Pneumatic and electric modules of the valve terminal VTUG - the compact platform for your application

Fieldbus systems with CTEU

CANopen
CANopen was originally developed for the automotive industry by a joint venture led by Bosch.
It has been maintained by the organisation CiA (CAN in Automation) since 1995, and at the end of 2002 it was standardised as European standard EN 50325-4.

DeviceNet®
DeviceNet® is an open fieldbus standard that was developed by Rockwell Automation on the basis of the CAN protocol. DeviceNet® is standardised in European standard EN 50325.

CC-LINK®
"Control and Communications Link" (CC-Link) was developed by Mitsubishi Electric and has been available as an open fieldbus network since 1999.

PROFIBUS
Process Field Bus (PROFIBUS) is a fieldbus that was developed by Siemens and has been standardised in the IEC 61158 series of international standards. It enables communication between devices without the need for any specific adaptations to the interface.

EtherCAT®
EtherCAT® is a bus with real-time capability; it was developed by Beckhoff and the EtherCAT Technology Group (ETG).
EtherCAT® is an open technology and has been standardised in international standards IEC 61158 and IEC 61784 and in ISO 15745-4.

AS-Interface
AS-Interface is a manufacturer-independent, simple and sturdy installation system. It was developed and is represented by the AS-International Association, a loose association of a wide range of companies from different sectors.
AS-Interface has been standardised by IEC 620262 and EN 50295.

PROFINET
PROFINET by PROFIBUS and PROFINET International (PI) is the open industrial Ethernet standard for automation and is based on Ethernet TCP/IP and IT standards.
PROFINET technology is developed by Siemens and the PROFIBUS user organisation.
PROFINET is standardised in IEC 61158 and IEC 61784.

EtherNet/IP
EtherNet/IP was developed by Allen-Bradley (Rockwell Automation) and the ODVA (Open DeviceNet Vendor Association). EtherNet/IP is an open standard (technology based on Ethernet TCP/IT and UDP/IP) for industrial networks and is standardised in the IEC 61158 series of international standards.

VARAN
VARAN (Versatile Automation Random Access Network) is a real-time-capable Ethernet bus system that meets the highest requirements when it comes to flexibility and availability.
It is an open bus system developed by Austrian company Sigmatek.

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

Festo installation system CPI

The CPI system is capable of meeting two completely different requirements and resolves the conflict between extensive decentralised modularisation and electrical installation. All CP valve terminals and CP modules are connected using a ready-to-install CP cable, and are attached to the CP interface. Every 4 modules make up an installation string that ends at the CP interface.

Reliable selection of fieldbus modules

Find the right module quickly
+ Reliable selection
+ Easy to order

→ www.festo.com/catalogue/cteu

Easy-to-search Support Portal

Online support
+ Product information
+ User documentation
+ Certificates
+ Software

→ www.festo.com/sp/cteu

Fieldbus nodes and Industrial Ethernet

Type	CTEU-CO	CTEU-DN	CTEU-CC	CTEU-PB	CTEU-PB-EX1C	CTEU-EC	CTEU-AS	CTEU-PN	CTEU-PN-EX1C	CTEU-EP	CTEU-VN	CTEU-CP
Part no.	570038	570039	1544198	570040	8107588	572556	572555	2201471	8107589	2798071	8087559	2149714
Protocol	CANopen	DeviceNet	CC-Link	PROFIBUS		EtherCAT	AS-Interface	PROFINET		EtherNet/IP	VARAN	Festo CP installation system
Connection technology	Sub-D					2x M12x1 socket, D-coded	1x socket (OUT), 1x plug (IN), M12x1, A-coded	2x M12x1 socket, D-coded		2x M12x1 socket, 4-pin, D-coded	2x M12x1 socket, D-coded	M9x0.5 socket, 5-pin
Degree of protection	IP65/IP67											
Inputs [bytes]	8	8	16	16		16	2	64		64	32	4
Outputs [bytes]	8	8	16	16		16	2	64		64	32	4
Other				c UL us - Listed (OL)	For VTUG-VI-EX2E			c UL us - Listed (OL)	For VTUG-VI-EX2E			

The system
- CTEU fieldbus modules for valve terminals
- Festo-specific interface (I-Port)
- Input modules CTSL for detecting sensor signals
- Interface for the Festo installation system CPI
- Direct and easy networking of valve terminals and other devices via a bus connection
- Wide range of applications with high IP65/67 degree of protection
- Universal connection technology (Sub-D, M12, terminal strip)
- Optional decentralised installation of the bus node for connecting two valve terminals
- Basic diagnostics: undervoltage, short circuit

CTEU for the universal use of valve terminals.

The fieldbus modules can be used for different valve terminal types with the Festo-specific, uniformly defined interface (I-Port).
The following protocols are currently supported:
+ CANopen
+ DeviceNet®
+ CC-LINK®
+ PROFIBUS
+ EtherCAT®
+ AS-Interface
+ PROFINET
+ EtherNet/IP
+ VARAN
+ Installation system CPI
+ IO-Link®

