Valve terminal VTUX

FESTO









- Compact design with low overall height and width
- Manifold sub-bases with different widths for different flow rate with the same valves
- Vacuum generator integrated in the manifold sub-base with pressure sensor and ejector pulse
- Flow rate up to 690 l/min
- Flexibly configurable push-in fittings as a cartridge, easy to exchange in just a few simple steps
- Connection to the remote I/O system CPX-AP-I
- Connection to the remote I/O system CPX-AP-A
- IO-Link® interface
- Internal serial communication as infrastructure for highly integrated technology modules

Flexible

- Modular system offering a range of configuration options
- Manifold sub-bases for 4 valves or an individual valve, can be combined as required
- System can be extended as needed with individual manifold sub-bases and modular tie rods
- Up to 64 valve positions
- Can be converted and extended at a later date
- Air supply can be extended via additional pressure zones using supply modules
- Can be assembled using individually ordered components
- Wide range of electrical connection types for multi-pin: Sub-D, ribbon cable or springloaded terminal





Reliable

- High output reserves thanks to large pneumatic cross sections and exhausting with high flow rates
- Resilient thanks to high mechanical rigidity
- Lightweight polymer components
- Fast troubleshooting with LEDs on the valves
- Easy to service with replaceable valves and manifold sub-bases
- Manual override either nondetenting, detenting or protected against unauthorised activation (concealed)

Easy to install

- Fast and reliable delivery as a ready-to-install and tested unit or for self-assembly from individual components
- Reduced selection, ordering, installation and commissioning costs
- Solid wall mounting or DIN rail mounting

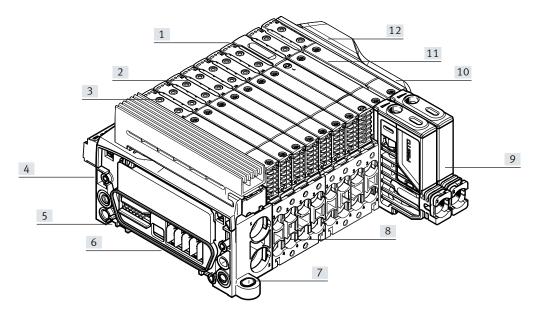
Ordering data – Product options



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

The configurator can be found at → www.festo.com/catalogue/...
Enter the part number or the type.

Part no. Type 8000800 VTUX-A-P 8000805 VTUX-A-S 8000810 VTUX-A-P-APA 8000815 VTUX-A-S-APA 8000850 VUVX



- [1] Valves in width 10 mm and manifold sub-bases in widths of 10 mm and 12 mm
- [2] Reduced downtime: LED signal status indicator
- [3] Safe operation:

 Manual override, nondetenting/detenting or
 concealed
- [4] Internal communication in parallel or series

- [5] Simple electrical connection
 - Multi-pin plug connection
 - Fieldbus interface CPX-AP-A
 - Interface CPX-AP-I
 - IO-Link®
- [6] Safe: operating voltage connection, can be switched off separately for valves
- [7] Quick to mount:
 Directly using screws or on a
 DIN rail

- [8] Practical:
 Pre-assembled cartridges can
 - be exchanged in just a few steps
- [9] Vacuum generation integrated directly into the valve terminal
- [10] Adaptable:
 The pilot air supply (internal or external) is selected using a separator in the end plate
- [11] Variable:
 - 32 valve positions/32 solenoid coils with parallel communication and 64 valve positions with serial communication
- [12] Space-saving and modular: low-profile valves and flat plate silencers; creation of pressure zones, multiple additional exhaust air and supply air possible using power supply module

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 closed

Special features

- Max. 32 valve positions/max. 32 solenoid coils with parallel communication
- Max. 64 valve positions with serial communication
- Any compressed air supply
- Creation of pressure zones possible
- Vacuum generation possible in the manifold sub-base
- Sensor connections/input modules directly on the valve
- Modular, individually extendable tie rods
- Single valves or combinations of four valves
- Freely selectable tubing size at each port

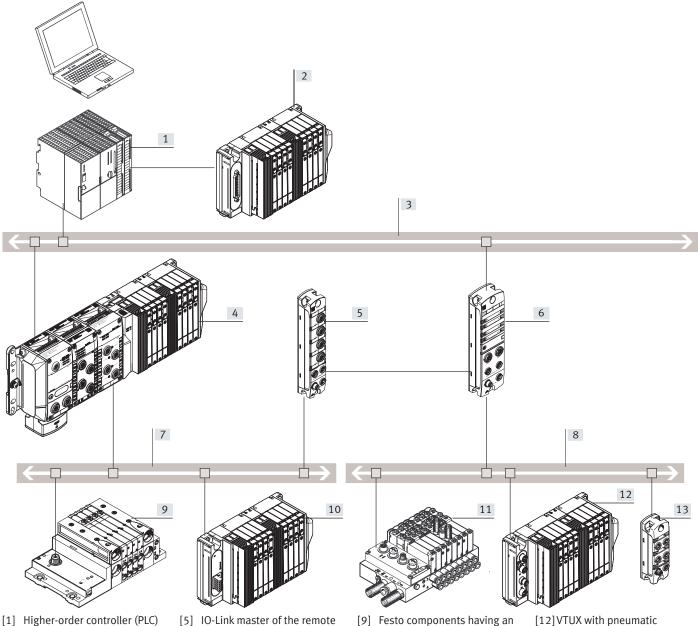
Control variants of the valve terminal VTUX

The VTUX can be integrated in control systems in a variety of ways. There are a range of designs available for actuation via electrical multi-pin connection. Likewise, valve terminals can be connected via IO-Link® using round plugs with a high degree of protection or using terminal connections.

The valve terminals are particularly versatile and highperforming thanks to the perfect integration into the Festo AP Automation Platform. In combination with the remote I/O system CPX AP-A, it is possible to complete valve terminals by configuring and combining them with a range of peripheral modules.

Integration into the remote I/O system CPX-AP-I offers the option of decentralised solutions in particular. It is thus possible to have particularly space-saving solutions close to the pneumatic drives, enabling rapid movements and short cycle times.

A unique feature is the ability to combine the remote I/O system CPX-AP-A and the remote I/O system CPX-AP-I for a combination of centralised and decentralised machine functions. This modularity makes the VTUX perfectly adaptable to any application.



- [1] Higher-order controller (PLC)
- [2] VTUX with multi-pin plug connection
- [3] Fieldbus
- [4] VTUX with remote I/O system CPX-AP-A with fieldbus interface
- [5] IO-Link master of the remote I/O system CPX-AP-I
- [6] Bus node of the remote I/O system CPX-AP-I
- [7] IO-Link®
- [8] AP bus

- I/O interface (e.g. valve terminal MPA-L)
- [10] VTUX with IO-Link® node
- [11] Festo components having an AP bus interface (e.g. valve terminal VTUG)
- interface for remote I/O system CPX-AP-I
- [13] Input/output module with AP bus

Valve terminal selection

Valve terminal configurator

The appropriate valve terminal VTUX can be selected quickly and easily using the online catalogue. This includes a convenient valve terminal configurator, making it much easier to order the right product.

The valve terminals are assembled according to your order specification and are individually checked. This reduces assembly and installation time to a minimum.

Order a valve terminal VTUX using the order code.

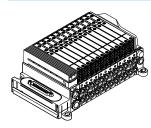
Ordering system for VTUX

- → Internet: vtux
 Ordering system for CPX-AP-I
- → Internet: cpx-ap-i→ Internet: cpx-ap-i

Online at: → www.festo.com 2D/3D CAD data

You can request the CAD data for a valve terminal you have configured. To do so, start the product search as described above. Click on the CAD/EPLAN symbol. On the next page, you can generate a 3D preview or request a data format of your choice via e-mail.

Multi-pin plug connection



The signals are transmitted from the controller to the valve terminal via a pre-assembled or selfassembled multi-core cable to the multi-pin plug connection. This substantially reduces installation time.

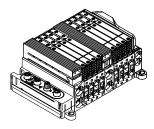
Internal signal flow via parallel communication.

The valve terminal can be equipped with max. 32 solenoid coils. This corresponds to 2 to 32 valves.

Versions:

- Sub-D connection
 - Pre-assembled multi-pin cable
 - Multi-pin cable for selfassembly
 - Connection on top or at the side
- Ribbon cable connection
- Terminal strip connection

Fieldbus interface from the remote I/O system CPX-AP-I



CPX-AP-I is a flexible, decentralised, compact and lightweight remote I/O system with a high protection rating IP65/IP67.

A remote I/O system CPX-AP-I comprises a bus interface and at least one other module. System communication between the modules takes place via connecting cables.

The process data is exchanged cyclically. The following module types are available:

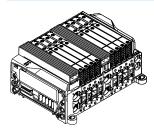
- Bus interface
- Input modules
- Input/output modules
- Interface for valve terminal

Internal signal flow via serial or parallel communication.

Fieldbus protocols that can be combined with VTUX:

- PROFINET
- EtherNet/IP
- EtherCAT®

Fieldbus interface from the remote I/O system CPX-AP-A



CPX-AP-A is a flexible, central, compact and lightweight remote I/O system with a high degree of protection to IP65/IP67.

A bus node directly mounted on

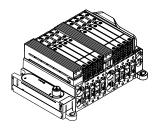
A bus node directly mounted on the valve terminal VTUX manages communication with a higherorder PLC. A compact unit, combining pneumatics, sensors and a bus interface, can be designed using directly linked input and output modules.

Internal signal flow via serial or parallel communication.

Fieldbus protocols:

- PROFINET
- EtherNet/IP
- EtherCAT®

IO-Link®



IO-Link® consists of a central master and the IO-Link® devices connected via special connecting cables. This permits a decentralised layout of the devices.

The connection type corresponds to a star topology.

As well as transmitting the communication data, the IO-Link® interfaces also handle the power supply for the connected devices.

The maximum length of a string is 20 m.

Internal signal flow via parallel communication.

Modular pneumatic components

The modular design of the valve terminal VTUX enables outstanding flexibility right from the planning stage and offers maximum ease of service in operation.

The system consists of manifold sub-bases and valves.

The manifold sub-bases form the support system for the valves. They contain the electrical connections, the ducts for supplying compressed air to and exhausting the valve terminal as well as the working ports for the pneumatic drives for each valve.

The manifold sub-bases are connected by a tie rod system. This comprises a tie rods and a screw set. The combination of tie rods and screw set is selected according to the chosen number of individual sub-bases.

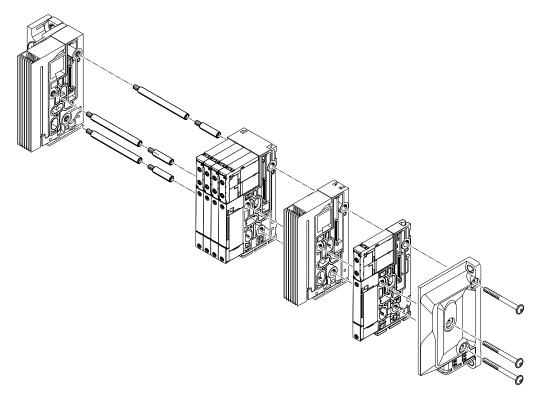
A valve terminal can be easily extended by adding individual manifold sub-bases or supply modules. This is done simply by inserting suitable tie rod extenders.

This ensures that the valve terminal can be rapidly and reliably extended.

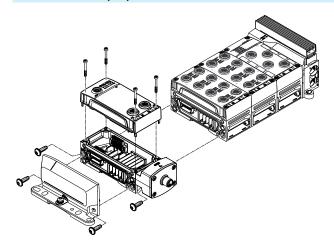


- Note

The tie rod system for the valve terminal VTUX consists of at least two manifold sub-bases or one manifold sub-base and one supply module.



Modular electrical peripherals



The mechanical connection between the CPX-AP-A modules is created using angled fittings. The remote I/O system CPX-AP-A can therefore be flexibly expanded at any time.

The advantages of polymer (low weight) and metal (sturdy, high EMC compatibility) are perfectly combined by using high-quality polymer materials.

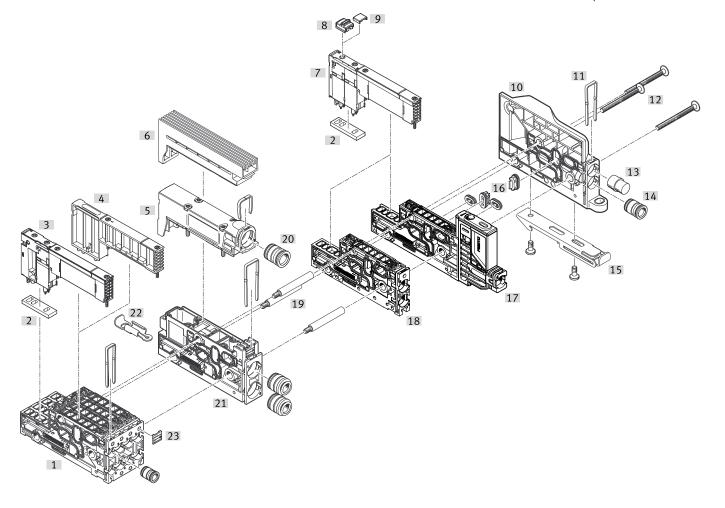
The I/O modules, connection blocks and bus nodes of the remote I/O system CPX-AP-A are mounted on the interlinking blocks using 4 screws and can be swapped or modified in almost any way.

Pneumatics of the valve terminal with parallel communication

The manifold sub-bases are available individually with one valve position or with a grid of four valve positions.

The manifold sub-bases include the electrical links for:

- Single solenoid valves or
- Double solenoid valves
- Double solenoid valve positions occupy two addresses and can be equipped with any valve or a cover plate.
- Single solenoid valve positions occupy a single address and can only be equipped with single solenoid valves or a cover plate.



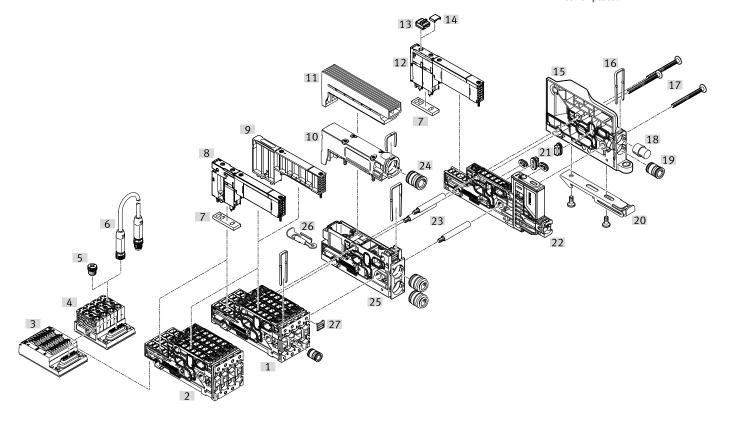
	Pneumatic components of the valve terminal						
Designation		Brief description	→ Page/Internet				
[1]	Manifold sub-base	Manifold sub-base with four valve positions	72				
[2]	Seal	-	_				
[3]	Solenoid valve	Valve size 10 mm	72				
[4]	Vacant position	Cover plate for one valve position	72				
[5]	Plate	Exhaust plate for ducted exhaust air	73				
[6]	Plate	Exhaust plate as flat plate silencer	73				
[7]	Solenoid valve	Valve size 10 mm	72				
[8]	Cover cap for manual override	Conversion from non-detenting to detenting	76				
[9]	Cover cap for manual override	Conversion from non-detenting to concealed	76				
[10]	End plate, right	- End plate with ports 12/14, 82/84	74				
[11]	Clamping clip for cartridge	-	-				
[12]	Screw	Tie rod system, connects the manifold sub-bases	73				
[13]	Silencer	With cartridge connection	76				
[14]	Cartridge	For air supply and exhaust ports	76				
[15]	Mounting	Clamp mounting for DIN rail mounting	73				
[16]	Separator	Separator for pressure zone separation in duct 1 and duct 3, 5	73				
[17]	Manifold sub-base	Manifold sub-base with one valve position for vacuum	72				
[18]	Manifold sub-base	Manifold sub-base with one valve position	72				
[19]	Tie rods	Threaded rod, clamps the manifold sub-bases between the end plates	73				
[20]	Cartridge	For air supply and exhaust ports	76				
[21]	Supply module	For compressed air supply/exhaust air	73				
[22]	Mounting	Mounting bracket for wall mounting	73				
[23]	Inscription labels	For identifying the pressure zone separation	76				

Pneumatics of the valve terminal with serial communication

The manifold sub-bases are available in a grid of four.
Additional functions such as input modules are available.

The manifold sub-bases include the electrical links for:

- Single solenoid valves or
- Double solenoid valves
- Double solenoid valve positions occupy two addresses and can be equipped with any valve or a cover plate.
- Single solenoid valve positions occupy a single address and can only be equipped with single solenoid valves or a cover plate.



