		**H**	
		Threaded connection G⅛		**D**	

1 **IP, IQ**   Number of valve positions: 2, 4, 6, 8, 10, 12, 16.

Transfer order code

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

Valve terminal type 82 CPASC1, with individual plug-in connection

Ordering data – Modular products

M Mandatory data		O Options

Equipment at valve position 0 … 15	User docu-mentation	Accessories
12 Valves: M, J, N, K, B, G, E, X, I, L, V, W, R **13 Duct separation, duct 1, valve position 0 … 14:** T	B, D, E, F, I, S, V	H

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

– [   ] – [   ] + [   ]

12 + 13   **14**   **15**

Ordering table

Size		10	Condi-tions	Code	Enter code
↓ **12**	Equipment at valve position 0 … 15			-	-
M	Valves	5/2-way valve, single solenoid		M	Enter equip-ment selection for valve positions in order code
		5/2-way valve, double solenoid		J	
		2x 3/2-way valve, normally open		N	
		2x 3/2-way valve, normally closed		K	
		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, normally closed, dual compressed air supply		I	
		Vacant position		L	
		Duct separation, duct 3 separate	2	V	
		Duct separation, duct 5 separate	2	W	
		Duct separation, duct 3/5 separate	2	R	
13	Duct separation, duct 1, valve position 0 … 14	Duct 1 separate	2	T	
14	User documentation	Express waiver - no manual to be included (already available)		-B	
		Manuals, German		-D	
		Manuals, English		-E	
		Manuals, French		-F	
		Manuals, Italian		-I	
		Manuals, Spanish		-S	
		Manuals, Swedish		-V	
O **15**	Accessories			+	+
	H-rail mounting	1		H	

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.
Duct separation T only 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 terminal type 82 CPASC1, with individual horizontal connection

Ordering data – Modular products

FESTO

M	Mandatory data										→
	Module No.	Valve terminal	Size	Power supply	Electrical connection	Position of 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	N V	S T V X	L R B	H D
	Ordering example										
	529 045	**82P** –	**10** –	**1**	**IH** –		–		–		
	1	2	3	4	5	6	7	8	9	10	11

Ordering table

Size			10			Condi-tions	Code	Enter code
M	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	Power supply [V]	Power supply for valves 24 DC				**-1**	-1
	5	Electrical connection	Individual horizontal electrical connection			1	**IH**	IH
	6	Position of working ports	Working ports on valve				**-P**	
			Working ports on sub-base				**-A**	
	7	Type of working ports	Threaded connection M5				**B**	
			Push-in fitting QS-3				**E**	
			Push-in fitting QS-4				**F**	
	8	Manual override	Manual override, push-in/detenting				**-N**	
			Manual override blocked				**-V**	
	9	Pneumatic supply	Internal pilot air supply, exhausting via silencer				**-S**	
			External pilot air supply, exhausting via silencer				**-T**	
			Internal pilot air supply, ducted exhaust air				**-V**	
			External pilot air supply, ducted exhaust air				**-X**	
	10	Pneumatic supply connection	Supply at left				**L**	
			Supply at right				**R**	
			Supply at both ends				**B**	
	11	Type of connections	Push-in fitting QS-8				**H**	
↓			Threaded connection G⅛				**D**	

1   **IH**   Number of valve positions: 2, 4, 6, 8, 10, 12, 16.

Transfer order code

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

Valve terminal type 82 CPASC1, with individual horizontal connection

Ordering data – Modular products

FESTO

M	Mandatory data		O	Options

Equipment at valve position 0 … 15	User docu-mentation	Accessories
12 Valves: M, J, N, K, B, G, E, X, I, L	B, 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