Electrical interfaces

Type	VAEM-L1-S-12-AP	VAEM-L1-S-24-AP	VAEM-L1-S-8-PT	VAEM-L1-S-16-PT	VAEM-L1-S-24-PT	VAEM-L1-S-8-PTL	VAEM-L1-S-16-PTL	VAEM-L1-S-24-PTL	VAEM-L1-S-M1-25	VAEM-L1-S-M1-25V1	VAEM-L1-S-M1-25V2	VAEM-L1-S-M1-25V3	VAEM-L1-S-M1-25V4	VAEM-L1-S-M1-44	VAEM-L1-S-24-PTK	VAEM-L1-S-M3-26	VAEM-L1-S-M3-50
Part no.	8081922	8081923	573384	573939	573940	574207	574208	574209	573445	573447	573448	573449	573450	573446	On request:	573452	573451
Connection technology	M8x1, D-coded		M12 port type B						Sub-D 25-pin						Sub-D 44-pin	Flat cable 26-pin	Flat cable 50-pin
Protocol	–		IO-Link®						Parallel								
Electrical interface	–		CANopen, DeviceNet®, PROFIBUS, CC-LINK®, EtherCAT®, AS-Interface, PROFINET, EtherNet/IP, VARAN, Festo installation system CPI						Multi-pin plug								
Valve positions/ solenoid coils	12/24	24/48	8/16	16/32	24/48	8/16	16/32	24/48	Up to 24* - **Note:** a double solenoid valve occupies one valve position and two pins on the multi-pin plug. This means that the number of double solenoid valves per manifold rail is limited.								

Manifold rails

Manifold rails for semi in-line valves, port 2 and 4 on the valve

	Part no.	Type
Size 10		
4 valve positions	573423	VABM-L1-10G-G18-4-GR
5 valve positions	573424	VABM-L1-10G-G18-5-GR
6 valve positions	573425	VABM-L1-10G-G18-6-GR
7 valve positions	573426	VABM-L1-10G-G18-7-GR
8 valve positions	573427	VABM-L1-10G-G18-8-GR
9 valve positions	573428	VABM-L1-10G-G18-9-GR
10 valve positions	573429	VABM-L1-10G-G18-10-GR
12 valve positions	573430	VABM-L1-10G-G18-12-GR
16 valve positions	573431	VABM-L1-10G-G18-16-GR
20 valve positions	573432	VABM-L1-10G-G18-20-GR
24 valve positions	573433	VABM-L1-10G-G18-24-GR
8 double + 8 single solenoid valves	573927	VABM-L1-10G-G18-16-M-GR
4 double + 16 single solenoid valves	573928	VABM-L1-10G-G18-20-M-GR
24 single solenoid valves	573929	VABM-L1-10G-G18-24-M-GR
Size 14		
4 valve positions	573489	VABM-L1-14G-G14-4-GR
5 valve positions	573490	VABM-L1-14G-G14-5-GR
6 valve positions	573491	VABM-L1-14G-G14-6-GR
7 valve positions	573492	VABM-L1-14G-G14-7-GR
8 valve positions	573493	VABM-L1-14G-G14-8-GR
9 valve positions	573494	VABM-L1-14G-G14-9-GR
10 valve positions	573495	VABM-L1-14G-G14-10-GR
12 valve positions	573496	VABM-L1-14G-G14-12-GR
16 valve positions	573497	VABM-L1-14G-G14-16-GR
20 valve positions	573498	VABM-L1-14G-G14-20-GR
24 valve positions	573499	VABM-L1-14G-G14-24-GR
8 double + 8 single solenoid valves	573933	VABM-L1-14G-G14-16-M-GR
4 double + 16 single solenoid valves	573934	VABM-L1-14G-G14-20-M-GR
24 single solenoid valves	573935	VABM-L1-14G-G14-24-M-GR
Size 18		
4 valve positions	8004899	VABM-L1-18G-G38-4-G
5 valve positions	8004900	VABM-L1-18G-G38-5-G
6 valve positions	8004901	VABM-L1-18G-G38-6-G
7 valve positions	8004902	VABM-L1-18G-G38-7-G
8 valve positions	8004903	VABM-L1-18G-G38-8-G
9 valve positions	8004904	VABM-L1-18G-G38-9-G
10 valve positions	8004905	VABM-L1-18G-G38-10-G
12 valve positions	8004906	VABM-L1-18G-G38-12-G
16 valve positions	8004907	VABM-L1-18G-G38-16-G
20 valve positions	8004908	VABM-L1-18G-G38-20-G
24 valve positions	8004909	VABM-L1-18G-G38-24-G
8 double + 8 single solenoid valves	8004910	VABM-L1-18G-G38-16-M-G
4 double + 16 single solenoid valves	8004911	VABM-L1-18G-G38-20-M-G
24 single solenoid valves	8004912	VABM-L1-18G-G38-24-M-G