Pneu	matic components of the valve termin	al		
Designation		Brief description	→ Page/Internet	
[1]	Manifold sub-base	Manifold sub-base with four valve positions	72	
[2]	Manifold sub-base	Manifold sub-base with four valve positions with connection for input module	72	
[3]	Input module	Electrical connection – Spring-loaded terminal	74	
[4]	Input module	Electrical connection, socket M8	74	
[5]	Cover cap	For electrical connections M8x1	76	
[6]	Connecting cable	-	75	
[7]	Seal	-	_	
[8]	Solenoid valve	Valve size 10 mm	72	
[9]	Vacant position	Cover plate for one valve position	72	
[10]	Plate	Exhaust plate for ducted exhaust air	73	
[11]	Plate	Exhaust plate as flat plate silencer	73	
[12]	Solenoid valve	Valve size 10 mm	72	
[13]	Cover cap for manual override	Conversion from non-detenting to detenting	76	
[14]	Cover cap for manual override	Conversion from non-detenting to concealed	76	
[15]	End plate, right	- End plate with ports 12/14, 82/84	74	
[16]	Clamping clip for cartridge	-	_	
[17]	Screw	Tie rod system, connects the manifold sub-bases	73	
[18]	Silencer	With cartridge connection	76	
[19]	Cartridge	For air supply and exhaust ports	76	
[20]	Mounting	Clamp mounting for DIN rail mounting	73	
[21]	Separator	Separator for pressure zone separation in duct 1 and duct 3, 5	73	
[22]	Manifold sub-base	Manifold sub-base with one valve position for vacuum	72	
[23]	Tie rods	Threaded rod, clamps the manifold sub-bases between the end plates	73	
[24]	Cartridge	For air supply and exhaust ports	76	
[25]	Supply module	For compressed air supply/exhaust air	73	
[26]	Mounting	Mounting bracket for wall mounting	73	
[27]	Inscription labels	For identifying the pressure zone separation	76	

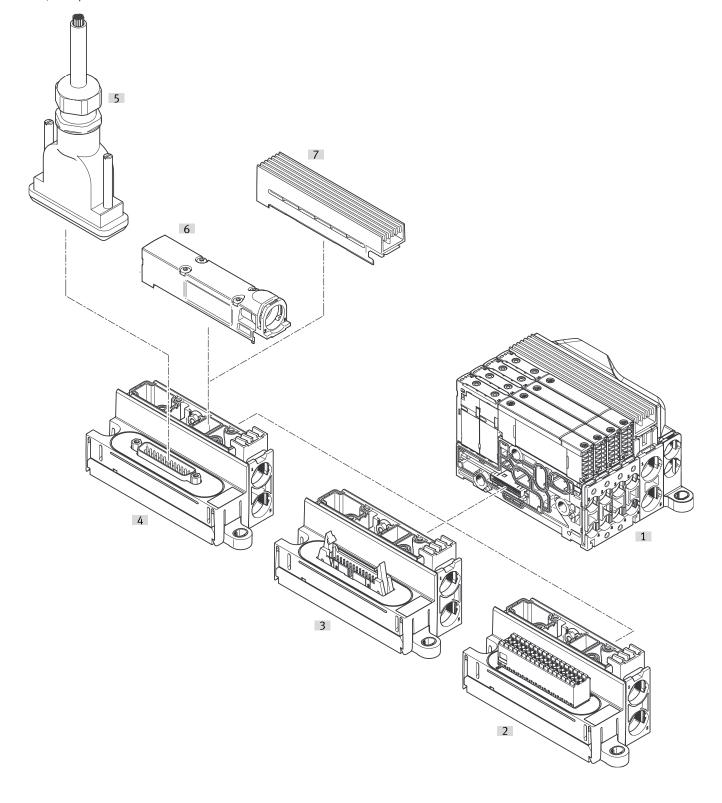
Valve terminal with multi-pin plug connection:

Order code:

• VTUX-A-P-M... for pneumatics with parallel communication

Valve terminals VTUX with multipin plug connection can be expanded by up to 32 solenoid coils/valve positions. The multi-pin plug connection can be ordered as a Sub-D connection (25- or 44-pin) or as a terminal strip (34-pin) or as a ribbon cable connection (26-pin). The Sub-D multi-pin plug connection (25- and 44-pin) is available with degree of protection IP40 and IP65; the terminal strip and ribbon cable connection with IP40.

Pre-assembled cables of different lengths with degree of protection IP40 or IP65/67 are available as accessories for the Sub-D multipin plug connection (25- and 44-pin).



Designation		Brief description	→ Page/Internet
[1]	Valve terminal VTUX	Pneumatic part	8
[2]	Multi-pin plug connection	Terminal strip	74
[3]	Multi-pin plug connection	For ribbon cable, 40-pin, IP40	74
[4]	Multi-pin plug connection	Sub-D, 25-pin	74
	Multi-pin plug connection	Sub-D, 25-pin,	74
[5]	Connecting cable	Socket 25-pin, Sub-D, open cable end 25-pin	75
[6]	Plate	Exhaust plate for ducted exhaust air	73
[7]	Plate	Exhaust plate as flat plate silencer	73

Valve terminal with fieldbus interface, remote I/O system CPX-AP-A

Order code:

- VTUX-A-P-APA-... for pneumatics with parallel communication
- VTUX-A-S-APA-... for pneumatics with serial communication
- CPX-AP-A-... for the electrical peripherals

Valve terminals with CPX-AP-A connection can be expanded with up to 32 solenoid coils/valve positions with parallel communication and with up to 64 valve positions with serial communication.

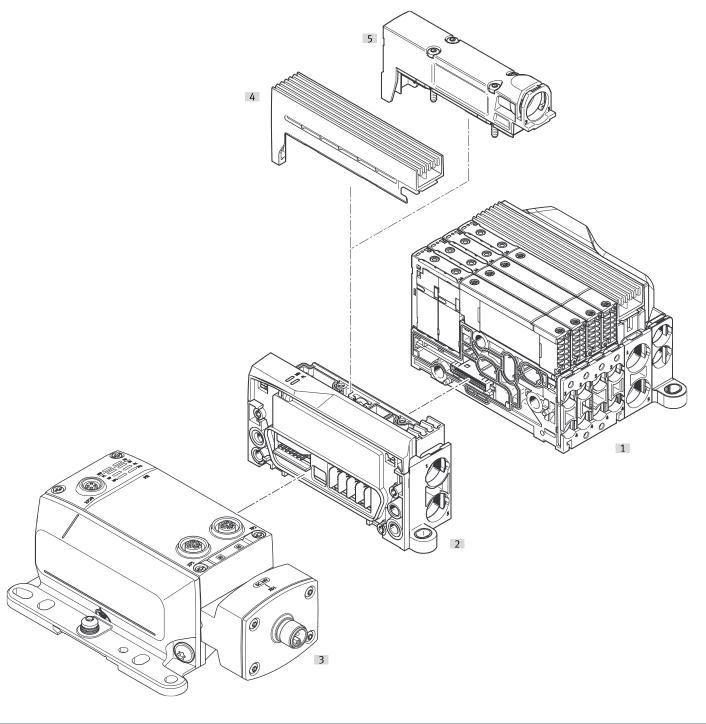
In combination with single-solenoid valves, up to 32 valve positions (parallel communication) or 64 valve positions (serial communication) can be fitted.

When used exclusively with valves having two solenoid coils (double-solenoid valves, 5/3-way valves, 2x 3/2-way valves), the maximum number of valve positions reduces to 16 with parallel communication.

Each valve position can be equipped with any valve or a cover plate. The rules for CPX-AP-A apply to the equipment that can be used with the electrical peripherals CPX-AP-A.

In general:

- Digital inputs/outputs
- Parameterisation of inputs and outputs
- Integrated, convenient diagnostics
- Preventive maintenance concepts



Desig	nation	Brief description	→ Page/Internet
[1]	Valve terminal VTUX	Pneumatic part	8
[2]	Left end plate	Pneumatic interface for remote I/O system CPX-AP-A	74
[3]	Remote I/O system CPX-AP-A	Electrical part of the remote I/O system CPX-AP-A	срх-ар-а
[4]	Plate	Exhaust plate as flat plate silencer	73
[5]	Plate	Exhaust plate for ducted exhaust air 7	

Valve terminal with interface to the remote I/O system CPX-AP-I

Order code:

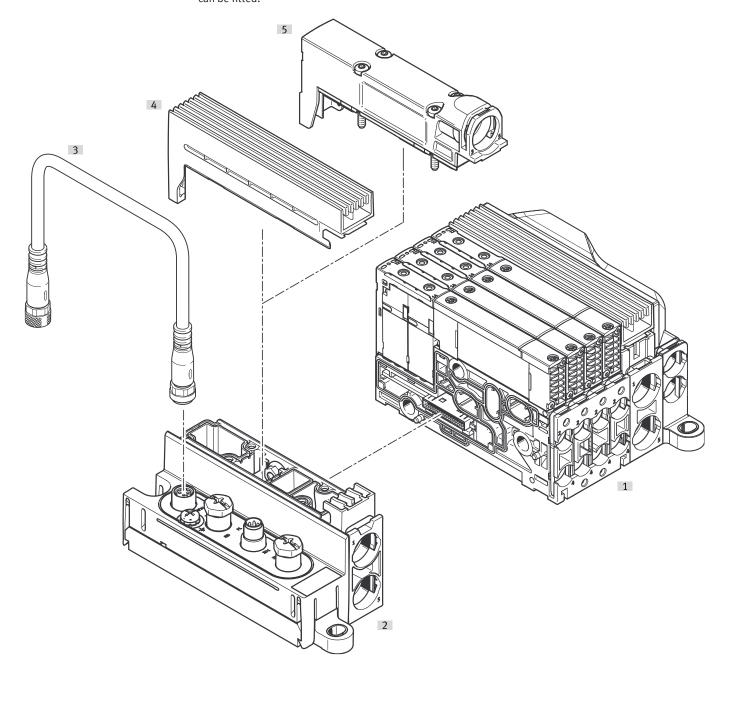
- VTUX-A-P-API... Pneumatics with parallel communication
- VTUX-A-S-API-... for pneumatics with serial communication
- CPX-AP-I components are to be ordered individually

Valve terminals with CPX-AP-I connection can be expanded with up to 32 solenoid coils/valve positions with parallel communication and with up to 64 valve positions with serial communication.

In combination with single-solenoid valves, up to 32 valve positions (parallel communication) or 64 valve positions (serial communication) can be fitted.

When used exclusively with valves having two solenoid coils (double-solenoid valves, 5/3-way valves, 2x 3/2-way valves), the maximum number of valve positions reduces to 16 with parallel communication.

Each valve position can be equipped with any valve or a cover plate.



Designation		Brief description	→ Page/Internet
[1]	Valve terminal VTUX	Pneumatic part 8	
[2]	Left end plate	End plate with interface to the remote I/O system CPX-AP-I and with interface for power supply	74
[3]	Connecting cable	Between two CPX-AP-I modules	cpx-ap-i
[4]	Plate	Exhaust plate as flat plate silencer	73
[5]	Plate	Exhaust plate for ducted exhaust air	73

Valve terminal with IO-Link® interface (and bus node)

Order code:

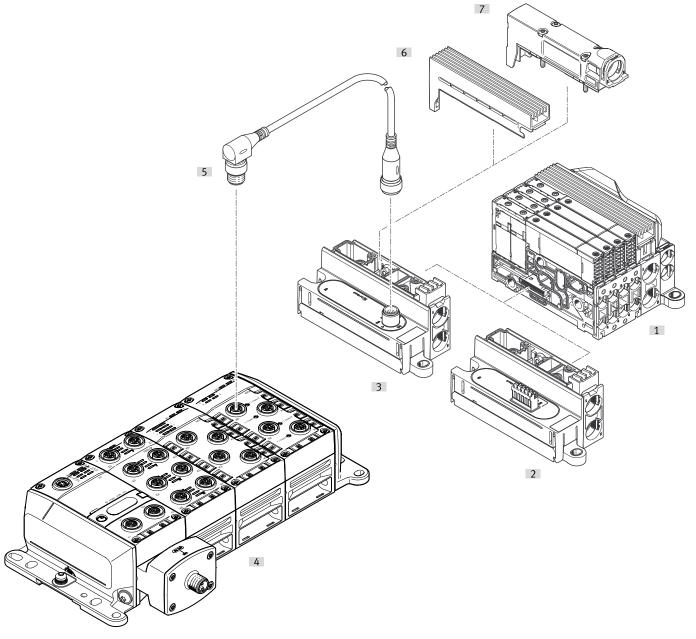
- VTUX-A-P-IO... for pneumatics with parallel communication
- CPX-AP-A-... for the bus node

Valve terminals with IO-Link[®] interface can be expanded by up to 32 solenoid coils/valve positions.

Up to 32 valve positions can be equipped with single solenoid valves.

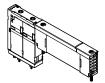
The maximum number of valve positions is reduced to 16 if only valves with two solenoid coils are used (double solenoid valves, 5/3-way valves, 2x 3/2-way valves).

Each valve position can be equipped with any valve or a cover plate.



Desig	nation	Brief description	→ Page/Internet
[1]	Valve terminal VTUX	Pneumatic part	8
[2]	Left end plate	End plate with IO-Link® interface, push-in electrical connection	74
[3]	Left end plate	End plate with IO-Link® interface, M12 electrical connection	74
[4]	Remote I/O system CPX-AP-A	With bus nodes, input/output modules and IO-Link master for connecting devices with IO-Link	срх-ар-а
		interface	
[5]	Connecting cable	Between two IO-Link® interfaces	nebu
[6]	Plate	Exhaust plate as flat plate silencer	73
[7]	Plate	Exhaust plate for ducted exhaust air	73

Sub-base valve



VTUX offers a comprehensive range of valve functions. The spool valves VTUX of width 10 mm offer a particularly high flow rate. They are used on manifold subbases of width 10 mm and 12 mm with a tubing connection up to 8 mm.

Valves of size 10 mm are a particularly effective option for compact valve terminals that also enable applications with outstanding flow rate performance when using 8 mm tubing connections.

This eliminates having to select and decide between different valve sizes and reduces the complexity for planned applications. Mounting valves on manifold subbases offers a range of advantages. The valves are secured using two screws and can be easily replaced.

The 5/2-way and 3/2-way valves are designed to have a negative overlap. This thus enables the working ports to be exhausted in the de-energised state.
Pilot air (duct 12/14) is supplied via the manifold sub-bases, allowing it to be interrupted and exhausted.

All valves have pneumatic pilot control for optimising performance.

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

Design

Replacing valves

The valves are attached to the sub-base using two screws.
The tubing remains on the manifold sub-base, which prevents mix-ups during servicing.

which means that they can be easily replaced. The sturdy mechanical structure of the subbase ensures efficient, durable sealing.

Extension

Cover plates for reserve positions can be replaced by valves at a later date.

The dimensions, mounting points as well as the existing pneumatic installation out do not change.



Note

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

5/2-way valve Circuit symbol	Code Assigned addresses		Description	
14 4 2 12/14 82/84 1 3	Position function 1-32: A	1	 Single solenoid Mechanical spring return Reversible Operating pressure -0.09 +0.7 MPa 	
12/14 82/84 1 3	Position function 1-32: M	1	Single solenoid Pneumatic spring return Operating pressure +0.2 +0.7 MPa	
14 4 2 12 12/14 82/84 1 3	Position function 1-32: J	2	Double solenoid Limited reversibility Operating pressure -0.09 +0.7 MPa	

2x 3/2-way valve Circuit symbol	Code	Assigned addresses	Description
14 12 14 12 12/14 15 3	Position function 1-32: NS	2	 Single solenoid Normally open Mechanical spring return Reversible Operating pressure 0 0.7 MPa
14 12 12/14 82/84 1 5 3	Position function 1-32: K	2	Single solenoid Normally closed Mechanical spring return Reversible Operating pressure 0 0.7 MPa
12/14 1 5 3 82/84	Position function 1-32: KC	2	Single solenoid Normally closed Pneumatic spring return Operating pressure 0.15 0.7 MPa
12/14 1 5 82/84 3	Position function 1-32: KV	2	Single solenoid Normally closed Pneumatic spring return For manifold sub-base for vacuum

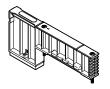
5/3-way valve Circuit symbol	Code	Assigned addresses	Description
14 M 4 2 M 12 12/14 5 1 3 82/84	Position function 1-32: G	2	Mid-position closed Mechanical spring return Reversible Operating pressure -0.09 +0.7 MPa



The valve functions of an exhausted and pressurised 5/3-way valve can be realised using the 3/2-way valves "normally closed" and "normally open", respectively, with mechanical spring return.

The negative overlap makes it possible to exhaust the working ports in the de-energised state.

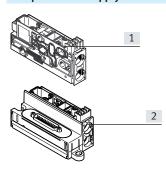
Cover plate



Cover plate (code L) without valve function, for reserving valve positions on a valve terminal.

Valves and cover plates are attached to the manifold sub-base using two screws.