−   **12**   − **13** + **14**

Ordering table

Size		10	Condi-tions	Code	Enter code
↓ **12**	Equipment at valve position 0 … 15			-	-
M	Valves	5/2-way valve, single solenoid		**M**	Enter equip-ment selection for valve positions in order code
		5/2-way valve, double solenoid		**J**	
		2x 3/2-way valve, normally open		**N**	
		2x 3/2-way valve, normally closed		**K**	
		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, normally closed, dual compressed air supply		**I**	
		Vacant position		**L**	
13	User documentation	Express waiver - no manual to be included (already available)		**-B**	
		Manuals, German		**-D**	
		Manuals, English		**-E**	
		Manuals, French		**-F**	
		Manuals, Italian		**-I**	
		Manuals, Spanish		**-S**	
		Manuals, Swedish		**-V**	
O **14**	Accessories			**+**	+
	H-rail mounting	1		**H**	
	Connecting cable for individual connec-tion, 2 coils	0.5 m	1 … 99		**…CD**	
		1 m	1 … 99		**…CE**	
		2.5 m	1 … 99		**…CF**	
		5 m	1 … 99		**…CG**	
	Connecting cable for individual connec-tion, 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**

M Mandatory data

Module No.	Valve terminal	Size	Power supply	Electrical connection	Position of 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	N V	S T V X	L	B F
Ordering example										
529 045	**82P** –	**10** –	**1**		–		–	–	**L**	
1	2	3	4	5	6	7	8	9	10	11

Ordering table

Size			10		Conditions	Code	Enter code
M	**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	Power supply [V]	Power supply for valves 24 DC			**-1**	-1
	5	Electrical connection	Individual plug-in sub-base, connecting cable 0.5 m	1		**SP**	
			Individual plug-in sub-base, connecting cable 1 m	1		**SQ**	
			Individual sub-base, horizontal connection	1		**SH**	
	6	Position of working ports	Working ports on valve			**-P**	
			Working ports on sub-base			**-A**	
	7	Type of working ports	Threaded connection M5			**B**	
			Push-in fitting QS-3			**E**	
			Push-in fitting QS-4			**F**	
	8	Manual override	Manual override, push-in/detenting			**-N**	
			Manual override blocked			**-V**	
	9	Pneumatic supply	Internal pilot air supply, exhausting via silencer			**-S**	
			External pilot air supply, exhausting via silencer			**-T**	
			Internal pilot air supply, ducted exhaust air			**-V**	
			External pilot air supply, ducted exhaust air			**-X**	
	10	Pneumatic supply connection	Supply at left			**L**	L
	11	Type of connections	Threaded connection M5			**B**	
			Push-in fitting QS-4			**F**	

1 **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 terminal type 82 CPASC1, with individual sub-base

Ordering data – Modular products

M	Mandatory data

Equipment for valve positions

12 Valves: M, J, N, K, B, G, E, I

O	Options

Accessories

...CD, ...CE, ...CF, ...CG, ...CH, ...CI, ...CJ, ...CK

– 12   + 13

Ordering table						
Size			10	Condi-tions	Code	Enter code
↓ 12	Equipment for valve positions				-	-
M	Valves		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, normally closed, dual compressed air supply		I	
O 13	Accessories				+	+
	Connecting cable for individual connec-tion, 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	
	Connecting cable for individual connec-tion, 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 terminal 82 CPASC1, Smart Cubic – DeviceNet

Ordering data – Modular products

FESTO

M	Mandatory data									→
Module No.	**Valve terminal**	**Size**	**Electrical connection**	**Position of working ports**	**Type of working ports**	**Manual over-ride**	**Pneumatic supply**	**Pneumatic supply connec-tion**	**Type of connec-tions**	
538 509	82P	10	DN	P A	B E F	N V	S T V X	L R B	B F H D	
Ordering example										
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**
M 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**	-DN
5	Position of working ports		Working ports on valve		**-P**	
			Working ports on sub-base		**-A**	
6	Type of working ports		Threaded connection M5		**B**	
			Push-in fitting QS-3		**E**	
			Push-in fitting QS-4		**F**	
7	Manual override		Manual override, push-in/detenting		**-N**	
			Manual override blocked		**-V**	
8	Pneumatic supply		Internal pilot air supply, exhausting via silencer		**-S**	
			External pilot air supply, exhausting via silencer		**-T**	
			Internal pilot air supply, ducted exhaust air		**-V**	
			External pilot air supply, ducted exhaust air		**-X**	
9	Pneumatic supply connection		Supply at left		**L**	
			Supply at right		**R**	
			Supply at both ends		**B**	
10	Type of connections		Threaded connection M5		**B**	
			Push-in fitting QS-4		**F**	
			Push-in fitting QS-8		**H**	
			Threaded connection G⅛		**D**	