Manifold rails for sub-base valves, port 2 and 4 at the front

	Part no.	Type
Size 10		
4 valve positions	573434	VABM-L1-10HW-G18-4-GR
5 valve positions	573435	VABM-L1-10HW-G18-5-GR
6 valve positions	573436	VABM-L1-10HW-G18-6-GR
7 valve positions	573437	VABM-L1-10HW-G18-7-GR
8 valve positions	573438	VABM-L1-10HW-G18-8-GR
9 valve positions	573439	VABM-L1-10HW-G18-9-GR
10 valve positions	573440	VABM-L1-10HW-G18-10-GR
12 valve positions	573441	VABM-L1-10HW-G18-12-GR
16 valve positions	573442	VABM-L1-10HW-G18-16-GR
20 valve positions	573443	VABM-L1-10HW-G18-20-GR
24 valve positions	573444	VABM-L1-10HW-G18-24-GR
8 double + 8 single solenoid valves	573930	VABM-L1-10HW-G18-16-M-GR
4 double + 16 single solenoid valves	573931	VABM-L1-10HW-G18-20-M-GR
24 single solenoid valves	573932	VABM-L1-10HW-G18-24-M-GR
Size 14		
4 valve positions	573500	VABM-L1-14W-G14-4-GR
5 valve positions	573501	VABM-L1-14W-G14-5-GR
6 valve positions	573502	VABM-L1-14W-G14-6-GR
7 valve positions	573503	VABM-L1-14W-G14-7-GR
8 valve positions	573504	VABM-L1-14W-G14-8-GR
9 valve positions	573505	VABM-L1-14W-G14-9-GR
10 valve positions	573506	VABM-L1-14W-G14-10-GR
12 valve positions	573507	VABM-L1-14W-G14-12-GR
16 valve positions	573508	VABM-L1-14W-G14-16-GR
20 valve positions	573509	VABM-L1-14W-G14-20-GR
24 valve positions	573510	VABM-L1-14W-G14-24-GR
8 double + 8 single solenoid valves	573936	VABM-L1-14W-G14-16-M-GR
4 double + 16 single solenoid valves	573937	VABM-L1-14W-G14-20-M-GR
24 single solenoid valves	573938	VABM-L1-14W-G14-24-M-GR
Size 18		
4 valve positions	8004913	VABM-L1-18W-G38-4-G
5 valve positions	8004914	VABM-L1-18W-G38-5-G
6 valve positions	8004915	VABM-L1-18W-G38-6-G
7 valve positions	8004916	VABM-L1-18W-G38-7-G
8 valve positions	8004917	VABM-L1-18W-G38-8-G
9 valve positions	8004918	VABM-L1-18W-G38-9-G
10 valve positions	8004919	VABM-L1-18W-G38-10-G
12 valve positions	8004920	VABM-L1-18W-G38-12-G
16 valve positions	8004921	VABM-L1-18W-G38-16-G
20 valve positions	8004922	VABM-L1-18W-G38-20-G
24 valve positions	8004923	VABM-L1-18W-G38-24-G
8 double + 8 single solenoid valves	8004924	VABM-L1-18W-G38-16-M-G
4 double + 16 single solenoid valves	8004925	VABM-L1-18W-G38-20-M-G
24 single solenoid valves	8004926	VABM-L1-18W-G38-24-M-G

Manifold rails for sub-base valves, for control cabinet installation, port 2 and 4 front

		Part no.	Type
Size 10			
Single supply	4 valve positions	8058335	VABM-L1-10HWS1-G18-4-GR
	8 valve positions	8058336	VABM-L1-10HWS1-G18-8-GR
Double supply	8 valve positions	8058338	VABM-L1-10HWS2-G18-8-GR
	12 valve positions	8058339	VABM-L1-10HWS2-G18-12-GR
	16 valve positions	8058340	VABM-L1-10HWS2-G18-16-GR
	24 valve positions	8058341	VABM-L1-10HWS2-G18-24-GR
Size 14			
Single supply	4 valve positions	8058342	VABM-L1-14HWS1-G14-4-GR
	8 valve positions	8058343	VABM-L1-14HWS1-G14-8-GR
Double supply	8 valve positions	8058344	VABM-L1-14HWS2-G14-8-GR
	12 valve positions	8058345	VABM-L1-14HWS2-G14-12-GR
	16 valve positions	8058346	VABM-L1-14HWS2-G14-16-GR
	24 valve positions	8058347	VABM-L1-14HWS2-G14-24-GR

Manifold rail

...for semi in-line valves
The semi in-line valves are supplied with external pilot air.
The pilot air is set via the manifold rail. The scope of delivery of the manifold rail includes a short and a long blanking plug for setting the pilot air.
+ For semi in-line valves M5/M7 (size 10), G1/8 (size 14) and G1/4 (size 18)
+ For 2x 3/2-way, 5/2-way and 5/3-way valves
+ 4 to 24 valve positions including specific electrical links.

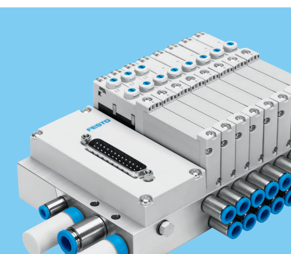
...for sub-base valves
The sub-base valves are supplied with external pilot air.
The pilot air is set via the manifold rail. The scope of delivery of the manifold rail includes a short and a long blanking plug for setting the pilot air.
+ For sub-base valves M5/M7 (size 10), G1/8 (size 14) and G1/4 (size 18)
+ For 3/2-way, 2x 3/2-way, 5/2-way and 5/3-way valves
+ 4 to 24 valve positions with electrical links

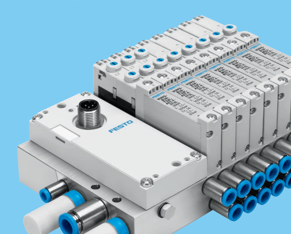
...for long version
I-port interface variant on the side:
For semi in-line valves and sub-base valves, M5/M7 (size 10), G1/8 (size 14) and G1/4 (size 18)

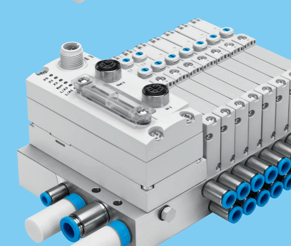
Interlock variant:
The interlock function enables the first 16 solenoid coils to be individually supplied externally.
The external supply guarantees the safety-related enabling of these valves.
For sub-base and semi in-line valves M5/M7 (size 10)

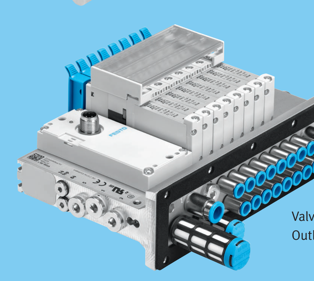
More information on the long version:
→ www.festo.com/catalogue/vtug

ELECTRICS


Valve terminal VTUG with multi-pin plug connection


Valve terminal VTUG with I-Port as the basis for bus nodes (CTEU)


Valve terminal VTUG with I-Port and mounted bus node


Valve terminal VTUG with I-Port for control cabinet installation, Outlet direction front (FD)

The range of capabilities

Innovative
+ Festo-specific I-Port interface for bus nodes (CTEU)
+ IO-Link® mode for direct connection to a higher-level IO-Link master
+ Festo-specific I-Port interface with interlock
+ Variable multi-pin connection by Sub-D or ribbon cable
+ Reversible piston spool valves, up to 24 valve positions
+ Reduced power consumption
+ Excellent price/performance ratio.