Compressed air supply and exhaust



- [1] Supply module
- [2] Left-hand end plate

The valve terminal VTUX can be supplied with compressed air at one or more points via the left end plate and/or via supply modules. The generously sized pneumatic system ensure that all components will offer good performance, even with large-scale extensions.

Exhausting (ducts 3 and 5) takes place either via silencers or ports for ducted exhaust air, via the supply modules or the left end plate.

There are two variants for exhausting:

- Exhaust air 3/5 via flat plate silencer
- Exhaust air 3/5 ducted

Ducts 3 and 5 are separate in the terminal and are only joined together in the supply module/ left end plate. The pilot exhaust air (duct 82/84) is completely separate from ducts 3 and 5.

Pilot air supply



The valve terminal VTUX is supplied with pilot air only via the right end plate.

The type of pilot air supply can be selected using a separator in duct 1 of the end plate:

- Internal (from duct 1) or
- External (from duct 12/14)

The actual control pressure required depends on the valves used on the terminal.

Internal pilot air supply can be selected if the supply pressure of the terminal is correspondingly high.

In this case, the pilot air supply is branched by an internal connection from duct 1 in the right end plate. The operating pressure in the right pressure zone must be at least equal to the highest control pressure required for the entire valve terminal.

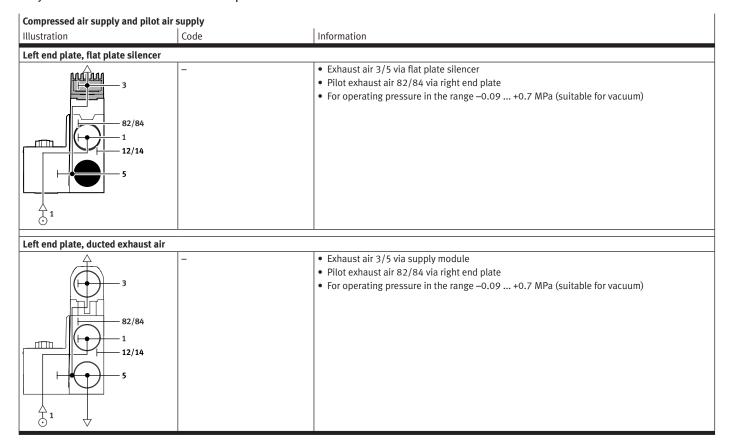
Port 12/14 on the right end plate is sealed using a blanking plug.



Note

If a gradual pressure build-up in the system using a soft-start valve is chosen, an external pilot air supply should be connected so that the pilot pressure applied during switch-on is already very high.

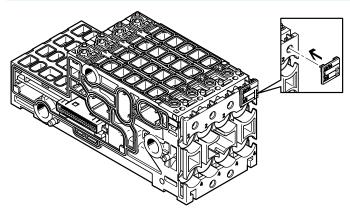
Compressed air supply and pilot air supply						
Illustration	Code	Information				
Right end plate, with supply ports						
3 1 82/84 12/14 5	Pilot air supply, via right end plate: –	Internal pilot air supply Pilot air is branched internally from port 1 in the right end plate Port 12/14 in the right end plate is sealed using a blanking plug Pilot exhaust air 82/84 via right end plate For operating pressure in the range 0.25 0.7 MPa				
3 1 1 82/84 12/14 5	Pilot air supply, via right end plate: Z	External pilot air supply Pilot air supply (0.25 0.7 MPa) is connected at port 12/14 on the right end plate Port 1 in the right end plate is sealed using a separator Pilot exhaust air 82/84 via right end plate For operating pressure in the range –0.09 +0.7 MPa (suitable for vacuum)				
Supply module, flat plate silencer						
3 82/84 1 12/14 5 5 5	Connection position type 1-64: U Position function 1-64: US	 Exhaust air 3/5 via flat plate silencer Pilot exhaust air 82/84 via right end plate For operating pressure in the range –0.09 +0.7 MPa (suitable for vacuum) 				
Supply module, ducted exhaust air						
3 3 82/84 82/84 1 12/14 5 5	Connection position type 1-64: U Position function 1-64: UD	 Exhaust air 3/5 via supply module Pilot exhaust air 82/84 via right end plate For operating pressure in the range –0.09 +0.7 MPa (suitable for vacuum) 				



Supply module						
	Code	Туре	Designation	Information		
	Position function 1-64: UD	VABF-XA-12-M2	Exhaust plate for ducted exhaust air	Additional power supply modules can be used for larger terminals or to create pressure zones. Supply modules can be configured at any point upstream or downstream from the manifold subbases or also next to one another. Supply modules contain the following ports: • Compressed air supply (duct 1) • Exhaust air (duct 3/5) Depending on your order, the exhaust ducts are either ducted or exhausted via the flat plate silencer. The flat plate silencer is fixed on the manifold subbase with a latching lug and can be removed without the need for tools.		
	Position function 1-64: US	VABF-XA-12-M1	Flat plate silencer			
	Connection position type 1-64: U	VABX-A-P-BU	Supply module without cartridge			

Supply and exhaust ports							
	Code	Connect	tion		Push-in fitting/cartridge		
Right end plate with supply ports 12/14, 82/84							
	1	12/14	Pilot air supply	Cartridge	Cartridge, straight		
		82/84	Pilot exhaust air	Cartridge			
Supply module							
	Connection position type 1-64: U	1	Working air/vacuum supply	Cartridge	Cartridge, straight		
		3/5 Exhaust air	Flat plate silencer	-			
				Cartridge	Cartridge, straight		

Creating pressure zones and separating exhaust air



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

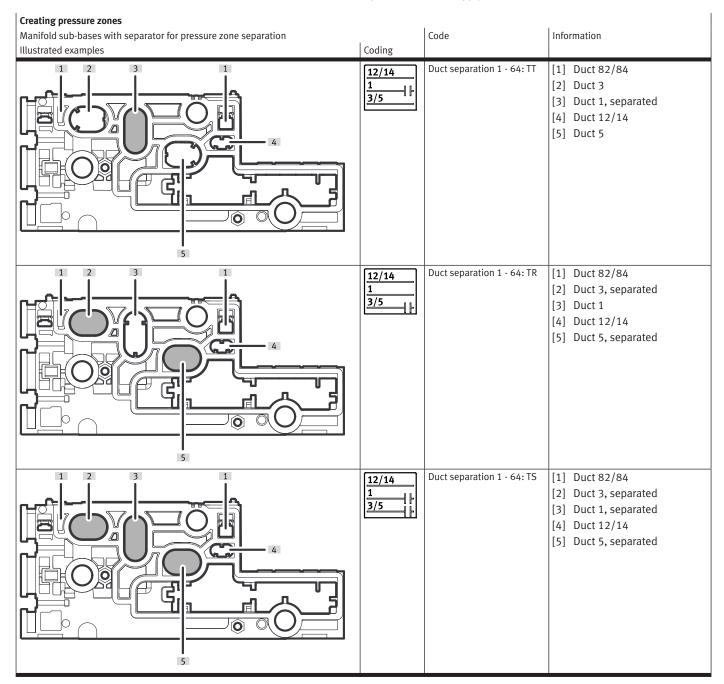
A pressure zone is created by separating the internal supply duct between any two manifold sub-bases. Every pressure zone must have its own compressed air supply.

Compressed air can be supplied and exhausted via the left end plate and/or the supply modules.

The position of the supply modules and the pressure zone separation can be freely chosen with the valve terminal VTUX.

The separators for pressure zone separation are integrated into the terminal at the factory as specified in your order.

Their position is marked using corresponding inscription labels. Duct separation takes place between two manifold sub-bases.



Examples: compressed air supply and pilot air supply

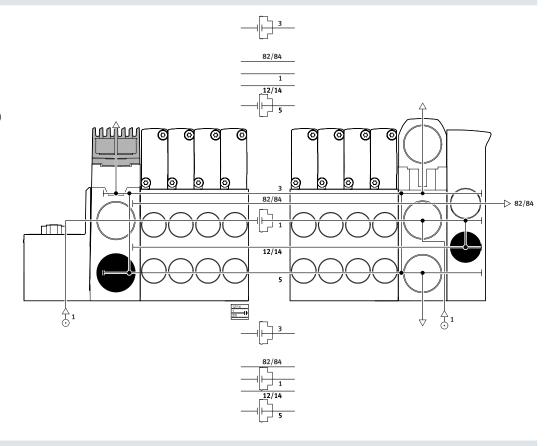
Internal pilot air supply

The diagram on the right shows an example of the configuration and connection of the air supply with internal pilot air supply.

The exhaust air (duct 3/5) is exhausted via supply modules.

The pilot exhaust air (duct 82/84) is discharged via the right end plate.

Special separators are used to create pressure zones.

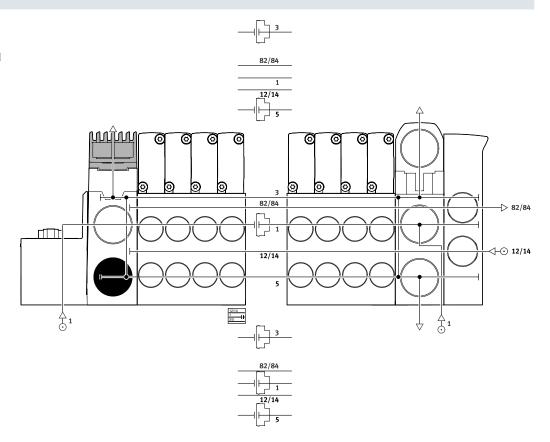


External pilot air supply

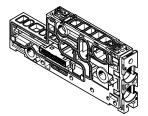
The diagram on the right shows an example of the configuration and connection of the compressed air supply with external pilot air supply. Port 12/14 on the right end plate is equipped with a fitting for this.

The exhaust air (duct 3/5) is exhausted via supply modules. The pilot exhaust air (duct 82/84) is discharged via the right end plate.

Special separators are used to create pressure zones.



Manifold sub-base



VTUX is based on a modular system which consists of manifold sub-bases and valves. The manifold sub-bases are joined together using tie rods and thus form the support system for the valves.

They contain the ducts for supplying compressed air to and exhausting from the valve terminal as well as the working ports for the pneumatic drives for each valve.

The tie rod used to join the manifold sub-bases together consists of a threaded rod and screw.

The manifold sub-bases are available in variants for one or for four valves.

The threaded rod/screw combination is selected according to the number and width of the individual manifold sub-bases.

To add further manifold subbases, simply loosen the tie rod and adapt using extenders. There are no restrictions on how extensions. A tie rod could be constructed almost entirely using

The electrical connections for the valve terminal are also integrated into the manifold sub-bases.

Manifold sub-base variants	La	1_	I
	Code	Туре	Information
	_	VABX-A-P-BV-AH-F VABX-A-P-BV-AH-A VABX-A-P-BV-BH-G VABX-A-P-BV-BH-B	One valve position Without cartridge Width 10.55 mm One valve position Without cartridge Width 12.55 mm
	-	VABX-A-P-BV-AH-RVFFFF VABX-A-P-BV-AH-RVAAAA VABX-A-S-BV-AH-RVAAAA VABX-A-P-BV-BH-RVGGGG VABX-A-P-BV-BH-RVBBBB VABX-A-S-BV-BH-RVBBBB	Four valve positions Without cartridge Width 42.05 mm Four valve positions Without cartridge Width 50.05 mm
	-	VABX-A-S-BV-AH-RVOXJAAAA VABX-A-S-BV-BH-RVOXJBBBB	Four valve positions Space for input module Without cartridge Width 42.05 mm Four valve positions Space for input module Without cartridge Width 50.05 mm
	VB	VABX-A-P-VE-VB010H VABX-A-S-VE-VB010H	One valve position for 2x 3/2-way valve, normally closed (can only be ordered via configurator) With integrated vacuum generator Without cartridge Width 12.55 mm

Key features - Mounting

Valve terminal mounting

Sturdy terminal mounting via:

- Four through-holes for wall mounting
- Additional mounting brackets

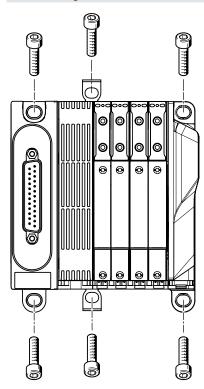
· DIN rail mounting



Note

For valve terminals with manifold sub-bases for vacuum, the mounting position must be selected so that the integrated silencer is protected against the ingress of water and any water that has penetrated can drain away again.

Wall mounting



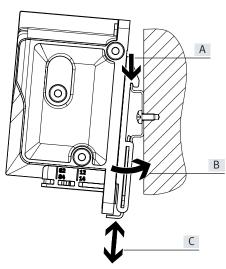
The valve terminal VTUX is screwed onto the mounting surface using four M4 or M6 screws. The mounting holes are on the multi-pin plug connection and on the right end plate.

Optional mounting brackets are also available.

· 🖟 - Note

For wall mounting, in addition to the mounting holes in the end plates, mounting brackets for wall mounting should be fitted every 20 cm.

DIN rail mounting



The valve terminal VTUX is attached to the DIN rail (see arrow A).

The valve terminal VTUX is then swivelled onto the DIN rail (see arrow B).

As a third step, the valve terminal VTUX is fitted on the DIN rail by moving the slide on the DIN rail mounting (see arrow C).

The clamp fastening for DIN rail mounting enables the valve terminal to be mounted on DIN rails in accordance with EN 60715.



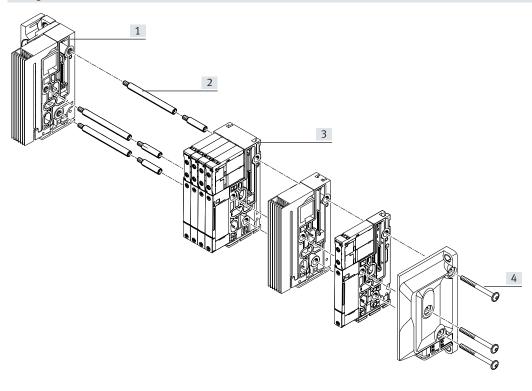
Note

The clamping kit locks the valve terminal in a horizontal mounting position.

Key features – Mounting

Tie rods

Configuration



- [1] Left end plate
- [2] Tie rod sections
- [3] Manifold sub-bases
- [4] Tie rod screws

Operating mode

The tie rod on the VTUX is made up of two parts:

- · Threaded rods
- Screw

This enables valve terminals of any length to be created. It takes just four steps to assemble the tie rod and the valve terminal:

- Screw the threaded rods into the left end plate
- Push the sub-bases and supply modules onto the threaded rods
- Push on the right end plate and secure using the screws

The tie rod enables the valve terminal to be extended at a later date. This is done by loosening the tie rod screws and disassembling the relevant components. The additional subbase or the additional supply module is inserted at the required location. The previously disassembled components are then re-assembled.

To compensate for the change in length, the tie rod must be extended by the increase in length. To do this, threaded rods of a suitable length are screwed in place.

To determine which components are required, the online spare parts catalogue includes information on how to use the spare parts and a conversion guide.

Tie rod - Components and design

Tie rod (threaded rod)



The threaded rod is used to create a cost-optimised fixed-grid tie rod. The combination of a threaded rod and screw offers the optimum compensation of tolerances (by compressing the seals between the manifold sub-bases).

The valve terminal can be extended almost infinitely at any time using additional threaded rod sections.

The threaded rod sections are inserted between the existing threaded rod and are available in different lengths, in each case matched to the manifold subbases and supply modules.

Screw



The entire valve terminal is clamped via the tie rod using the screw.

Tolerances that occur, for example when the seals are compressed between the manifold sub-bases during assembly, are compensated by the interaction of the screw and the threaded rod.

Ensure that no more than 65 seals, i.e. 64 manifold sub-bases and supply modules, are combined in one valve terminal.