Transfer order code

538 509	82P –	10 –	DN –	–	–	–		
1	2	3	4	5	6	7	8	9	10

Valve terminal 82 CPASC1, Smart Cubic – DeviceNet

Ordering data – Modular products

M	Mandatory data					O	Options

Equipment at valve position 0 … 23		User documentation	Accessories
11 Valves: M, J, N, K, B, G, E, X, I, L, V, W, R **12 Duct separation, duct 1, valve position 0 … 22:** T		D, E, F, I, S, V	H, …D, …M

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		–		+	
11 + 12		**13**		**14**	

Ordering table

Size		10	Conditions	Code	Enter code
↓ **11**	Equipment at valve position 0 … 23		[1]	-	-
M	Valves	5/2-way valve, single solenoid		M	Enter equipment 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, normally closed, dual compressed air supply		I	
		Vacant position		L	
		Duct separation, duct 3 separate	[2]	V	
		Duct separation, duct 5 separate	[2]	W	
		Duct separation, duct 3/5 separate	[2]	R	
12	Duct separation, duct 1, valve position 0 … 22	Duct 1 separate	[2]	T	
13	User documentation	Manuals, German		-D	
		Manuals, English		-E	
		Manuals, French		-F	
		Manuals, Italian		-I	
		Manuals, Spanish		-S	
		Manuals, Swedish		-V	
O 14	Accessories			+	+
	H-rail mounting	1		H	
	Connector plug straight	1 … 99		…D	
	DeviceNet B-coded	1 … 99		…M	

[1] **Equipment at valve position 0 … 23**
Max. number of coils: 32
Coil usage of the valves: I, J, K, L, N, B, E, G: 2 coils
                            M, X: 1 coil

[2] **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.
Duct separation T only 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 16 17 18 19 20 21 22 23		–		+	
11 + 12		**13**		**14**	

Valve terminal type 82 CPASC1, Smart Cubic
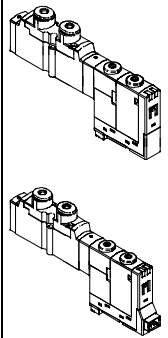
Ordering data

Ordering data – Valves						
				Electrical plug-in connection		Electrical horizontal connection	
	Code	Valve function	Type	Part No.	Type	Part No.
Sub-base valve						
	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**
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 terminal type 82 CPASC1, Smart Cubic

Ordering data

		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**

Ordering data – Valves

Application-optimised valve terminals
Smart Cubic

3.1

Valve terminal type 82 CPASC1, Smart Cubic

Ordering data

FESTO

Application-optimised valve terminals
Smart Cubic
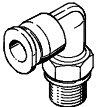
3.1

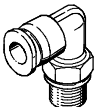| Ordering data – Accessories				
Designation			Type	Part No.
Plug socket with cable for plug-in connection				
	For 1 coil	0.5 m	**MHAP-PI**	**197 260**
		1 m	**MHAP-PI-1**	**532 182**
	For 2 coils	0.5 m	**MHAP-PI-D-0,5**	**529 116**
		1 m	**MHAP-PI-D-1**	**527 395**
Plug socket with cable for horizontal 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 IP20				
	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 0.75 mm^2	**NTSD-GD-9-M12-5POL-RK**	**538 999**
Fieldbus connection				
	Fieldbus socket for MicroStyle connection, M12, socket (A-coded)		**FBSD-GD-9-5POL**	**18 324**
Valve terminal connection				
	Angled plug – angled socket WS-WD	0.5 m	**KVI-CP-1-WS-WD-0,5**	**178 564**
		2 m	**KVI-CP-1-WS-WD-2**	**163 139**
		5 m	**KVI-CP-1-WS-WD-5**	**163 138**
	Plug straight GS-WD	5 m	**KVI-CP-1-GS-WD-5**	**163 137**
		8 m	**KVI-CP-1-GS-WD-8**	**163 136**
	Plug straight GS-GD	2 m, for chain link trunking	**KVI-CP-2-GS-GD-2**	**170 234**
		5 m, for chain link trunking	**KVI-CP-2-GS-GD-5**	**170 235**
		8 m, for chain link trunking	**KVI-CP-2-GS-GD-8**	**165 616**