Flexible
+ Choice of quick push-in connectors
+ Multiple pressure zones possible
+ Sub-D variant and fieldbus interface degree of protection IP67
+ Internal or external pilot air with the same manifold rail possible by using blanking plugs
+ Sub-base valves with working ports facing downwards for control cabinet installation

Operational safety
+ Sturdy and durable metal components
  - Valves
  - Manifold rails
+ Quick troubleshooting with LED display
+ Manual override:
  - Non-detenting
  - detenting
  - Covered

Easy to assemble
+ Easy assembly with captive screws and seal
+ Easy-to-change connection technology
+ Inscription label holders for labelling

FESTO

ELECTRICS PNEUMATICS

Fig.: Sample valve terminal VTUG

ALTERNATIVE: Compact sintered silencers AMTE★
→ www.festo.com/catalogue/amte

Reliable configuration

The quick way to your VTUG
+ Reliable to configure
+ Easy to order

→ www.festo.com/catalogue/vtug

Easy-to-search Support Portal

Online support
+ Product information
+ User documentation
+ Certificates
+ Software

→ www.festo.com/sp/vtug

Valves

Size	Ports 2 and 4		Order code Start	3/2-way valve, normally closed	3/2-way valve, normally open	3/2-way valve, normally closed	3/2-way valve, normally open	2x 3/2-way valve, normally closed	2x 3/2-way valve, normally open	2x 3/2-way valve, normal position - 1x closed - 1x open	2x 3/2-way valve, normally closed	2x 3/2-way valve, normally open	2x 3/2-way valve, normal position - 1x closed - 1x open	5/2-way valve, single solenoid	5/2-way valve, single solenoid	5/2-way valve, single solenoid	5/2-way valve, double solenoid	5/3-way valve, mid-position closed	5/3-way valve, mid-position pressurised	5/3-way valve, mid-position exhausted
		Configurator order code		VX	VW	VX	VW	K	N	VH	VK	VN	H	M	A	P	J	G	B	E
Semi in-line valves																				
10	M5	Part no.		–	–	–	–	573386	573387	573388	573389	573390	573391	–	573393	573392	573394	573395	573397	573396
		Order code	VUVG-S10...	–	–	–	–	-T32C-AZT-M5-1T1L	-T32U-AZT-M5-1T1L	-T32H-AZT-M5-1T1L	-T32C-MZT-M5-1T1L	-T32U-MZT-M5-1T1L	-T32H-MZT-M5-1T1L	–	'-M52-MZT-M5-1T1L	-M52-RZT-M5-1T1L	-B52-ZT-M5-1T1L	-P53C-ZT-M5-1T1L	-P53U-ZT-M5-1T1L	-P53E-ZT-M5-1T1L
		Pilot air supply		–	–	–	–	External	External	External	External	External	External	–	External	External	External	External	External	External
		Reset method		–	–	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	–	Mechanical spring	Pneumatic/mechanical spring	–	Mechanical spring	Mechanical spring	Mechanical spring
	M7	Part no.		–	–	–	–	573398	573399	573400	573401	573402	573403	–	573405	573404	573406	573407	573409	573408
		Order code	VUVG-S10...	–	–	–	–	-T32C-AZT-M7-1T1L	-T32U-AZT-M7-1T1L	-T32H-AZT-M7-1T1L	-T32C-MZT-M7-1T1L	-T32U-MZT-M7-1T1L	-T32H-MZT-M7-1T1L	–	'-M72-MZT-M7-1T1L	-M72-RZT-M7-1T1L	-B52-ZT-M7-1T1L	-P53C-ZT-M7-1T1L	-P53U-ZT-M7-1T1L	-P53E-ZT-M5-1T1L
		Pilot air supply		–	–	–	–	External	External	External	External	External	External	–	External	External	External	External	External	External
		Reset method		–	–	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	–	Mechanical spring	Pneumatic/mechanical spring	–	Mechanical spring	Mechanical spring	Mechanical spring
14	G1/8	Part no.		–	–	–	–	573464	573465	573466	573467	573468	573469	573470	573471	–	573472	573473	573475	573474
		Order code	VUVG-S14...	–	–	–	–	-T32C-AZT-G18-1T1L	-T32U-AZT-G18-1T1L	-T32H-AZT-G18-1T1L	-T32C-MZT-G18-1T1L	-T32U-MZT-G18-1T1L	-T32H-MZT-G18-1T1L	'-M52-AZT-G18-1T1L	-M52-MZT-G18-1T1L	–	-B52-ZT-G18-1T1L	-P53C-ZT-G18-1T1L	-P53U-ZT-G18-1T1L	-P53E-ZT-G18-1T1L
		Pilot air supply		–	–	–	–	External	External	External	External	External	External	–	External	–	External	External	External	External
		Reset method		–	–	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	Pneumatic spring	Mechanical spring	–	–	Mechanical spring	Mechanical spring	Mechanical spring
18	G1/4	Part no.		–	–	–	–	8004873	8004874	8004875	8004876	8004877	8004878	8004879	8004880	–	8004881	8004882	8004883	8004884
		Order code	VUVG-S18...	–	–	–	–	-T32C-AZT-G14-1T1L	-T32U-AZT-G14-1T1L	-T32H-AZT-G14-1T1L	-T32C-MZT-G14-1T1L	-T32U-MZT-G14-1T1L	-T32H-MZT-G14-1T1L	'-M52-AZT-G14-1T1L	-M52-MZT-G14-1T1L	–	-B52-ZT-G14-1T1L	-P53C-ZT-G14-1T1L	-P53U-ZT-G14-1T1L	-P53E-ZT-G14-1T1L
		Pilot air supply		–	–	–	–	External	External	External	External	External	External	–	External	–	External	External	External	External
		Reset method		–	–	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	Pneumatic spring	Mechanical spring	–	–	Mechanical spring	Mechanical spring	Mechanical spring
Sub-base valves																				
10	M5/M7	Part no.		8028231	8028232	–	–	573410	573411	573412	573413	573414	573415	–	573417	573416	573418	573419	573421	573420
		Order code	VUVG-B10...	Z-M32C-RZT-F-1T1L	Z-M32U-RZT-F-1T1L	–	–	-T32C-AZT-F-1T1L	-T32U-AZT-F-1T1L	-T32H-AZT-F-1T1L	-T32C-MZT-F-1T1L	-T32U-MZT-F-1T1L	-T32H-MZT-F-1T1L	–	-M52-MZT-F-1T1L	-M52-RZT-F-1T1L	-B52-ZT-F-1T1L	-P53C-ZT-F-1T1L	-P53U-ZT-F-1T1L	-P53E-ZT-F-1T1L
		Pilot air supply		External	External	–	–	External	External	External	External	External	External	–	External	External	External	External	External	External