Key features – Mounting

Ordering data – Tie rods															
Reference length			Part no.			Part no.			Part no.			Part no.			Part no.
[mm]															
L = sum of the widths of the	Tie	e rods				:						·	S	crew	·
manifold sub-bases and supply															
modules															
21.00 23.00	=		-	+		-	+		-	+		-	+	1	8191748
25.00 29.60	1	1	8191756	1		-			-			-	Ī	1	8191747
31.50 38.80	1	1	8191757			-			-			-		1	8191747
40.00 63.30		1	8191758			-			-			-		1	8191748
63.40 86.20		1	8191761			-			-			-		1	8191748
86.30 109.10		1	8191762			-			-			-		1	8191748
109.20 131.80		1	8191763			-			-			-		1	8191748
131.90 154.30		1	8191764			-			-			_		1	8191748
154.40 173.70		1	8191765			-			-			-		1	8191748
173.80 193.20		1	8191766			-			-			-		1	8191748
193.30 212.70		1	8191767			_			_			-		1	8191748
212.80 231.20		1	8191767		1	8191756			-			-		1	8191748
231.30 249.90		1	8191767		1	8191758			-			-		1	8191748
250.00 252.60		1	8191766		1	8191761			-			-		1	8191748
252.70 255.60		1	8191765		1	8191762			-			-		1	8191748
255.70 272.40		1	8191767		1	8191761			-			-		1	8191748
272.50 275.10	1	1	8191766		1	8191762			-			-		1	8191748
275.20 278.10		1	8191765		1	8191763			-			-		1	8191748
278.20 294.60		1	8191767		1	8191762			-			-		1	8191748
294.70 297.60		1	8191766		1	8191763			-			-		1	8191748
297.70 300.60		1	8191765		1	8191764			-			-		1	8191748
300.70 317.10		1	8191767		1	8191763			-			-		1	8191748
317.20 320.10		1	8191766		1	8191764			-			-		1	8191748
320.20 331.70		1	8191767		1	8191762		1	8191758			-		1	8191748
331.80 339.50		1	8191767		1	8191764			-			-		1	8191748
339.60 354.20		1	8191767		1	8191763		1	8191758			-		1	8191748
354.30 359.00		1	8191767		1	8191765			-			-		1	8191748
359.10 368.00		1	8191767		1	8191764		1	8191757			-		1	8191748
368.10 378.50		1	8191767		1	8191766			-			-		1	8191748
378.60 387.70		1	8191767		1	8191765		1	8191757			-		1	8191748
387.80 398.20		2	8191767	4		-			-			-		1	8191748
398.30 407.20		1	8191767		1	8191766		1	8191757			-		1	8191748
407.30 416.80		2	8191767			-		1	8191756			-		1	8191748
416.90 426.70		2	8191767		1	8191757			-			-		1	8191748
426.80 435.10	4	2	8191767		1	8191758			-			-		1	8191748
435.20 438.10		1	8191767		1	8191766		1	8191761			-		1	8191748
438.20 440.90		1	8191767		1	8191765		1	8191762			-		1	8191748
441.00 443.90		1	8191767		1	8191764		1	8191763			-		1	8191748
444.00 446.90	_	2	8191766		2	8191764			-			-		1	8191748
447.00 457.60		2	8191767		1	8191761			-			-		1	8191748
457.70 460.60		1	8191767		1	8191766		1	8191762			-		1	8191748
460.70 463.40		1	8191767		1	8191765		1	8191763			-		1	8191748
463.50 466.40	4	1	8191767		2	8191764			-			-		1	8191748
466.50 472.30		2	8191767		2	8191758			-			-		1	8191748
472.40 480.10		2	8191767		1	8191762			-			-		1	8191748
480.20 482.90		1	8191767		1	8191766		1	8191763			-		1	8191748
483.00 485.80		1	8191767		1	8191765		1	8191764			_		1	8191748

Key features – Mounting

Ordering data – Tie rods													
Reference length		Part no.		Part no.			Part no.			Part no.			Part no.
[mm]													
L = sum of the widths of the	Tie rods			•			<u>'</u>				Sc	rew	
manifold sub-bases and supply	iic ious												
modules													
485.90 494.50	= 2	8191767	+ 1	8191761	+	1	8191758	+		-	+	1	8191748
494.60 502.60	2	8191767	1	8191763	1		_	1		_	1	1	8191748
502.70 505.30	1	8191767	1	8191766		1	8191764	1		_	1	1	8191748
505.40 508.60	2	8191767	1	8191762		1	8191757	1		-	1	1	8191748
508.70 517.00	2	8191767	1	8191762		1	8191758	1		-	1	1	8191748
517.10 524.90	2	8191767	1	8191764			-	1		-	1	1	8191748
525.00 531.10	2	8191767	1	8191763		1	8191757	1		-	i	1	8191748
531.20 539.50	2	8191767	1	8191763		1	8191758	1		_	1	1	8191748
539.60 544.50	2	8191767	1	8191765			_	1		_	1	1	8191748
544.60 553.50	2	8191767	1	8191764	1	1	8191757	1		_	1	1	8191748
553.60 562.00	2	8191767	1	8191764		1	8191758	1		-		1	8191748
562.10 564.00	2	8191767	1	8191766			-	1		-	1	1	8191748
564.10 565.00	1	8191767	1	8191766	1	1	8191764	1	1	8191761	1	1	8191748
565.10 573.00	2	8191767	1	8191765		1	8191757	1		_	1	1	8191748
573.10 579.50	2	8191767	1	8191766	1	1	8191755	1		_	1	1	8191748
580.60 583.50	3	8191767		_			_	1		_	1	1	8191748
583.60 584.50	2	8191767	1	8191764		1	8191761	1		_	1	1	8191748
584.60 587.50	1	8191767	1	8191766	1	1	8191764	1	1	8191762	1	1	8191748
587.60 592.50	2	8191767	1	8191766	1	1	8191757	1		_	1	1	8191748
592.60 598.90	3	8191767	1	8191755			_	1		_	1	1	8191748
599.00 602.00	3	8191767	1	8191756	1		_	1		_	1	1	8191748
602.10 603.90	2	8191767	1	8191765		1	8191761	1		_	1	1	8191748
604.00 606.90	2	8191767	1	8191764		1	8191762	1		-	1	1	8191748
607.00 612.00	3	8191767	1	8191757			_	1		-	1	1	8191748
612.10 612.70	1	8191767	1	8191765		2	8191764	1		_	1	1	8191748
612.80 618.60	2	8191767	1	8191765		2	8191758	1		-	i	1	8191748
618.70 620.40	3	8191767	1	8191758			_	1		-	1	1	8191748
620.50 623.40	2	8191767	1	8191766		1	8191761	1		-	i	1	8191748
623.50 626.40	2	8191767	1	8191765		1	8191762	1		-	1	1	8191748
626.50 629.40	2	8191767	1	8191764		1	8191763	1		-	Ī	1	8191748
629.50 632.20	1	8191767	1	8191766		2	8191764	1		-	i	1	8191748
632.30 638.10	2	8191767	1	8191766		2	8191758	1		-	1	1	8191748
638.20 642.90	3	8191767	1	8191761			_	1		-	i	1	8191748
643.00 645.90	2	8191767	1	8191766		1	8191762	1		-	1	1	8191748
646.00 648.90	2	8191767	1	8191765		1	8191763	1		-	1	1	8191748
649.00 651.60	2	8191767	2	8191764			-	1		-	İ	1	8191748
651.70 651.90	2	8191767	1	8191766		1	8191761	1	1	8191757	1	1	8191748
652.00 655.10	2	8191767	1	8191765		1	8191762	1	1	8191757	İ	1	8191748
655.20 657.60	3	8191767	2	8191758			-	1		-	1	1	8191748
657.70 661.40	3	8191767	1	8191761		1	8191756	1		-	1	1	8191748
661.50 665.40	3	8191767	1	8191762			-	1		-		1	8191748
665.50 668.40	2	8191767	1	8191766		1	8191763	1		-		1	8191748
668.50 671.40	2	8191767	1	8191765		1	8191764	1		-	ı	1	8191748
671.50 671.60	3	8191767	1	8191761		1	8191757	1		-		1	8191748
671.70 671.90	2	8191767	1	8191766		1	8191762	1	1	8191757		1	8191748

Key features – Display and operation

Display and operation

Signal status indication

Every solenoid coil is allocated an LED that indicates its signal status.

- Indicator 12 shows the signal status of the coil for duct 2
- Indicator 14 shows the signal status of the coil for duct 4

The valve terminal with serial communication also has an LED for extended diagnostic information.

Manual override

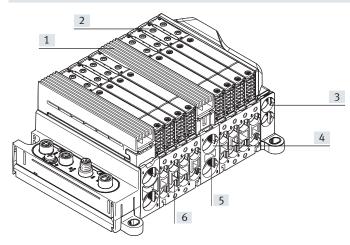
The manual override (MO) enables the valve to be switched when not electrically activated or energised.

The valve is switched by pushing the manual override.

Alternatives:

- A cover cap (code HR or as an accessory) can be used to operate the manual override in detenting mode.
- A cover cap (code HV or as an accessory) can prevent the manual override from being accidentally activated.

Pneumatic connection and control elements



- [1] Flat plate silencer, duct 3/5
- [2] Manual override (for each pilot solenoid, nondetenting or non-detenting/ detenting)
- [3] Ports 12/14 for external pilot air supply and 82/84 for pilot exhaust air in the right end plate
- [4] Supply port, duct 1
- [5] Ducted exhaust air, duct 3/5
- [6] Working ports, ducts 2 and 4, for each valve position

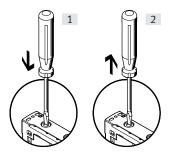
· 🖟 - Note

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

Key features – Display and operation

Manual override

Manual override with automatic return (non-detenting)



- [1] Press in the plunger of the manual override with a pointed object or screwdriver. The pilot valve switches and actuates the main valve.
- [2] Remove the pointed object or screwdriver.

 The spring force pushes the plunger of the manual override back.

 The pilot valve returns to the normal position as does the single solenoid main valve (this is not the case with a double solenoid valve).

Cover cap for manual override, mounting



Clip the covering onto the pilot valve.

Manual override with cover cap, detenting without accessories, actuation



Moving the slide on the cover cap in the direction of the arrow results in:

- The slide locks into the end position
- The pilot valve switches and actuates the main valve



Moving the slide on the cover cap in the direction of the arrow results in:

- The slide locks into the end position
- The spring force pushes the plunger of the manual override back.
- The pilot valve returns to the normal position as does the single solenoid main valve (this is not the case with a double solenoid valve).

Key features - Electrical components

Internal communication

Parallel communication

Parallel communication is the classic type of multi-pin. Each valve coil is assigned a signalling line within the valve terminal. When controlled via IO-Link® or the remote I/O system CPX-AP-A, the bus signal is split internally into individual channels for the valve coils.

When operated using the remote I/O system CPX-AP-A or CPX-AP-I, the VTUX valve terminal is displayed as a single module (32 addresses).

Advantages:

- Robust and easy-tounderstand control
- Troubleshooting and diagnostics with simple tools directly on the valve terminal

Limitations:

- Number of controllable valve coils is limited
- No diagnostic functions directly on the valve

Serial communication

Serial communication significantly expands the internal communication. This is the infrastructure for highly integrated technology modules and enables bidirectional exchange of data and information between the valve and the PLC.

Significantly more valve coils can be controlled and extensive diagnostic functions are possible.

For operation on the remote I/O system CPX-AP-A or CPX-AP-I, each manifold sub-base is displayed as a single module (with a customised number of addresses).

Advantages:

- The number of controllable valve coils is not limited by the communication bandwidth
- Diagnostic functions and, if necessary, sensors directly on the valve
- Troubleshooting and diagnostics also possible remotely via the controller

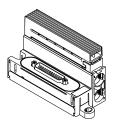
Limitations:

- Manifold sub-bases for four valves available only
- No multi-pin plug connection available
- No IO-Link[®] connection available

	Feature	Parallel communication	Serial communication		
Connection to the higher-l	evel control system				
	Electrical multi-pin plug connection	•	_		
	Direct connection to the remote I/O system CPX-AP-A	•	•		
	Connection to the remote I/O system CPX-AP-I	•	•		
	Connection to IO-Link®	•	-		
nternal structure					
	Manifold sub-bases with one valve position	-	_		
	Manifold sub-bases with four valve positions	•	•		
	Pressure zone separation	•	•		
	Max. no. of valve positions	32	64		
Special functions		<u>'</u>			
	Manifold sub-base with vacuum generator	•	•		
	Manifold sub-base with input modules (2 inputs per valve position)	-	-		

Key features – Electrical components

Electrical connection - Left end plate



The electrical connection from the valves to a higher-order controller is in the left end plate of the VTUX.

Switching between the various connection options is easy: simply swap the left end plate. The pneumatic connections remain unaffected.

The valves are switched by positive or negative logic (PNP or NPN). Mixed operation is not permitted.

Guidelines on addressing for valves/solenoid coils

The addresses are numbered from left to right in ascending order.
The following applies for individual valve positions: address x for coil 14 and address x+1 for coil 12.

Every manifold sub-base occupies a specific number of addresses/pins:

- Manifold sub-base for a single-solenoid valve: 1
- Manifold sub-base for a double-solenoid valve: 2
- Manifold sub-base for four single solenoid valves: 4
- Manifold sub-base for four double solenoid valves: 8



Note

If a single solenoid valve is mounted on a double solenoid valve position, the second address (for coil 12) is also occupied and cannot be used.

Key features – Electrical components

Variants of the left end plate						
	Code	Туре	Communication type	Max. number of addresses	Degree of protection	Information
Electrical multi-pin plug connect	ion					
	Electrical connection: MS1	VABX-A-P-EL-E12-MS1	Parallel	24	IP40	Electrical connection: Sub-D, 25-pin
	Electrical connection: MS1T	VABX-A-P-EL-E12-MS1T	Parallel	24	IP40	Electrical connection: Sub-D, 25-pin
	Electrical connection: MS3	VABX-A-P-EL-E12-MS3	Parallel	32	IP40	Electrical connection: Sub-D, 44-pin
	Electrical connection: MS6	VABX-A-P-EL-E12-MS6	Parallel	24	IP65	Electrical connection: Sub-D, 25-pin
	Electrical connection: MF8	VABX-A-P-EL-E12-MS8	Parallel	32	IP65	Electrical connection: Sub-D, 44-pin
	Electrical connection: MF1	VABX-A-P-EL-E12-MF1	Parallel	24	IP40	Electrical connection: ribbon cable, 26-pin
	Electrical connection: MC	VABX-A-P-EL-E12-MC	Parallel	32	IP40	Electrical connection: terminal strip, 34-pin
Fieldbus interface / remote I/O s	system CPX-AP-A					
	Electrical connection:	VABX-A-P-EL-E12-APA	Parallel	32	IP65	Electrical connection: CPX-
	APA	VABX-A-S-EL-E12-APA	Serial	-	IP65	AP-A interface
Interface to the remote I/O syste	em CPX-AP-I					
	Electrical connection:	VABX-A-P-EL-E12-API	Parallel	32	IP65	Electrical connection
	API	VABX-A-S-EL-E12-API	Serial	_	IP65	2x socket, M8x1, D-coded, 4-pin, AP-COM M8x1, A-coded, 4-pin for power supply
IO-Link® interface						
	Electrical connection:	VABX-A-P-EL-E12-IOL	Parallel	32	IP40	Electrical connection: Push-in, IO-Link [®]
	Electrical connection: IOS	VABX-A-P-EL-E12-IOS	Parallel	32	IP65	Electrical connection: M12, IO-Link [®]

Key features - Electrical components

Fieldbus interface / remote I/O system CPX-AP-A

The pneumatic interface (left end plate) serves as an adapter between the two current feeds. All functions and features of the remote I/O system CPX-AP-A are valid in combination with the CPX-AP-I interface.

This means that:

- The valves are supplied via the system supply of the remote I/O system CPX-AP-A
- The valves can optionally be actuated or switched off separately from the outputs

- Note

More information can be found at:

→ Internet: cpx-ap-a

remote I/O system CPX-AP-I

All functions and features of the CPX-AP-I are valid in combination with the remote I/O system CPX-AP-I:

- Power supply via the connection in the left end plate of the VTUX
- Power supply together with other modules or individually for the valve terminal
- Valves actuated via the communication cable from the preceding module
- Cable length of up to 50 m between the modules
- Up to 80 individual modules/ valve terminals per bus interface

- Note

More information can be found at:

→ Internet: cpx-ap-i→ Internet: cpx-ap-i

IO-Link®

The IO-Link® interface enables the valve terminal VTUX to be connected to the following systems:

- Remote I/O systems CPX-AP-I and CPX-AP-A from Festo
- Automation system CPX-E from Festo
- CPX terminal
- Control system CECC
- IO-Link master

The maximum distance between the IO-Link master and valve terminal with IO-Link[®] interface is 20 m.

The 5-pin connecting cables transmit the power supply for the valves; the power supply for the internal valve terminal electronics and the control signals are separate from this.



Note

More information can be found at:

→ Internet: cpx-ap-a

Instructions for use

Operating materials

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

Incorrect additional oil and too high an oil content in the compressed air reduce the service life of the valve terminal.

Use Festo special oil OFSW-32 or the alternatives listed in the Festo catalogue (as specified in DIN 51524 HLP32; basic oil viscosity 32 CST at 40°C).

Bio-oils

When using bio-oils (oils synthesised on the basis of synthetic or native esters, e.g. rapeseed oil methyl esters), the residual oil content of max.

0.1 mg/m3 must not be exceeded (see ISO 8573-1 Class 2).

Mineral oils

When using mineral oils (e.g. HLP oils to DIN 51524 Part 1 to 3) or corresponding oils based on poly alpha olefins (PAO), the residual oil content of max 5 mg/m3 must not be exceeded (see ISO 8573-1 Class 4).

A higher residual oil content is not permitted, regardless of the compressor oil, because the permanent lubrication would otherwise be flushed out over a period of time.