Valve terminal type 82 CPASC1, Smart Cubic

Ordering data

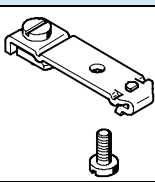| Ordering data – Accessories				
Designation			Type	Part No.
Push-in fitting for working ports				
	Connecting thread M5 for tubing O.D.	3 mm	**QSM-M5-3**	**153 302**
		4 mm	**QSM-M5-4**	**153 304**
		3 mm	**QSM-M5-3-I**	**153 313**
		4 mm	**QSM-M5-4-I**	**153 315**
Push-in L-fitting for working ports				
	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**
Push-in fitting for manifold block				
	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 G⅛ for tubing O.D.	4 mm	**QSM-G⅛-4-I**	**186 266**
		6 mm	**QSM-G⅛-6-I**	**186 267**
		8 mm	**QS-G⅛-8-I**	**186 109**
	Connecting thread R⅛ for tubing O.D.	4 mm	**QSM-⅛-4**	**153 305**
		6 mm	**QSM-⅛-6**	**153 307**
		4 mm	**QSM-⅛-4-I**	**153 316**
		6 mm	**QSM-⅛-6-I**	**153 318**
Push-in L-fitting for manifold block				
	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 R⅛ for tubing O.D.	4 mm	**QSML-⅛-4**	**153 334**
		6 mm	**QSML-⅛-6**	**153 336**
		4 mm	**QSMLL-⅛-4**	**153 340**
		6 mm	**QSMLL-⅛-6**	**153 342**
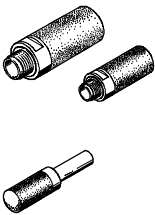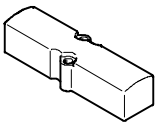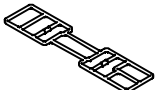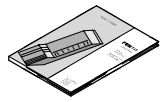
Ordering data – Accessories				
Designation			**Type**	**Part No.**
Silencers				
	Connecting thread	M3	**U-M3**	**163 978**
		M5	**U-M5**	**4 645**
		M5	**UC-M5**	**165 003**
		G⅛	**UC-⅛**	**161 419**
	Connection type, push-in sleeve	3 mm	**UC-QS-3H**	**165 005**
		4 mm	**UC-QS-4H**	**165 006**
		6 mm	**UC-QS-6H**	**165 007**
		8 mm	**UC-QS-8H**	**175 611**
Blanking plugs				
	Thread M5		**B-M5**	**3 843**
	Thread M5		**B-M5-B**	**174 308**
	Thread G⅛		**B-⅛**	**3 568**
Plugs				
	Blanking plug for tubing O.D.	4 mm	**QSC-4H**	**153 267**
		6 mm	**QSC-6H**	**153 268**
		8 mm	**QSC-8H**	**153 269**
		3 mm	**QSMC-3H**	**153 382**
Inscription labels				
	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**
Mounting				
	For H-rail		**CPASC1-BG-NRH**	**527 392**
Cover				
	Cover for vacant position[1]		**CPASC1-RP**	**527 062**
	Cover for manual override		**CPASC1-MO-V**	**527 393**
Valve seal				
	For manifold block		**CPASC1-SEAL-A**	**527 394**
Separator element and assembly tool				
	Separator element		**CPASC1-KT**	**536 942**
	Assembly tool for separator element		**CPASC1-MWKT**	**536 943**

1) One self-adhesive label supplied.

Valve terminal type 82 CPASC1, Smart Cubic

Ordering data

Ordering data – Accessories			
Designation		Type	Part No.
User documentation			
Software			
CD-ROM	Valve terminals	**P.CD-VALVE-T**	**183 350**
	Utilities	**P.CD-VI-UTILITIES-2**	**533 500**
User documentation – CPASC	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 – Fieldbus DeviceNet	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**