		Reset method		Pneumatic/mechanical spring	Pneumatic/mechanical spring	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	–	Mechanical spring	Pneumatic/mechanical spring	–	Mechanical spring	Mechanical spring	Mechanical spring
14	G1/8	Part no.		8028235	8028236	–	–	573476	573477	573478	573479	573480	573481	573482	573483	–	573484	573485	573487	573486
		Order code	VUVG-B14...	Z-M32C-AZT-F-1T1L	Z-M32U-AZT-F-1T1L	–	–	-T32C-AZT-F-1T1L	-T32U-AZT-F-1T1L	-T32H-AZT-F-1T1L	-T32C-MZT-F-1T1L	-T32U-MZT-F-1T1L	-T32H-MZT-F-1T1L	-M52-AZT-F-1T1L	-M52-MZT-F-1T1L	–	-B52-ZT-F-1T1L	-P53C-ZT-F-1T1L	-P53U-ZT-F-1T1L	-P53E-ZT-F-1T1L
		Pilot air supply		External	External	–	–	External	External	External	External	External	External	External	External	–	External	External	External	External
		Reset method		Pneumatic spring	Pneumatic spring	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	Pneumatic spring	Mechanical spring	–	–	Mechanical spring	Mechanical spring	Mechanical spring
18	G1/4	Part no.		–	–	–	–	8004885	8004886	8004887	8004888	8004889	8004890	–	8004892	8004891	8004893	8004894	8004895	8004896
		Order code	VUVG-B18...	–	–	–	–	-T32C-AZT-F-1T1L	-T32U-AZT-F-1T1L	-T32H-AZT-F-1T1L	-T32C-MZT-F-1T1L	-T32U-MZT-F-1T1L	-T32H-MZT-F-1T1L	–	-M52-MZT-F-1T1L	-M52-RZT-F-1T1L	-B52-ZT-F-1T1L	-P53C-ZT-F-1T1L	-P53U-ZT-F-1T1L	-P53E-ZT-F-1T1L
		Pilot air supply		–	–	–	–	External	External	External	External	External	External	–	External	External	External	External	External	External
		Reset method		–	–	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	–	Mechanical spring	Pneumatic/mechanical spring	–	Mechanical spring	Mechanical spring	Mechanical spring
Sub-base valves EX variants																				
10	M5/M7	Part no.		–	–	8041900	8041901	8041895	8041896	8041897	8041891	8041898	8041899	–	8041892	8041889	8041888	8041890	8041893	8041894
		Order code	VUVG-B10...	–	–	Z-M32C-RZT-F-1T1L-EX2C	Z-M32U-RZT-F-1T1L-EX2C	-T32C-AZT-F-1T1L-EX2C	-T32U-AZT-F-1T1L-EX2C	-T32H-AZT-F-1T1L-EX2C	-T32C-MZT-F-1T1L-EX2C	-T32U-MZT-F-1T1L-EX2C	-T32H-MZT-F-1T1L-EX2C	–	-M52-MZT-F-1T1L-EX2C	-M52-RZT-F-1T1L-EX2C	-B52-ZT-F-1T1L-EX2C	-P53C-ZT-F-1T1L-EX2C	-P53U-ZT-F-1T1L-EX2C	-P53E-ZT-F-1T1L-EX2C
		Pilot air supply		–	–	External	–	External	External	External	External	External	External	–	External	External	External	External	External	External
		Reset method		–	–	Pneumatic/mechanical spring	Pneumatic/mechanical spring	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	–	Mechanical spring	Pneumatic/mechanical spring	–	Mechanical spring	Mechanical spring	Mechanical spring
14	G1/8	Part no.		8041970	8041971	–	–	8041958	8041959	8041960	8041961	8041962	8041963	8041964	8041965	–	8041966	8041967	8041969	8041968
		Order code	VUVG-B14...	Z-M32C-AZT-F-1T1L-EX2C	Z-M32U-AZT-F-1T1L-EX2C	–	–	-T32C-AZT-F-1T1L-EX2C	-T32U-AZT-F-1T1L-EX2C	-T32H-AZT-F-1T1L-EX2C	-T32C-MZT-F-1T1L-EX2C	-T32U-MZT-F-1T1L-EX2C	-T32H-MZT-F-1T1L-EX2C	-M52-AZT-F-1T1L-EX2C	-M52-MZT-F-1T1L-EX2C	–	-B52-ZT-F-1T1L-EX2C	-P53C-ZT-F-1T1L-EX2C	-P53U-ZT-F-1T1L-EX2C	-P53E-ZT-F-1T1L-EX2C
		Pilot air supply		External	External	–	–	External	External	External	External	External	External	External	External	–	External	External	External	External
		Reset method		Pneumatic spring	Pneumatic spring	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	Pneumatic spring	Mechanical spring	–	–	Mechanical spring	Mechanical spring	Mechanical spring
Sub-base valves copper-, zinc-, nickel-free – recommended for production plants for manufacturing Li-ion batteries (F1A)**																				
10	M5/M7	Part no.		–	–	–	–	8150399	8141516	8141517	8141518	8141519	8141520	–	8150460	8150397	8150398	8141521	8141523	8141522
		Order code	VUVG-B10...	–	–	–	–	-T32C-AZT-F-1T1L-F1A	-T32U-AZT-F-1T1L-F1A	-T32H-AZT-F-1T1L-F1A	-T32C-MZT-F-1T1L-F1A	-T32U-MZT-F-1T1L-F1A	-T32H-MZT-F-1T1L-F1A	–	-M52-MZT-F-1T1L-F1A	-M52-RZT-F-1T1L-F1A	-B52-ZT-F-1T1L-F1A	-P53C-ZT-F-1T1 L-F1A	-P53U-ZT-F-1T1L-F1A	-P53E-ZT-F-1T1L-F1A
		Pilot air supply		–	–	–	–	External	External	External	External	External	External	–	External	External	External	External	External	External
		Reset method		–	–	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	–	Mechanical spring	Pneumatic/mechanical spring	–	Mechanical spring	Mechanical spring	Mechanical spring
14	G1/8	Part no.		–	–	–	–	8150402	8141527	8141528	8141529	8141530	8141531	8150400	8150461	–	8150401	8141532	8141534	8141533
		Order code	VUVG-B14...	–	–	–	–	-T32C-AZT-F-1T1L-F1A	-T32U-AZT-F-1T1L-F1A	-T32H-AZT-F-1T1L-F1A	-T32C-MZT-F-1T1L-F1A	-T32U-MZT-F-1T1L-F1A	-T32H-MZT-F-1T1L-F1A	-M52-AZT-F-1T1L-F1A	-M52-MZT-F-1T1L-F1A	–	-B52-ZT-F-1T1L-F1A	-P53C-ZT-F-1T1L-F1A	-P53U-ZT-F-1T1L-F1A	-P53E-ZT-F-1T1L-F1A
		Pilot air supply		–	–	–	–	External	External	External	External	External	External	External	External	–	External	External	External	External
		Reset method		–	–	–	–	Pneumatic spring	Pneumatic spring	Pneumatic spring	Mechanical spring	Mechanical spring	Mechanical spring	Pneumatic spring	Mechanical spring	–	–	Mechanical spring	Mechanical spring	Mechanical spring