Datasheet – Valve terminal VTUX

- N - Flow rate up to 690 l/min

- 【】- Valve width 10 mm

- **** - Voltage 24 V DC



General technical data			
		Parallel communication	Serial communication
Valve terminal design		Modular and expandable	Modular and expandable
Actuation type		Electrical	Electrical
Nominal operating voltage	[V DC]	24	24
Permissible voltage fluctuations	[%]	±10	±10
Max. no. of valve positions		32	64
Max. no. of pressure zones		16	16
Valve size	[mm]	10	10
Type of control		Piloted	Piloted
Valve function		2x3/2-way, single solenoid, closed	2x3/2-way, single solenoid, closed
		2x3/2-way, single solenoid, open	2x3/2-way, single solenoid, open
		5/2-way, single solenoid	5/2-way, single solenoid
		5/2-way, double solenoid	5/2-way, double solenoid
		5/3-way, closed	5/3-way, closed
Design		Piston spool	Piston spool
Sealing principle		Soft	Soft
Type of mounting sub-base		Via through-hole	Via through-hole
Type of mounting		Tie rods	Tie rods
Pilot air supply		Internal or external	Internal or external
Suitable for vacuum		Yes	Yes
Exhaust air function		Can be throttled	Can be throttled
Nominal flow rate standardised according to ISO 8778	[l/min]	470 690	470 690
Grid dimension	[mm]	10.55 12.55	10.55 12.55

Pneumatic connections							
Pneumatic connection	1	2	3	4	5	12/14	82/84
QS-4	_	•	_	-	_	-	
QS-6	_	•	_	•	_	•	-
QS-8	•	•	•	•	•	•	
QS-10	•	_	•	-	•	_	_
QS-12	•	_	•	-	•	_	_
QS-1/8	_	•	_	•	_	_	_
QS-5/32	_	•	_	•	_	_	_
QS-1/4	_	•	_	•	_	•	•
QS-5/16	•	•	•	•	•	•	-
QS-3/8	•	_	•	-	•	_	_
For 10 mm cartridge	_	•	_	•	_	_	_
For 12 mm cartridge	_	•	_	•	_	•	-
For 15 mm cartridge	•	_	•	_	•	_	_
Silencer	_	_	•	_	•	_	•
Blanking plug	_			•	•	•	_

Datasheet – Valve terminal VTUX

Operating and environmental	conditions				
		Parallel communication	Serial communication		
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4] → 37			
Pilot medium		Compressed air to ISO 8573-1:2010 [7:4:4] → 37			
Operating pressure	[MPa]	-0.1 +0.7			
	[bar]	-1 +7			
	[psi]	-14.5 +101.5			
Operating pressure for valve	[MPa]	0.15 0.7			
terminal with internal pilot air	[bar]	1.5 7			
supply	[psi]	21.75 101.5			
Pilot pressure	[MPa]	0.15 0.7			
	[bar]	1.5 7			
	[psi]	21.75 101.5			
Ambient temperature	[°C]	-5 +50			
Storage temperature	[°C]	-20 +70			
Nominal operating altitude	[m]	≤ 2000 above sea level			
Maximum setup altitude	[m]	3500			
Corrosion resistance class CRC		1			
CE marking (see declaration of	:	To EU EMC Directive ²)			
conformity)	_	According to EU RoHS Directive ²⁾			
UKCA marking (see declaration	of	To UK EMC regulations ²⁾			
conformity)		to UK RoHS regulations ²⁾			
KC marking	_	KC EMC			
Certification		RCM	RCM		
		c UL us - Listed (OL)	-		
Certificate-issuing authority		UL E322346	-		
Vibration resistant	-	Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6			
Shock resistance		Shock test with severity level 1 to FN 942017-5 and EN 60068-2-27			
Continuous shock resistance to	DIN/IEC	Tested to severity level 1			
68, Part 2 - 82					
Degree of protection		IP20, IP40, IP65			

¹⁾ More information www.festo.com/x/topic/crc

²⁾ For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/... d Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Materials		
Manifold sub-base	PA	
Seals	NBR	
	HNBR	
Note on materials	RoHS-compliant	
LABS (PWIS) conformity	VDMA24364-C1-L	

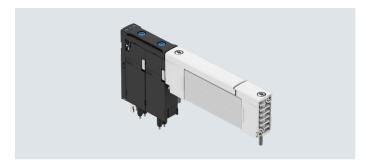
Valve terminal VTUX

Datasheet – Valves of size 10 mm

- N - Flow rate up to 730 l/min

- 【】- Valve width 10 mm

- **** - Voltage 24 V DC



General technical data		
Valve size		10 mm
Design		Piston spool with sealing ring
Actuation type		Electrical
Type of control		Piloted
Duty cycle	[%]	100
Electrical connection		Plug-in
Pilot air supply		External
Sealing principle		Soft
Exhaust air function		Can be throttled
Manual override		Non-detenting
Signal status indication		Yes
Mounting position		Any
Type of mounting		On sub-base
Max. tightening torque for	[Nm]	0.375
valve mounting		
Width	[mm]	10.35

Pneumatic connections		
Pneumatic connection	1	Sub-base
	3	Sub-base Sub-base
	5	Sub-base Sub-base
	12	Sub-base
	82	Sub-base Sub-base
	2	Sub-base
	4	Sub-base
Pilot air connection	12	Sub-base Sub-base
	12/14	Sub-base
Pilot exhaust air port	82/84	Sub-base Sub-base

Datasheet – Valves of size 10 mm

Technical data – Valves								
Code for position function 1-	64	A	M	J	NS	K	KC, KV	G
Valve function		5/2-way, single	solenoid	5/2-way, double solenoid	2x3/2-way, single solenoid, open	2x3/2-way, sin	ngle solenoid,	5/3-way, closed
Reset method		Mechanical spring	Pneumatic spring	-	Mechanical spring	Mechanical spring	Pneumatic spring	Mechanical spring
Overlap		Negative overla	p					Positive overlap
Flow direction		Reversible	Not reversible	Reversible with restrictions	Reversible	Reversible	Not reversible	Reversible
Suitable for vacuum		Yes	No	Yes	No	No	No	Yes
Nominal width	[mm]	4.2	4.2	4.2	3.6	3.8	3.8	3.5
Switching time on	[ms]	8	10	_	14	14	12	10
Switching time off	[ms]	32	18	_	17	17	22	48
Switching time changeover	[ms]	_	_	9	_	_	_	_
Nominal flow rate standardised according to ISO 8778	[l/min]	730	730	730	555	600	600	510
Nominal flow rate standardised to ISO 8778; exhaust 2→3	[l/min]	700	700	700	545	650	650	465
Operating pressure	[MPa]	-0.09 +0.7	0.2 0.7	-0.09 +0.7	0.0 0.7	0.0 0.7	0.15 0.7	-0.09 +0.7
	[bar]	-0.9 +7	2 7	-0.9 +7	0 7	0 7	1.5 7	-0.9 +7
Pilot pressure	[MPa]	0.25 0.7	0.2 0.7	0.15 0.7	0.15 0.7	0.15 0.7	0.15 0.7	0.25 0.7
	[bar]	2.5 7	2 7	1.5 7	1.5 7	1.5 7	1.5 7	2.5 7
Product weight	[g]	43.4	43.3	51.9	52.6	52.6	52	53.2

Operating and environmental conditions			
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] → 37		
Pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4] → 37		
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Ambient temperature [°C]	-5 +50		
Temperature of medium [°C]	-5 +50		
Storage temperature [°C]	-20 +70		
Corrosion resistance class CRC ¹⁾	1		
Vibration resistant	Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6		
Shock resistance	Shock test with severity level 1 to FN 942017-5 and EN 60068-2-27		
Degree of protection	IP65		

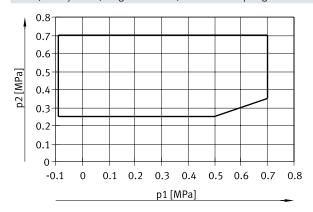
¹⁾ More information www.festo.com/x/topic/crc

Materials	
Housing	Anodised wrought aluminium alloy
Spring	High-alloy stainless steel
Piston spool	POM
Screws	Stainless steel
Seals	HNBR
Dynamic seals	HNBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364 zone III

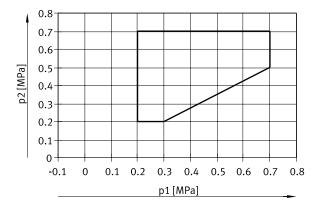
Datasheet - Valves of size 10 mm

Pilot pressure p2 as a function of working pressure p1

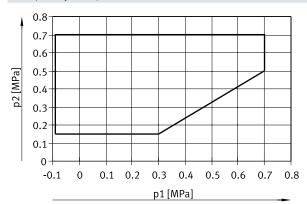
For 5/2-way valve, single solenoid, mechanical spring return



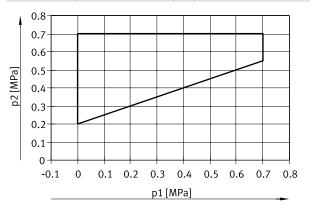
For 5/2-way valve, single solenoid, pneumatic spring return



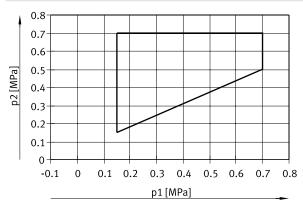
For 5/2-way valve, double solenoid



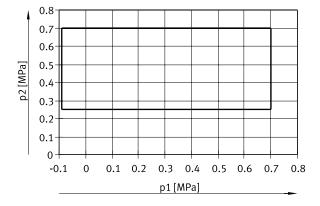
For 2x3/2-way valve, mechanical spring return



For 2x3/2-way valve, pneumatic spring return



For 5/3-way valve, normally closed



$\label{eq:decomposition} \mbox{Datasheet} - \mbox{Left end plate with IO-Link}^{\mbox{\scriptsize @}}$

Festo-specific, standardised interface for direct connection via a cable to an IO-Link master.

Valve terminals with IO-Link® interface can be expanded by up to 32 solenoid coils/valve positions.

Up to 32 valve positions can be equipped with single solenoid valves.



IO-Link® for valve terminal VTUX

The IO-Link® interface enables the valve terminal VTUX to be connected to an IO-Link® network.

The maximum distance between the IO-Link master and the valve terminal with IO-Link® interface is 20 m.

The 5-pin connecting cables transmit the power supply for the valves; the power supply for the internal valve terminal electronics and the control signals are separate from this.

The built-in LED is used as a status indicator for diagnostics and maintenance.

General technical data		
Electrical connection	Push-in	M12
Size	1	
	2	
Types of communication	IO-Link [®]	
Protocol	IO-Link [®]	
Electrical control	IO-Link [®]	
Valve terminal design	Valve sizes can be mixed	
Compatible with	Valve terminal VTUX-A-P	
Max. number of solenoid coils	32	
Diagnostics via LED	Connection status	
	(Outputs) Power supply load	
Connection position	On the side	
Cable outlet	Straight	
Type of mounting	With through-hole for M5 screw	
Type of mounting sub-base	Via through-hole	
Max. tightening torque for [Nm]	6	
wall mounting		
Dimensions W x L x H [mm]	45.6 x 117.4 x 53.9	
Product weight [g]	124.4	127.4

Pneumatic connections

Pneumatic connection	1	For 15 mm cartridge
	5	For 15 mm cartridge

Valve terminal VTUX

$\label{eq:decomposition} \mbox{Datasheet} - \mbox{Left end plate with IO-Link}^{\mbox{\scriptsize @}}$

Technical data – Electrical component	s			
Electrical connection	Push-in	M12		
Connection cross-section [mm²]	0.2 1.5	-		
Reverse polarity protection	Yes	Yes		
Fuse protection (short circuit)	Internal electronic fuse per channel			
Electrical isolation of outputs between channel - internal communication	Yes			
Potential separation between the support voltages electronics/sensors and load valves	*			
Nominal operating voltage DC [V] for electronics/sensors	24			
Nominal operating voltage DC [V] load	24			
Note on the operating voltage	SELV/PELV power supply units required Note voltage drop			
Permissible voltage [%] fluctuations, electronics/ sensors	±25			
Permissible voltage [%] fluctuations, load	±10			
Intrinsic current consumption [mA] at nominal operating voltage, electronics/sensors	Typically 10			
Intrinsic current consumption [mA] at nominal operating voltage, load	Typically 15			
Power consumption at [mW] 24 V DC	240			
Max. power supply [A]	2 x 4 (external fuse required)			
Pollution degree	2			

Technical data – IO-Link®	
IO-Link®, protocol version [mm²]	Device V 1.1
IO-Link®, communication mode	COM3.
IO-Link®, port class	В
IO-Link®, process data width [byte]	4
OUT	
IO-Link [®] , minimum cycle time [μs]	500
Max. cable length [m]	20

Datasheet – Left end plate with IO-Link®

Operating and environmental conditions				
Electrical connection		Push-in	M12	
Ambient temperature	[°C]	-5 50		
Storage temperature	[°C]	-20 70		
Relative humidity	[%]	5 95		
Nominal operating altitude	[m]	≤ 2000 above sea level		
Maximum setup altitude	[m]	3500		
Corrosion resistance class CRC ¹⁾		2		
CE marking (see declaration of		To EU EMC Directive		
conformity) ²⁾		To EU RoHS Directive		
UKCA marking (see declaration of		To UK EMC regulations		
conformity) ²⁾		To UK RoHS regulations		
KC marking		KC EMC		
Certification		RCM		
Vibration resistant		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6		
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27		
Degree of protection to EN 60529		IP40	IP65	

¹⁾ More information www.festo.com/x/topic/crc

²⁾ For information about the area of use, see the declaration of conformity at: www.festo.com/catalogue/... → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Materials	
Sub-base	Reinforced PA
Cover	Reinforced PA
Seals	NBR
Film	Polyester
Sleeve	High-alloy stainless steel
Clip	High-alloy stainless steel
Nut	High-alloy stainless steel
Note on materials	RoHS-compliant RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Datasheet – Manifold sub-bases for parallel communication





General technical data					
Туре		VABX-A-P-BV-AH	VABX-A-P-BV-BH	VABX-A-P-BV-AH-R	VABX-A-P-BV-BH-R
Size		1	2	1	2
Integrated function		With electrical interlinking module	With electrical interlinking module	With electrical interlinking module	With electrical interlinking module
Compatible with		Valve terminal VTUX-A-P	Valve terminal VTUX-A-P	Valve terminal VTUX-A-P	Valve terminal VTUX-A-P
Maximum number of valve pos	sitions	1	1	4	4
Flow direction		Reversible	Reversible	Reversible	Reversible
Suitable for vacuum		Yes	Yes	Yes	Yes
Nominal flow rate standardised according to ISO 8778	[l/min]	470	690	470	690
Pneumatic connection 2		for 10 mm cartridge	For 12 mm cartridge	for 10 mm cartridge	For 12 mm cartridge
Pneumatic connection 4		for 10 mm cartridge	For 12 mm cartridge	for 10 mm cartridge	For 12 mm cartridge
Type of mounting		Tie rods	Tie rods	Tie rods	Tie rods
Type of mounting sub-base	-	Via through-hole	Via through-hole	Via through-hole	Via through-hole
Grid dimension	[mm]	10.55	12.55	10.55	12.55
Dimensions W x L x H	[mm]	10.55 x 104.3 x 43.1	12.55 x 104.3 x 43.1	42.05 x 104.3 x 43.1	50.05 x 104.3 x 43.1
Product weight	[g]	31.2	36.2	115.7	136.2

Technical data – Electrical components		
Electrical control	Multi-pin plug	
Pollution degree	2	

Operating and environmental conditions		
Ambient temperature [°C]	-5 50	
Storage temperature [°C]	-20 70	
Relative humidity [%]	5 95	
Corrosion resistance class CRC ¹⁾	2	
CE marking (see declaration of	To EU EMC Directive	
conformity) ²⁾	To EU RoHS Directive	
KC marking	KC EMC	
Certification	RCM	
Vibration resistant	Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6	
Shock resistance	Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27	
Degree of protection to EN 60529	IP65	

¹⁾ More information www.festo.com/x/topic/crc

²⁾ For information about the area of use, see the declaration of conformity at: www.festo.com/catalogue/... → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Materials		
	For one valve	For four valves
Sub-base	Reinforced PA	Reinforced PA
Seals	NBR	NBR
Retaining bracket	-	POM
Clip	High-alloy stainless steel	High-alloy stainless steel
Nut	High-alloy stainless steel	High-alloy stainless steel
Note on materials	RoHS-compliant	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L	VDMA24364-B1/B2-L