**** Suitability for the production of Li-ion batteries:**
Metals with more than 1% by mass of copper, zinc or nickel are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, circuit boards, cables, electrical plug connectors and coils.

Key features

Basic valves VUVG
Sizes 10, 14 and 18
Designed as semi in-line or sub-base valves
Reversible piston spool valves
Up to 24 valve positions

Valve functions

3/2-way valve
+ Single solenoid
+ Normally open
+ Normally closed
+ Pneumatic
+ Pneumatic/mechanical spring

2x 3/2-way valve
+ Single solenoid
+ Normally open
+ Normally closed
+ 1x normally closed, 1x normally open
+ Mechanical spring
+ Pneumatic spring

5/2-way valve
+ Single, double solenoid valve
+ Pneumatic/mechanical spring
+ Mechanical spring
+ Pneumatic spring

5/3-way valve
+ Mid-position pressurised
+ Mid-position exhausted
+ Mid-position closed

Types of valves

Semi in-line valve
The supply ports (1, 3 and 5) for semi in-line valves are connected to the valve by common pneumatic links (e.g. sub-base).
The working ports (2, 4) are on the valve.

Sub-base valve
In the case of sub-base valves, the supply ports (1, 3 and 5) and the working ports (2, 4) are connected to the valve via pneumatic links (e.g. sub-base).
The working ports (2, 4) are located on the sub-base.

PNEUMATICS

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Connecting cables for multi-pin connection

Type	NEBV-S1G25-K-2.5-N-LE25-S6	NEBV-S1G25-K-5-N-LE25-S6	NEBV-S1G25-K-10-N-LE25-S6	NEBV-S1G44-K-2.5-N-LE44-S6	NEBV-S1G44-K-5-N-LE44-S6	NEBV-S1G44-K-10-N-LE44-S6	NEBV-S1WA25-K-2.5-N-LE25-S9	NEBV-S1WA25-K-5-N-LE25-S9	NEBV-S1WA25-K-10-N-LE25-S9	NEBV-S1WA44-K-2.5-N-LE44-S9	NEBV-S1WA44-K-5-N-LE44-S9	NEBV-S1WA44-K-10-N-LE44-S9
Part no.	575417	575418	575419	575113	575114	575115						
Electrical connection	Sub-D socket, straight						Sub-D socket, angled					
Other	25-pin, up to 24 coils, open cable end, 25-core			44-pin, up to 42 coils, open cable end, 44-core			25-pin, up to 24 coils, open cable end, 25-core			44-pin, up to 42 coils, open cable end, 44-core		
Degree of protection	IP40						IP65					

Valve terminal configurator
A valve terminal configurator is available online to help you select a suitable valve terminal.
Select a valve terminal with I-Port interface and order the relevant CTEU bus nodes. The bus nodes then only need to be placed on the valve terminal.
The ident. code for the valve terminals specifies the valve functions, the number of valves, the vacant valve positions as well as the additional functions and the type of compressed air supply.