Datasheet – Manifold sub-bases for serial communication





General technical data				
Туре		VABX-A-S-BV-AH-RV	VABX-A-S-BV-BH-RV	
Size		1	2	
Integrated function		With electrical interlinking module	With electrical interlinking module	
Compatible with		Valve terminal VTUX-A-S	Valve terminal VTUX-A-S	
Maximum number of valve posi	itions	4	4	
Flow direction		Reversible	Reversible	
Suitable for vacuum		Yes	Yes	
standardised according to	[l/min]	470	690	
ISO 8778				
Pneumatic connection 2		for 10 mm cartridge	For 12 mm cartridge	
Pneumatic connection 4		for 10 mm cartridge	For 12 mm cartridge	
Type of mounting		Tie rods	Tie rods	
Type of mounting sub-base		Via through-hole	Via through-hole	
Grid dimension	[mm]	10.55	12.55	
Dimensions W x L x H	[mm]	42.05 x 104.3 x 43.1	50.05 x 104.3 x 43.1	
Product weight	[g]	120.7	141.2	

echnical data – Control			
	Without input module	With input module	
Electrical control	AP interface		
Communication interface, protocol	AP		
Max. number of inputs	_	8	
Max. address volume for [byte]	1	1	
outputs			
Diagnostics via LED	Diagnostics per channel		
	Diagnostics per module		
Diagnostics via internal communication	Load switch-off		
	Logic supply overvoltage PS		
	Load supply overvoltage PL		
	Logic supply undervoltage PS		
	Load supply undervoltage PL		
Electrical isolation of outputs between	Yes		
channel - internal communication			
Potential separation between the supply	Yes		
voltages electronics/sensors and load/			
valves			

Datasheet – Manifold sub-bases for serial communication

Technical data – Electrical con	ponents	
Nominal operating voltage DC for electronics/sensors	[V]	24
Nominal operating voltage DC load	[V]	24
Permissible voltage fluctuations, electronics/ sensors	[%]	±25
Permissible voltage fluctuations, load	[%]	±10
Note on the operating voltage		SELV/PELV power supply units required
		Note voltage drop
Power failure buffering	[ms]	10
Intrinsic current consumption at nominal operating voltage, electronics/sensors	[mA]	Typically 24
Intrinsic current consumption at nominal operating voltage, load	[mA]	Typically 7
Power consumption at	[mW]	740
24 V DC		
Overvoltage category		
Fuse protection (short circuit)		Internal electronic fuse per channel
Inductive protective circuit		Integrated
Reverse polarity protection		Yes
Pollution degree		2

Operating and environmental conditions			
	Without input module	With input module	
Ambient temperature [°C]	-5 50		
Storage temperature [°C]	-20 70		
Relative humidity [%]	5 95		
Max. setup altitude [m]	-	3500	
Nominal operating altitude	< 3000 m above sea level	≤ 2000 m above sea level	
Corrosion resistance class CRC ¹⁾	1		
CE marking (see declaration of	To EU EMC Directive		
conformity) ²⁾	To EU RoHS Directive		
KC marking	KC EMC		
Certification	RCM		
Vibration resistant Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6		7-4 and EN 60068-2-6	
Shock resistance	Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27		
Degree of protection to EN 60529 IP65 IP2		IP20, IP65	

¹⁾ More information www.festo.com/x/topic/crc

²⁾ For information about the area of use, see the declaration of conformity at: www.festo.com/catalogue/... → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Materials		
	Without input module	With input module
Sub-base	Reinforced PA	
Seals	NBR	
Retaining bracket	POM	
Sleeve	High-alloy stainless steel	
Clip	High-alloy stainless steel	
Nut	High-alloy stainless steel	
Note on materials	RoHS-compliant	
LABS (PWIS) conformity	VDMA24364-B1/B2-L	VDMA24364-B2-L

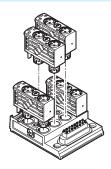
Datasheet – Input modules for manifold sub-bases

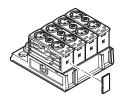
- Voltage 24 V DC The digital input modules provide 8 digital inputs in accordance with IEC 61131-2, types 1 and 3 for connecting digital sensors.

The input modules have LEDs to indicate the signal status.



Configuration





On the input module with electrical connection M8, two M8 connections are mounted as a unit using a screw connection. This makes it easy to disconnect both connections from the module at the same time.

When assembled, the entire installation is particularly spacesaving.

The units also allow inscription labels to be attached.

General technical data			
	Electrical connection, spring-loaded terminal	Electrical connection, socket M8	
Max. number of modules	6		
Number of inputs	8		
Max. number of inputs	8		
Diagnostics via internal communication	Short circuit/overload Power OUT PL		
Electrical isolation of inputs between channels	No		
Dimensions W x L x H [mm]	41.8 x 60.5 x 20.9	41.8 x 49.0 x 27.2	
Product weight [g]	32	42	

Technical data – Inputs				
	Electrical connection, spring-loaded terminal	Electrical connection, socket M8		
Electrical connection 1, function	Digital input	Digital input		
Electrical connection	Spring-loaded terminal	M8		
Electrical connection 1, connection type	Terminal strip	Socket		
Electrical connection 1, number of pins/	3	3		
cores				
Electrical connection 1, assigned pins/	24	24		
cores				
Electrical connection 1, type of mounting	Screw-type lock	Screw-type lock		
Electrical connection 1, [Nm]	0.7	0.7		
tightening torque				
Max. tightening torque for plug [Nm]	_	0.6		
Electrical connection for input, [mm²]	0.2 1.5	_		
conductor cross section				
Electrical connection for output, note on	0.09-1.5 flex. without wire end sleeve	_		
conductor cross section				
Electrical connection for input, AWG	AWG28 AWG16	_		
conductor cross section				
Input debounce time [ms]	3	3		
Switching level	Signal 1: ≥ 11 V	Signal 1: ≥ 11 V		
Voltage drop of sensor supply [V]	<1	<1		
Max. cable length	30 m inputs	30 m inputs		
Input characteristics	According to EN 61131-2	According to EN 61131-2		

Datasheet – Input modules for manifold sub-bases

echnical data – Electrical components				
		Electrical connection, spring-loaded terminal	Electrical connection, socket M8	
Nominal operating voltage DC for electronics/sensors	[V]	24		
Permissible voltage fluctuations, electronics/sensors	[%]	±25		
Permissible voltage fluctuations, load	[%]	±10		
Note on the operating voltage		SELV/PELV power supply units required		
		Note voltage drop		
Power failure buffering	[ms]	10		
Intrinsic current consumption at nominal operating voltage, electronics/sensors	[mA]	Typically 4		
Max. total current of inputs per module	[A]	0.2		
Overvoltage category		II		
Fuse protection (short circuit)		Internal electronic fuse per module		
Behaviour after end of overload of t	he sensor	Automatic return (default)		
supply				
Pollution degree		2		

Operating and environmental cor	nditions			
_		Electrical connection, spring-loaded terminal Electrical connection, socket M8		
Ambient temperature	[°C]	-5 50		
Storage temperature	[°C]	-20 70		
Relative humidity	[%]	5 95		
Nominal operating altitude		≤ 2000 m above sea level		
Corrosion resistance class CRC ¹⁾ 0 1		1		
CE marking (see declaration of conformity) ²⁾		To EU EMC Directive		
		To EU RoHS Directive		
KC marking	rking KC EMC			
Certification		RCM		
Vibration resistant	/ibration resistant Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6		-4 and EN 60068-2-6	
Shock resistance	Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27		8-2-27	
Degree of protection		IP20	IP65	
Note on degree of protection – In mounted state			In mounted state	

¹⁾ More information www.festo.com/x/topic/crc

²⁾ For information about the area of use, see the declaration of conformity at: www.festo.com/catalogue/... → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Materials		
	Electrical connection, spring-loaded terminal	Electrical connection, socket M8
Plug housing	PA	PA
Film	Polyester	Polyester
Seals	-	NBR
O-ring	-	NBR
Note on materials	RoHS-compliant	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B2-L	VDMA24364-B2-L

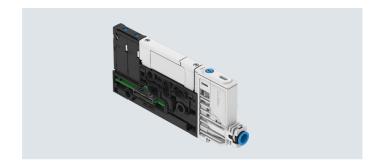
Pin assignment of sensor connections, electrical connection socket M8			
Terminal assignment	Pin	Signal	Designation
4	1	24 V	Operating voltage 24 V
	3	0 V	Operating voltage 0 V
3 (0 0) 1	4	lx*	Sensor signal

^{*} Ix = Input x

Datasheet - Manifold sub-base for vacuum

- 🚺 - Valve width 10 mm

- **≅** - Maximum vacuum 93 kPa



Operating mode

Description

Vacuum generation for a single valve position can be integrated on the VTUX. No further installations are required. The vacuum is generated within the manifold sub-base according to the Venturi principle and is available at port 2.

By using a 2x 3/2-way valve, the ejector pulse function is available at the same time.

With the integrated check valve, vacuum can be held in an energy-saving way.

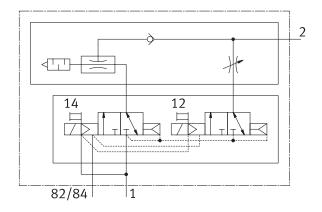
The manifold sub-base for vacuum comprises:

- Adjusting screw for setting the ejector pulse
- Integrated check valve for energy-saving vacuum maintenance
- Integrated silencer
- The corresponding valve must be ordered separately via the configurator

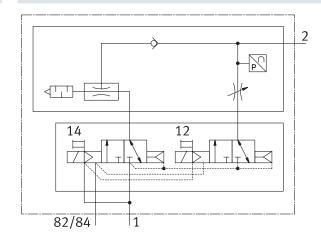
Additional functions are available for the version with serial links:

- Pressure sensor
- · Air saving function
- Condition monitoring

Manifold sub-base for vacuum with multi-pin electrical control



Manifold sub-base for vacuum with AP interface electrical control

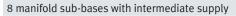


Datasheet - Manifold sub-base for vacuum

Combination of m	Combination of manifold sub-bases for vacuum and power supply modules				
Ambient temperature	Power supply modules	Number of manifold sub- bases for vacuum per valve terminal			
Max. 50 °C	None	4	The integrated vacuum generation places high demands on the valve		
	After 4 manifold sub-bases for vacuum	Any	terminal VTUX. Good heat dissipation is therefore required. Avoid mounting the valve		
Max. 40 °C	None	7	terminal on highly insulating surfaces (e.g. wood or plastic).		
	After 4 manifold sub-bases for vacuum	Any	termination many manating surfaces (e.g. wood of plastic).		

Examples of possible configurations at a maximum ambient temperature of $50\ensuremath{^{\circ}\text{C}}$

4 manifold sub-base without intermediate supply







13 manifold sub-base with intermediate supply





The vacuum connection has no filter function. A filter must therefore be installed upstream if contamination of the intake air is expected. This prevents any foreign matter getting in (e.g. when operating a suction cup).

Datasheet – Manifold sub-base for vacuum

General technical data				
Туре	VABX-A-P	VABX-A-S		
Electrical control	Multi-pin plug	AP interface		
Communication interface, protocol	-	AP-COM		
Compatible with	Valve terminal VTUX-A-P	Valve terminal VTUX-A-S		
Maximum number of valve positions	1			
Max. no. of solenoid coils	2			
Integrated function	Ejector pulse, electrical	Ejector pulse, electrical		
	Ejector pulse valve, electric	Ejector pulse valve, electric		
	Flow restrictor	Flow restrictor		
	On/off valve, electric	On/off valve, electric		
	Check valve	Check valve		
	Open silencer	Open silencer		
	With electrical interlinking module	With electrical interlinking module		
	_	Pressure sensor		
	_	Pressure transmitter		
	-	Air-saving function, electric		
Mounting position	Any	Any		
Type of mounting	Tie rods	Tie rods		
Dimensions W x L x H [mm	12.55 x 150.8 x 68.8			
Length [mm] 150.8	150.8		
Grid dimension [mm] 12.55	12.55		
Valve size [mm] 10			
Product weight [g]	65	68		

Pneumatic connections

Pneumatic connection	2	For tubing O.D. 4 mm
		For tubing O.D. 6 mm
		For tubing O.D. 8 mm
		For tubing O.D. 5/32"
		For tubing O.D. 1/4"
		For tubing O.D. 5/16"

٨
- F Note
Tubing sizes smaller than
those specified reduce the
performance of the vacuum generator.
Tubing s those sp perform

Technical data – Valves				
Туре	VABX-A-P	VABX-A-S		
Valve function	2x3/2-way, single solenoid, closed			
Type of control	Piloted			
Actuation type	Electrical	Electrical		
Pilot air supply	Internal	Internal		
Sealing principle	Soft	Soft		
Display type	LED	LED		
Signal status indication	Yellow LED, valve control	Yellow LED, valve control Blue LED for valve control		
		LED changes to green for "Vacuum reached"		

Datasheet – Manifold sub-base for vacuum

Technical data – Electrical components Type		(-A-P	VABX-A-S
			W.EXT.
Reverse polarity protection	Yes	mate I	Internal I
Inductive protective circuit		rated	Integrated
Nominal operating voltage DC [V]			-
Nominal operating voltage DC [V] for electronics/sensors] -		24
Nominal operating voltage DC [V] load] -		24
Note on the operating voltage	SELV	/PELV power supply units required	SELV/PELV power supply units required
	Note	voltage drop	Note voltage drop
Permissible voltage [% fluctuations	b] ±10		-
Permissible voltage [% fluctuations, electronics/ sensors	-		±10
Permissible voltage [% fluctuations, load	·] –		±10
Intrinsic current consumption [m at nominal operating voltage	A] Typic	ally 2	-
Intrinsic current consumption [m at nominal operating voltage, electronics/sensors	- A]		Typically 27
Intrinsic current consumption [m at nominal operating voltage, load	- A]		Typically 2.5
Power consumption at [W 24 V DC	/] –		0.65
Power failure buffering [m	ıs] –		10
Electrical isolation of outputs betw channel - internal communication	veen –		Yes
Potential separation between the voltages electronics/sensors and lavalves			Yes
Diagnostics via internal communic	ation –		Load switch-off
9			Electronics/sensors overvoltage
			Electronics/sensors undervoltage

Technical data – Vacuum										
ype		VABX-VB07H	VABX-VB07L	VABX-VB010H	VABX-VB010L					
Ejector characteristics		High vacuum	High suction rate	High vacuum	High suction rate					
Adjusting element		Slotted head screw	Slotted head screw							
Silencer design		Open								
Nominal width of Laval nozzle [mm]		0.7	0.7	0.95	0.95					
Maximum vacuum	[MPa]	0.093	_	0.093	_					
Max. suction volume flow against atmosphere	[l/min]	18	33.7	24	45					
Pressurisation time at nominal operating pressure	[s]	0.37	0.34	0.39	0.42					

Technical data - Pressure sen	sor							
Туре		VABX-A-S						
Measured variable		Relative pressure						
Measuring principle		Piezoresistive						
Pressure measuring range	[MPa]	-0.1 +0.1						
	[bar]	-1 +1						
	[psi]	-14.5 +14.5						
Accuracy in ± % FS	[%]	3 FS						
Reproducibility, switching	[%]	1						
value FS								

Datasheet – Manifold sub-base for vacuum

Operating and environmental	conditions										
Туре		VABX-VB07H	VABX-VB07L	VABX-VB010H	VABX-VB010L						
Operating medium		Compressed air to ISO	8573-1:2010 [7:4:4] → 37								
Pilot medium		Compressed air to ISO 8573-1:2010 [7:4:-] → 37									
Note on the operating/pilot m	edium	Ester oil < 0.1mg/m³, a	according to ISO 8573-1:201	0 [-:-:2]							
		Lubricated operation not possible									
Operating pressure	[MPa]	0.2 0.7									
	[bar]	2 7									
	[psi]	29 101.5									
Nominal operating pressure	[MPa]	0.6									
	[bar]	6	6								
	[psi]	87									
Operating pressure for max.	[MPa]	0.44	-	0.38	-						
vacuum	[bar]	4.4	-	3.8	_						
perating pressure for max.	[psi]	63.8	-	55.1	-						
Operating pressure for max. suction rate	[MPa]	0.3	0.6	0.4	0.6						
	[bar]	3	6	4	6						
	[psi]	43.5	87		87						
Pilot pressure	[MPa]	0.2 0.7									
Pilot pressure	[bar]	27									
	[psi]	29 101.5									
Ambient temperature	[°C]	−5 +50									
Storage temperature	[°C]	-20 +70									
Relative humidity	[%]	5 95									
Maximum setup altitude	[m]	2000									
Nominal operating altitude		≤ 2000 m above sea lev	vel								
Corrosion resistance class CRO	[1)	2									
CE marking (see declaration o	f conformity)	To EU EMC Directive ²)									
		According to EU RoHS [
UKCA marking (see declaratio	n of	To UK EMC regulations	2)								
conformity)											
KC marking		KC EMC									
Certification		RCM									
Vibration resistant		1 11	<u> </u>	942017-4 and EN 60068-2-6							
Shock resistance		<u> </u>	y level 2 to FN 942017-5 and	EN 60068-2-27							
Degree of protection		IP65									
Note on degree of protection		In mounted state									

¹⁾ More information www.festo.com/x/topic/crc

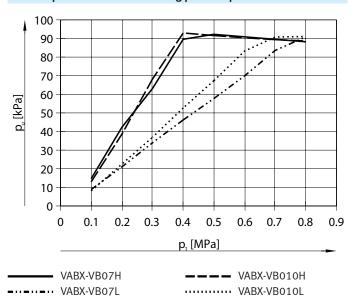
²⁾ For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/... d Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

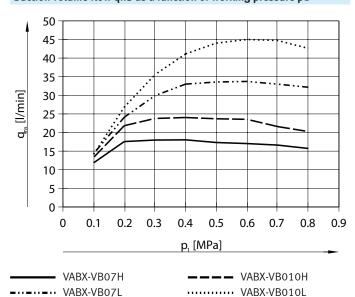
Materials	
Sub-base	Reinforced PA
Cover	Reinforced PA
Housing	Reinforced PA
Adjusting screw	Reinforced PA
Silencer	PP; PU foam
Seals	HNBR; NBR
O-ring	HNBR; NBR
Clip	High-alloy stainless steel
Nut	High-alloy stainless steel
Screws	High-alloy stainless steel
Film	Polyester
Sleeve	Wrought aluminium alloy
Female nozzle	POM
Jet nozzle	Wrought aluminium alloy
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Datasheet - Manifold sub-base for vacuum

Vacuum pu as a function of working pressure p1



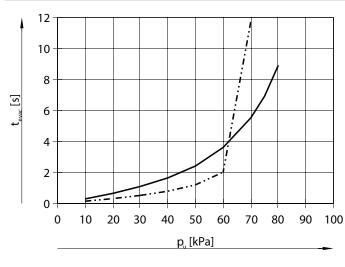
Suction volume flow qnS as a function of working pressure p1

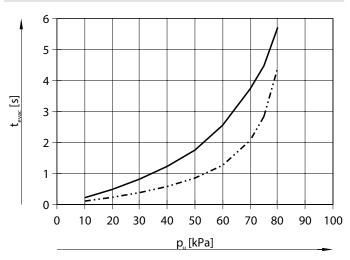


Evacuation time tevac as a function of vacuum pu at 0.6 bar operating pressure

Nominal width of Laval nozzle 0.7 mm

Nominal width of Laval nozzle 0.95 mm



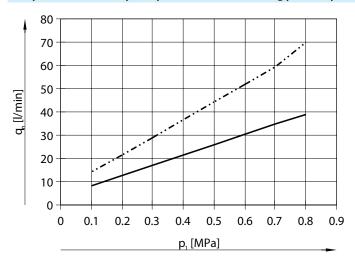


VABX-VB07H

•••••• VABX-VB010H
•••••• VABX-VB010L

Datasheet - Manifold sub-base for vacuum

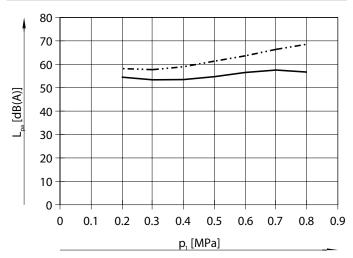
Compressed air consumption qn as a function of working pressure p1



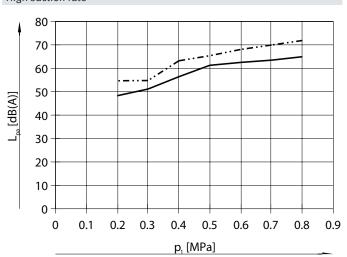
VABX-VB07

Sound pressure LpA as a function of working pressure p1, port 2 closed

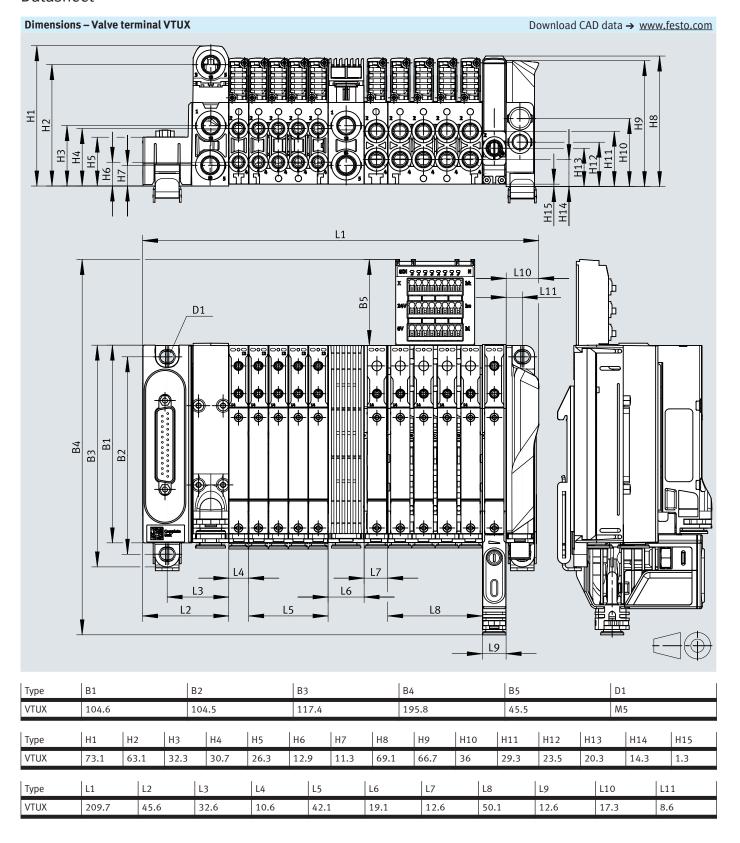
Low suction volume flow

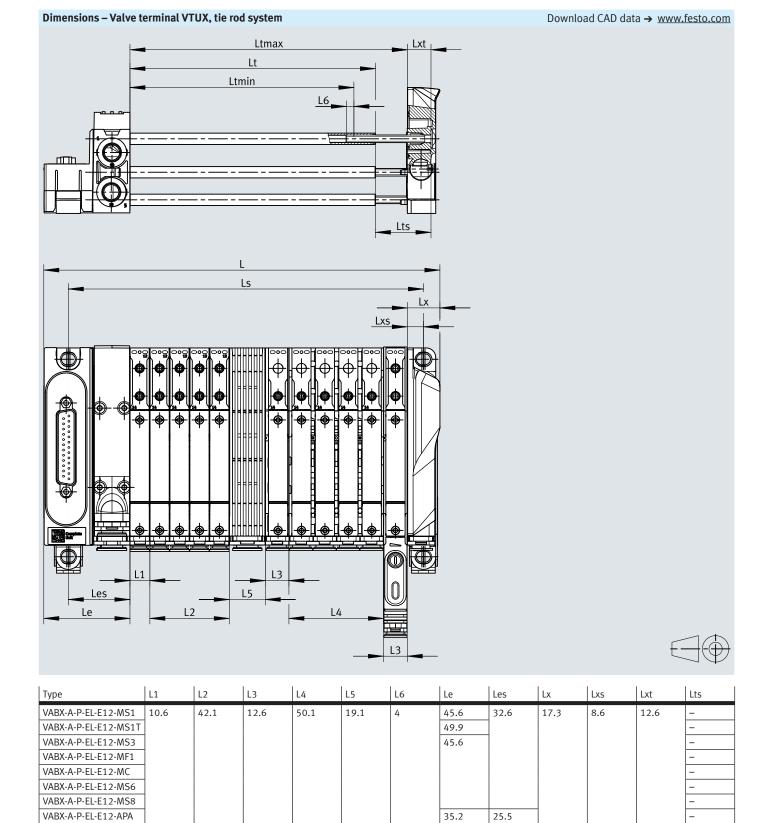






------ VABX-VB07L ----- VABX-VB010L ----- VABX-VB07H ----- VABX-VB010H





VABX-A-S-EL-E12-APA VABX-A-P-EL-E12-API

VABX-A-S-EL-E12-API VAME-XA-S-M4-30

VAME-XA-S-M4-45

45.6

32.6

30

45

Valve terminal VTUX

Datasheet

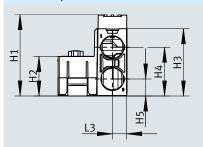
Туре	L ₁)	Ls ¹⁾
VTUX	Le + L8 + m x L1 + n x L2 + o x L5 + p x L3 + q x L4 + Lx	Les + m x L1 + n x L2 + o x L5 + p x L3 + q x L4 + Lxs

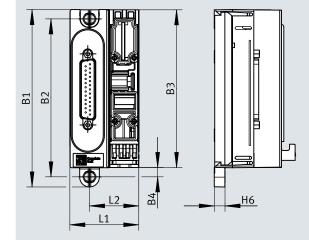
- 1) m = Number of manifold sub-bases for one valve, size 1
 - n = Number of manifold sub-bases for four valves, size 1
 - o = Number of power supply modules
 - p = Number of manifold sub-bases for one valve, size 2/manifold sub-bases for vacuum
 - q = Number of manifold sub-bases for four valves, size 2
 - o, p, q = Number of manifold sub-bases/valve positions

Туре	Ltmax ¹⁾	Ltmin ¹⁾	Ltol ¹⁾
VTUX	m x L1 + n x L2 + o x L5 + p x L3 + q x L4	m x L1 + n x L2 + o x L5 + p x L3 + q x L4 + (Lxt - Lts) + 4 + Ltol	(m + n + o + p + q + 1) x 0.2

- 1) m = Number of manifold sub-bases for one valve, size 1
 - $n = \hbox{Number of manifold sub-bases for four valves, size 1}$
 - $o = Number\ of\ power\ supply\ modules$
 - $p = \hbox{Number of manifold sub-bases for one valve, size $2/$manifold sub-bases for vacuum}$
 - q = Number of manifold sub-bases for four valves, size 2
 - o, p, q = Number of manifold sub-bases/valve positions

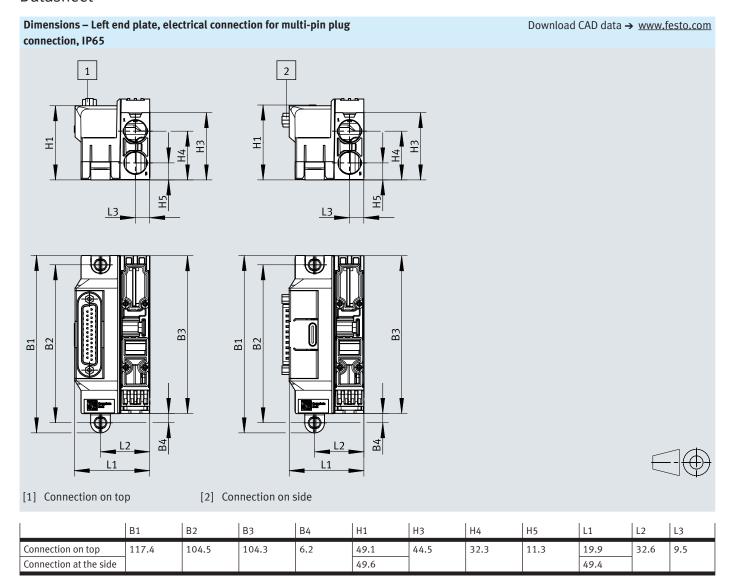
$\label{eq:Dimensions-Left} \begin{tabular}{ll} \textbf{Dimensions-Left end plate, electrical connection for multi-pin plug connection, IP40} \end{tabular}$



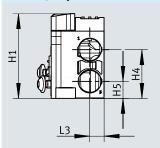


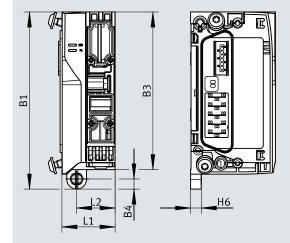


Туре	B1	B2	В3	B4	H1	H2	H3	H4	H5	H6	L1	L2	L3
VABX-AP-EL-E12	117.4	104.5	104.3	6.2	53.9	26.2	44.5	32.3	11.3	7.1	45.6	32.6	9.5



Dimensions – Left end plate, pneumatic interface for remote I/O system CPX-AP-A, with silencer

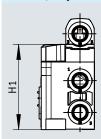


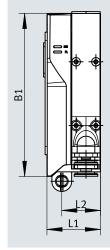




Туре	B1	В3	B4	H1	H4	H5	H6	L1	L2	L3
VABX-A-P-EL-E12-APA	117.2	104.3	6.7	56.1	32.3	11.3	7.1	35.2	25.5	9.5

Dimensions – Left end plate, pneumatic interface for remote I/O system CPX-AP-A, with ducted exhaust air

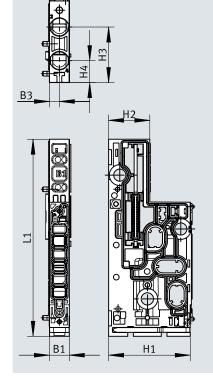






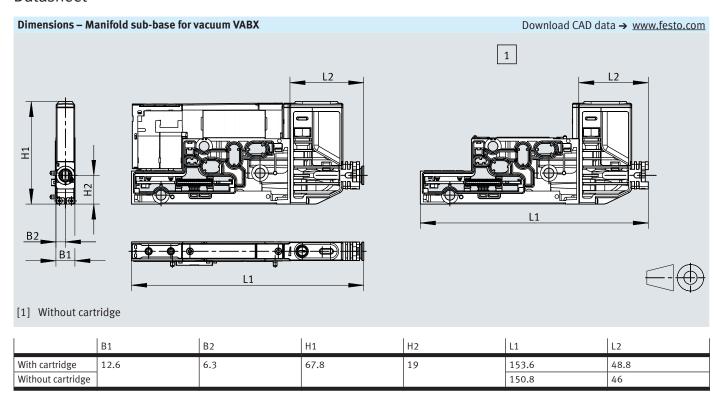
Туре	B1	H1	L1	L2
VABX-A-P-EL-E12-APA	107.3	56.1	35.2	25.5

Dimensions - Manifold sub-base for one valve

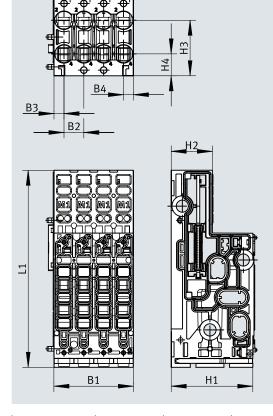




Туре	B1	В3	H1	H2	Н3	H4	L1
VABX-A-P-BV-AH	10.6	5.3	43.2	21.8	29.4	11.6	104.3
VABX-A-P-BV-BH	12.6	6.3	43.2	21.8	28	13	104.3



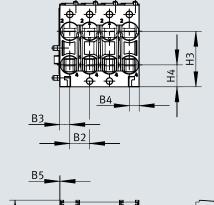
$\label{lem:decomposition} \textbf{Dimensions} - \textbf{Manifold sub-base for four valves, without connection} \\ \textbf{for input module}$

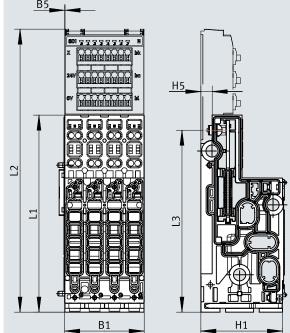




Туре	B1	B2	B3	B4	H1	H2	H3	H4	L1
VABX-A-P-BV-AH	42.1	10.5	5.3	5.3	43.2	21.8	29.4	11.6	104.3
VABX-A-S-BV-AH									
VABX-A-P-BV-BH	50.1	12.4	6.5	6.4	43.2	21.8	28	13	104.3
VABX-A-S-BV-BH									

$\label{lem:decomposition} \textbf{Dimensions} - \textbf{Manifold sub-base for four valves, with connection for input module}$



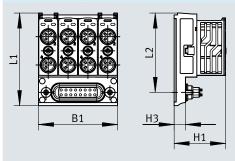




Туре	B1	B2	B3	B4	H1	H2	H3	H4	H5	L1	L2	L3
VABX-A-S-BV-AH	42.1	10.5	5.3	5.3	0.2	43.2	29.4	11.6	6	104.3	149.8	96.3
VABX-A-S-BV-BH	50.1	12.4	6.5	6.4	4.2	43.2	28	13	6	104.3	149.8	96.3

Dimensions – Input module, electrical connection socket M8

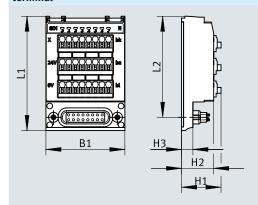
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Туре	B1	H1	H3	L1	L2
VAEM-XA-E-8E-N-V	41.8	27.2	6	49	42
VAEM-XA-E-8E-P-V					