As is the case with all Festo products, all valve terminals are supplied:
+ Fully pre-assembled
+ Equipped with fittings on request
+ Tested for electrical functionality
+ Tested for pneumatic functionality
+ Securely packaged
+ User documentation can be downloaded free of charge

→ www.festo.com/catalogue/vtug

Plug connector for fieldbus connection

Type	FBS-SUB-9-BU-2x5POL-B	FBS-SUB-9-GS-2x4POL-B	FBS-SUB-9-GS-DP-B	NECU-M-S-D12G4-C2-ET	NEFU-X24F-M12G4	NEFU-X22F-M12G4
Part no.	532219	532220	532216	543109	572226	572225
Electrical connection	9-pin socket, Sub-D, straight	9-pin plug, Sub-D, straight		M12x1 plug, 4-pin, D-coded	4-pin socket, M12x1, A-coded	
Cable fitting	PG9					
Degree of protection	P65/67 (mounted)					
Other					Cable socket with load voltage supply	Cable socket without load voltage supply
Protocol	CANopen, DeviceNet	CC-Link	PROFIBUS	PROFINET, EtherCAT, EtherNet/IP, VARAN	AS-Interface	

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Sensor plug **NEFU** → www.festo.com/catalogue/nefu

HIGHLIGHT: Universal connecting cables NEBU★
→ www.festo.com/catalogue/nebu

Connection technology for IO-Link®

Type	FB-TA-M12-5POL	SEA-M12-5GS-PG7	NEDU-L1R2-M12G5-M12LE-1R
Part no.	171175	175487	8091516
Electrical connection	M12 T-adapter, 5-pin	Straight plug, M12, 5-pin	Y-distributor with cable on controller side, M12x1 A-coded
Other	For IO-Link®and load supply	For T-adapter FB-TA	For IO-Link master with port type A

ELECTRICAL CONNECTION TECHNOLOGY

...for mounting

Type	NRH-35-2000	VAME-T-M4	VAME-T-M4-F1A	VAME-L1-Q
Designation	H-rail	H-rail mounting		Mounting bracket
Part no.	35430	569998	8142649	8154010
Function/note	Length 2 m		For production plants for manufacturing lithium-ion batteries	Mounting bracket, right and left, with screw set for sub-base valve (control cabinet installation). Mounting is possible only with VTUG in size 10 and size 14.
		Use the following screws for mounting: Size 10: DIN 912: M4x30 Size 14: DIN 912: M4x40 Size 18: DIN 912: M5x50		

...for manual override (MO)

Type	VMPA-HBV-B	VMPA-HBT-B	VAMC-L1-CD	ASLR-D-L12
Designation	Cover caps for MO			Identifier support
Part no.	540898	540897	8002234	570818
Function	Covered	Non-detenting	Detenting (without accessories)	Fitted onto the MO

Separators – for creating several pressure zones in the manifold rail

Type	VABD-6-B	VABD-6-B-F1A	VABD-8-B	VABD-8-B-F1A	VABD-10-B	VABD-10-B-F1A	VABD-12-B	VABD-12-B-F1A
Application with...	Sub-base valves		Semi in-line valves		All manifold rails			
Part no.	569994	8145478	569995	8145479	569996	8145480	569997	8145481
Size	10, M5/M7				14		18	
Note		Copper-, zinc-, nickel-free		Copper-, zinc-, nickel-free		Copper-, zinc-, nickel-free		Copper-, zinc-, nickel-free

Supply plates – additional air supply/exhaust via a valve position (connections for ports 1, 3 and 5).

Type	VABF-L1-10-P3A4-M7-T1	VABF-L1-10-P3A4-M7-T1-F1A	VABF-L1-14-P3A4-G18-T1	VABF-L1-14-P3A4-G18-T1-F1A	VABF-L1-18-P3A4-G14-T1
Order code config.	S				
Additionally for...	Port 1, 3 and 5				
Part no.	573924	8141539	573925	8141540	8004898
Size	10		14		18
Note		Copper-, zinc-, nickel-free		Copper-, zinc-, nickel-free	

Hoods

Type	CAFC-X1-GAL-200-Z	CAFC-X1-GAL-300-Z	CAFC-X1-GAL-400-Z	CAFC-X1-GAL-600-Z	CAFC-X1-GAL-600-Z	CAFM-X1-R-200	CAFM-X1-R-300	CAFM-X1-R-400	CAFM-X1-R-500	CAFM-X1-R-600	CAFC-X1-BE
Designation	Hood section including mounting attachments for connecting several hood sections in series					Profile strip for mounting the hood					Mounting kit
Part no.	8127858	8127859	8127860	8127861	8127862	3307385	3307386	3307387	3307388	3307389	572257
Application with...	VTUG-10-4 sections	VTUG-10-8/12-14-4 sections	VTUG-10-16/24-14-8/12 sections	VTUG-14-16 sections	VTUG-14-24 sections						
Length [mm]	200	300	400	600		196	296	396	496	596	