Dimensions – Input module – Electrical connection spring-loaded terminal





Туре	B1	H1	H2	H3	L1	L2
VAEM-XA-E-8E-N-K2	41.8	20.9	17	6	60.5	53.5
VAEM-XA-E-8E-P-K2						

В1

19.1

Type

VABX-A-P-BU

VABX-A-S-BU

В2

9.6

Datasheet

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H2

31

Н3

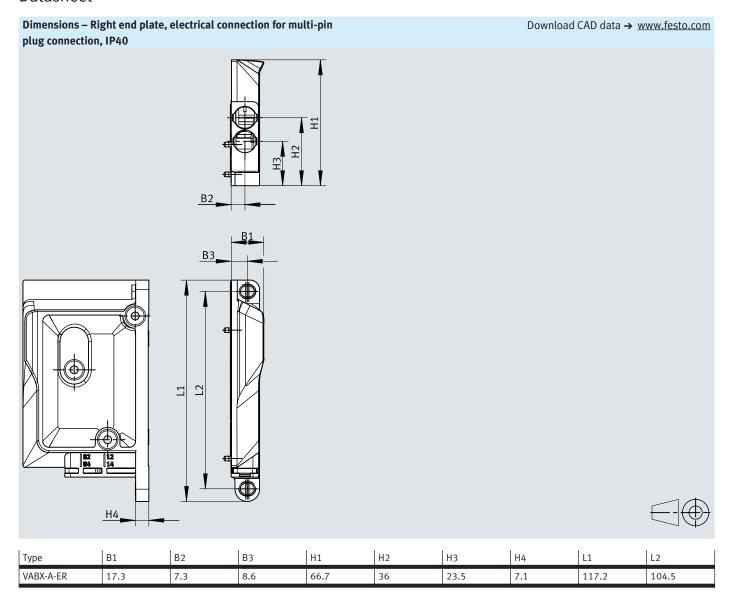
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L1

104.3

H1

43.2



Ordering data		lvi e e			ls .	1-
	Code	Valve function			Part no.	Туре
ndividual solenoio	l valve – Valve size 10 mm					
	5/2-way valve					
	Position function 1-64: A	Single solenoid, mecha	8187057	VUVX-BK10-M52-MZH-F-1T1		
	Position function 1-64: M	Single solenoid, pneum	atic spring return		8187056	VUVX-BK10-M52-A1ZH-F-1T1
	Position function 1-64: J	Double solenoid			8187059	VUVX-BK10-B52-ZH-F-1T1L
4	2x 3/2-way valve					
	Position function 1-64: NS	Normally open, mechanical spring retur	n		8187063	VUVX-BK10-T32U-MZH-F-1T1
	Position function 1-64: K	Normally closed, mechanical spring retur	n		8187061	VUVX-BK10-T32C-MZH-F-1T1
	Position function 1-64: KC	Normally closed, pneumatic spring return	1		8187060	VUVX-BK10-T32C-A1ZH-F-1T
	5/3-way valve					
	Position function 1-64: G	Mid-position closed			8187066	VUVX-BK10-P53C-MZH-F-1T1
/acant position – V	alve size 10 mm					
	Position function 1-64: L	Cover plate for one valve	e position		8163948	VABB-XA-10-T
Manifold sub-base	- For one valve	I	T	1		1
	-	Compatible with valve terminal VTUX-A-P	Maximum number of solenoid coils 1 Maximum number of	Size 1	8188458	VABX-A-P-BV-AH-F
				Size 2	8188462	VABX-A-P-BV-BH-G
				Size 1	8188459	VABX-A-P-BV-AH-A
			solenoid coils 2	Size 2	8188463	VABX-A-P-BV-BH-B
Manifold sub-base	- For four valves, without conne	ection for input module				
	-	Compatible with valve	Maximum number of	Size 1	8188460	VABX-A-P-BV-AH-RVFFFF
		terminal VTUX-A-P	solenoid coils 4	Size 2	8188464	VABX-A-P-BV-BH-RVGGGG
			solenoid coils 8	Size 1	8188461	VABX-A-P-BV-AH-RVAAAA
				Size 2	8188465	VABX-A-P-BV-BH-RVBBBB
100		Compatible with valve		Size 1	8188466	VABX-A-S-BV-AH-RVAAAA
		terminal VTUX-A-S	solenoid coils 8	Size 2	8188467	VABX-A-S-BV-BH-RVBBBB
Manifold sub-base	- For four valves, with connecti	on for input module				
	Sub-base block, additional	Compatible with valve	Maximum number of	Size 1	8196628	VABX-A-S-BV-AH-RV0XJAAAA
	function 1-64: OXJ	terminal VTUX-A-S	solenoid coils 8	Size 2	8196629	VABX-A-S-BV-BH-RV0XJBBBB
Manifold sub-base	for vacuum VB	Compatible with valve	Valve function 2x3/2-	Valve size	8213837	VABX-A-P-VE-VB010H
NACON TRANSPORTED AND ADDRESS OF THE PART	NR.	terminal VTUX-A-P	way, closed, single	10 mm		
		Compatible with valve terminal VTUX-A-S				

Ordering data							
	Code	Description			Pack size	Part no.	Туре
Supply module							
	Connection position type 1-64: U	Manifold sub-base with	'		-	8191788	VABX-A-P-BU-12-SHUH-U
	1-04: 0	ports for ducts 1 and 3/5, terminal VTUX no plate, no cartridge Compatible w			 -	8191789	VABX-A-S-BU-12-SHUH-U
		no place, no cartinage	terminal VTUX-A-S			0191709	VADA-A-3-D0-12-311011-0
Plate							
ridle	Position function 1-64: UD	Plate for ducted exhaust ai	r without cartr	idge for moun	ting on	8191794	VABF-XA-12-M2-QX
8	1 osition function 1 o4. ob	supply module	late for ducted exhaust air, without cartridge, for mounting on upply module				VADI AA 12 III2 QA
	Position function 1-64: US	Exhaust plate, for mounting	g on supply mo	dule		8191741	VABF-XA-12-M1-C
Tie rods	Tie wed	Threaded wall for the continue of the	Annual k	10		0404750	WAME VA 7.40
	Tie rod: –	Threaded rod for tie rod, in spanner size 4	ternal hex,	10 mm	3	8191752	VAME-XA-Z-10
Q A		The threaded rod/screw co	mbination is	12 mm 15 mm	3	8191753 8191754	VAME-XA-Z-12 VAME-XA-Z-16
		selected based on the num		17 mm	3	8191755	VAME-XA-Z-10
		of the individual sub-bases	5.	19 mm	3	8191756	VAME-XA-Z-19
				29 mm	3	8191757	VAME-XA-Z-29
				38 mm	3	8191758	VAME-XA-Z-38
				42 mm	3	8191759	VAME-XA-Z-42
				50 mm	3	8191760	VAME-XA-Z-50
				61 mm	3	8191761	VAME-XA-Z-61
				84 mm	3	8191762	VAME-XA-Z-84
				107 mm	3	8191763	VAME-XA-Z-107
				130 mm	3	8191764	VAME-XA-Z-130
				150 mm	3	8191765	VAME-XA-Z-150
				170 mm	3	8191766	VAME-XA-Z-170
	_	M4 screw with internal hex	cnannorciza	190 mm 30 mm	3	8191767	VAME-XA-Z-190 VAME-XA-S-M4-30
	_	2.5, for tie rod	, spanner size	30 111111	3	8191747	VAME-AA-3-M4-30
		2.5, 101 110 100		45 mm	3	8191748	VAME-XA-S-M4-45
Company							
Separator	_	Separator for pressure zon	e senaration in	duct 1	1	8191736	VABD-XA-12-P1
		Separator for pressure zon	e separation in	duct 1	-	0191730	VADD-XA-12-1 1
I	-	Separator for pressure zon	e separation in	duct 3/5	2	8191737	VABD-XA-12-P2
Wall mounting	-	-					
watt mounting	_	Mounting bracket			1	8191739	VAME-XA-W
		Wall brackets should be mo	ounted on the v	alve terminal	61917.	0171739	Wille Wa-M
		every 20 cm.					
DIN rail mounting							
>. P	Mounting accessories: H	Clamp mounting for DIN ra	il mounting		2	8191782	VAME-XA-H
		The state of the s			_	0272702	
A STATE OF THE STA							
*							

Ordering data	Code	Description			Part no.	Туре
Right end plate	·					
	-	With mounting hole	s for wall mountin	g	8191781	VABX-A-ER-E12-JHTH-XR
Left end plate						
	Electrical connection:	Electrical interface for multi-pin plug	Compatible with valve terminal	Sub-D, 25-pin, Maximum 24 valve coils	8188447	VABX-A-P-EL-E12-MS1-SHUH-XL
	Electrical connection: MS1T	connection, IP40	VTUX-A-P		8206421	VABX-A-P-EL-E12-MS1T-SHUH- XL
	Electrical connection: MS3			Sub-D, 44-pin, Maximum 32 valve coils	8188449	VABX-A-P-EL-E12-MS3-SHUH-XL
	Electrical connection: MF1			Ribbon cable, 26-pin, maximum 24 valve coils	8188451	VABX-A-P-EL-E12-MF1-SHUH-XL
	Electrical connection: MC			Terminal strip, 34-pin, maximum 32 valve coils	8188452	VABX-A-P-EL-E12-MC-SHUH-XL
	Electrical connection: MS6	for multi-pin plug	Compatible with valve terminal	Sub-D, 25-pin, Maximum 24 valve coils	8188448	VABX-A-P-EL-E12-MS6-SHUH-XL
	Electrical connection: MF8	connection, IP65	VTUX-A-P	Sub-D, 44-pin, Maximum 32 valve coils	8188450	VABX-A-P-EL-E12-MS8-SHUH-XL
	Electrical connection: APA	Pneumatic interface for remote I/O system	Compatible with valve terminal VTUX-A-P	Maximum 32 valve coils	8189594	VABX-A-P-EL-E12-APA-SHUH-XL
		CPX-AP-A, IP65	Compatible with valve terminal VTUX-A-S	Maximum 128 valve coils	8189595	VABX-A-S-EL-E12-APA-SHUH-XL
	Electrical connection: API	Pneumatic interface for remote I/O system CPX-AP-I, IP65	Compatible with valve terminal VTUX-A-P	Maximum 32 valve coils	8189592	VABX-A-P-EL-E12-API-SHUH-XL
			Compatible with valve terminal VTUX-A-S	Maximum 128 valve coils	8189593	VABX-A-S-EL-E12-API-SHUH-XL
	Electrical connection:	Node with IO- Link [®] , IP40	Compatible with valve terminal VTUX-A-P	Push-in, maximum 32 valve coils	8189591	VABX-A-P-EL-E12-IOL-SHUH-XL
	Electrical connection:	Node with IO- Link®, IP65	Compatible with valve terminal VTUX-A-P	M12, maximum 32 valve coils	8189590	VABX-A-P-EL-E12-IOS-SHUH-XL
Input module						
	Sub-bases, block additional function 1-64: 04J	Electrical connection terminal	n, spring-loaded	NPN (negative switching)	8196630	VAEM-XA-E-8E-N-K2
***	Sub-bases, block additional function 1-64: 03J			PNP (positive switching)	8196631	VAEM-XA-E-8E-P-K2
	Sub-bases, block additional function 1-64: 02J	Electrical connection, socket M8		NPN (negative switching)	8196632	VAEM-XA-E-8E-N-V
	Sub-bases, block additional function 1-64: 01J			PNP (positive switching)	8196633	VAEM-XA-E-8E-P-V

Ordering data							
	Code	Description				Part no.	Туре
Connecting cable for r	nulti-pin plug con	nection, Sub-D					
	-		raight, open cable end	IP65/IP67	2.5 m	538225	NEBV-S1G25-K-2.5-N-LE25
		25-pin			5 m	538226	NEBV-S1G25-K-5-N-LE25
					10 m	538227	NEBV-S1G25-K-10-N-LE25
				IP40	2.5 m	575417	NEBV-S1G25-K-2.5-N-LE25-S6
					5 m	575418	NEBV-S1G25-K-5-N-LE25-S6
					10 m	575419	NEBV-S1G25-K-10-N-LE25-S6
	_	Socket, 25-pin, ar	igled, open cable end,	IP65/IP67	2.5 m	575423	NEBV-S1WA25-K-2.5-N-LE25-S9
		25-pin			5 m	575424	NEBV-S1WA25-K-5-N-LE25-S9
					10 m	575425	NEBV-S1WA25-K-10-N-LE25-S9
		Socket, 44-pin, ar	igled, open cable end,	1	2.5 m	575420	NEBV-S1WA44-K-2.5-N-LE44-S9
		44-pin			5 m	575421	NEBV-S1WA44-K-5-N-LE44-S9
					10 m	575422	NEBV-S1WA44-K-10-N-LE44-S9
Connecting cable – Ro	und plug			3-pin			
	_				0.5 m	8078282	NEBA-M8G3-U-0.5-N-M8G3
O			2-104, straight socket, M8x1 A-coded to		1 m	8078283	NEBA-M8G3-U-1-N-M8G3
		EN 610/6-2-104	EN 61076-2-104			8078284	NEBA-M8G3-U-1.5-N-M8G3
			[2 m	8078285	NEBA-M8G3-U-2-N-M8G3	
					2.5 m	8078286	NEBA-M8G3-U-2.5-N-M8G3
					5 m	8078287	NEBA-M8G3-U-5-N-M8G3
					10 m	8078288	NEBA-M8G3-U-10-N-M8G3
	_	Straight plug, M8		3-pin	2.5 m	8078270	NEBA-LE3-U-2.5-N-M8G3
		EN 61076-2-104,	open end		5 m	8078271	NEBA-LE3-U-5-N-M8G3
Straight plug, for IO-L	ink®						
Rep	_	Straight plug,	Screw terminal			8162296	NECB-S-M12G5-C2
		M12x1, 5-pin,	M12x1, 5-pin,				
		A-coded					
Connecting cable, for	IO-Link®						
connecting table, lot	_	Suitable for	Straight – angled		5 m	574321	NEBU-M12G5-E-5-Q8N-M12G5
		energy chains	Straight angled		7.5 m	574322	NEBU-M12G5-E-7.5-Q8N-M12G5
		5			10 m	574323	NEBU-M12G5-E-10-Q8N-M12G5
					10111	3/4323	NEBO-M12G3-E-10-Q6N-M12G3
Distributor, for IO-Lin	k [®]						
	_	M12 T-adapter, 5-	pin	171175	FB-TA-M12-5POL		
	-	Y-distributor with	cable on controller side, M	ed	8091516	NEDU-L1R2-M12G5-M12LE-1R	

Valve terminal VTUX

Ordering data							
	Code	Description		Weight	Pack size	Part no.	Туре
				[g]			
Cartridge							
	_	Cartridge 10 mm,	4 mm	0.9	10	8174164	NPQX-D-PC10-Q4-P10
		connection for tubing O.D.	6 mm	0.72	10	8174165	NPQX-D-PC10-Q6-P10
			1/8"	2	10	8184511	NPQX-D-PC10-T18-P10
			5/32"	0.9	10	8184509	NPQX-D-PC10-T532-P10
			1/4"	2.15	10	8184510	NPQX-D-PC10-T14-P10
		Cartridge 12 mm,	4 mm	1.24	10	8174166	NPQX-D-PC12-Q4-P10
		connection for tubing O.D.	6 mm	1.2	10	8174167	NPQX-D-PC12-Q6-P10
			8 mm	0.92	10	8174168	NPQX-D-PC12-Q8-P10
			5/32"	1.24	10	8184512	NPQX-D-PC12-T532-P10
			1/4"	2.6	10	8184514	NPQX-D-PC12-T14-P10
			5/16"	0.92	10	8184513	NPQX-D-PC12-T516-P10
		Cartridge 15 mm,	8 mm	1.9	10	8174169	NPQX-D-PC15-Q8-P10
		connection for tubing O.D.	10 mm	1.64	10	8174170	NPQX-D-PC15-Q10-P10
			12 mm	7.6	10	8174171	NPQX-D-PC19-Q12-P10
			5/16"	1.9	10	8184515	NPQX-D-PC15-T516-P10
			3/8"	10	10	8189810	NPQX-D-PC10-T38-P10
Silencer							
Sitericer	1_	Silencer		0.7	1	8191740	AMTX-P-PC12
	-	Sitericei		0.7	1	8191740	AMIX-F-FC12
Blanking plug							
	_	Cartridge		1	10	8191749	NPQX-P-PC10
				0.8	10	8191750	NPQX-P-PC12
_			1.6	10	8191751	NPQX-P-PC15	
C							
Cover cap	Manualauanida	Course on for manual accomida		Camanalad	10	0100064	VANC VA CC
	Manual override:	Cover cap for manual override		Concealed	10	8198864	VAMC-XA-CS
~	Manual override:	-		Detenting	10	8198865	VAMC-XA-CD
	HR			Detenting	10	6196665	VAIVIC-AA-CD
₩ •		Course con few also trical course the many	.1	-	8	010//25	NEAU AV MO
	IP cover caps pre- assembled:	Cover cap for electrical connections M8:	X1		8	8196625	NEAU-AK-M8
	AK						
	7 413				<u> </u>		
Inscription labels							
	_	Inscription label for marking pressure	Duct 1 se	parated	5	8191742	ASLR-C-XA-TT
		zone separation	Duct 3/5	separated	5	8191743	ASLR-C-XA-TR
			Duct 1, 3	/5 separated	5	8191745	ASLR-C-XA-TS
*	1	Inscription label 6x12.5 mm for insurt	odules.		24	0007174	ASID I V/ 612 D2/0
	_	Inscription label 6x12.5 mm for input m	odules		24	8087174	ASLR-L-X4-612-P240
" O Bridge							