The VTUG-VI-EX2 hood CAFC is a space- and cost-saving alternative to a control cabinet.
+ Impact protection (min. 7 J) for the modules underneath in combination with a suitable mounting plate provided by the user
+ Protection against electrostatic discharge by using electrically conductive materials and the option of connecting an earth wire
+ Protection against disconnection of live plugs (by securing the hood with at least one special fastener in accordance with EN 60079-0, 9.2 and 20)
+ UV protection for the VTUG modules underneath

Cover plates for empty valve positions (reserve position)

Type	VABB-L1-10-T	VABB-L1-10-T-F1A	VABB-L1-14-T	VABB-L1-14-T-F1A	VABB-L1-18-T
Order code config.	L				
Designation	Vacant position				
Part no.	573422	8141537	573488	8141538	8004897
Size	10				14
Note		Copper-, zinc-, nickel-free		Copper-, zinc-, nickel-free	

Connection: Push-in fittings QS★
→ www.festo.com/catalogue/qs

Connection: Standard O.D. tubing PUN★
→ www.festo.com/catalogue/pun

ACCESSORIES

Silencer

Type	AMTE-M-LH-M3	AMTE-M-LH-M5 ★	U-1/8 ★	U-1/4 ★	U-1/4-20 (20 pieces)	UC-M7	UC-1/8	UC-1/4	UC-1/4-20 (20 pcs.)
Version	Sintered metal		Plastic						
Part no.	1231120	120858	2307	2316	534223	161418	161419	165004	534220
Connecting thread	M3	M5	G1/8	G1/4		M7	G1/8	G1/4	
Note			High flow rate			Low flow rate			

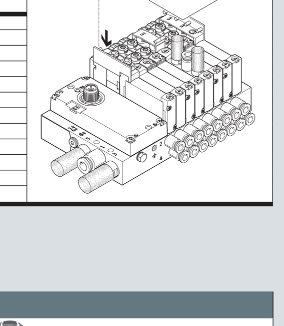
Blanking plug

Type	B-M5-B ★	B-M7 ★	B-1/8 ★	B-1/4 ★	B-M5-F1A	B-M7-F1A	B-1/8-F1A	B-1/4-F1A
Part no.	174308	174309	3568	3569	8142288	8144525	8142289	8142290
Thread	M5	M7	G1/8	G1/4	M5	M7	G1/8	G1/4
Note					Copper-, zinc-, nickel-free			

Inscription label holder – for identifying the valves/valve positions

Type		ASCF-H-L1-10-xxV	ASCF-H-L1-14-xxV	ASCF-H-L1-18-xxV
Size		10	14	18
Valve positions	4	573453	573511	8004928
	5	573454	573512	8004929
	6	573455	573513	8004930
	7	573456	573514	8004931
	8	573457	573515	8004932
	9	573458	573516	8004933
	10	573459	573518	8004934
	12	573460	573519	8004935
	16	573461	573520	8004936
	20	573462	573521	8004937
	24	573463	573522	8004938

(Part no.)



Flow control valves

Type	VFFG-T-M5-5	VFFG-T-M5-6	VFFG-T-M5-7	VFFG-T-M5-8	VFFG-T-M5-10	VFFG-T-M5-12	VFFG-T-M5-15	VFFG-T-F4-5	VFFG-T-F4-6	VFFG-T-F4-7	VFFG-T-F4-8	VFFG-T-F4-10	VFFG-T-F4-12	VFFG-T-F4-15	VFFG-T-F6-7	VFFG-T-F6-8	VFFG-T-F6-10	VFFG-T-F6-11	VFFG-T-F6-14	VFFG-T-F6-16	VFFG-T-F6-18
For manifold rails...	VABM-L1-10... To reduce the flow rate threaded connection M5							VABM-L1-10... To reduce the flow rate for ø 4 mm							VABM-L1-14... To reduce the flow rate for ø 5.8 mm						
Part no.	8025709	8025710	8025711	8025712	8025713	8025714	8025715	8047346	8047347	8047348	8047349	8047350	8047351	8047352	8047353	8047354	8047355	8047356	8047357	8047358	8047359
Nominal width	0.5	0.6	0.7	0.85	1.05	1.2	1.55	0.5	0.6	0.7	0.85	1.05	1.2	1.55	0.7	0.85	1.05	1.15	1.4	1.6	1.8

Semi in-line valve, individual electrical connection: flow control valve can be installed in port 1, 3, 5 and/or in port 2, 4. **Sub-base valve**, individual electrical connection: flow control valve can only be installed in port 2, 4.
The fixed flow restrictor can be used to permanently set the exhaust flow rate in ducts 3 and 5. The fixed flow restrictors are screwed into ducts 3 and 5 in the manifold rail. Please see the relevant assembly instructions.

Flow control set

Type	VFFG-T-M5-A-V1	VFFG-T-F4-A-V1	VFFG-T-F6-A-V1
For manifold rails...	VABM-L1-10...		VABM-L1-14...
Part no.	8025716	8062200	8062201
Note	Two of each size, for M5 threaded connection	Two of each size, for ø 4 mm	Two of each size, for ø 5.8 mm

Check valve

Type	VABF-L1-10H-H2	VABF-L1-14-H2
For manifold rails...	VABM-L1-10...	VABM-L1-14...
Part no.	8047364	8047365
Function	For blocking the flow in the event of back pressure in duct 3 and 5	

Check valves and fixed flow restrictors cannot be used at the same time (in the same duct).

136137 en 2022/08 – errors and omissions excepted