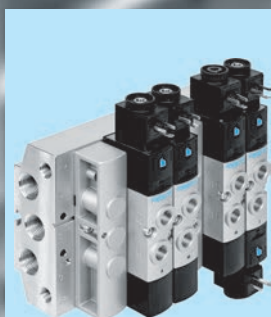


8 Valves

- + Standard directional control valves, universal directional control valves and application-specific directional control valves with electrical or pneumatic actuation
- + Directional control valves with mechanical actuating elements such as stems, rollers, roller levers, swivel levers, whiskers etc.
- + Shut-off valves: check valves, ball valves and shut-off valves, quick exhaust valves, logic valves
- + Pressure regulators
- + Flow control valves: time delay valves, throttle valves, one-way flow control valves
- + Proportional valves
- + Process and media valves with electrical, pneumatic or mechanical actuation





VUVS★

Universal directional control valves

- + Piston spool with sealing cartridge (VUVS-L) or sealing ring (VUVS-LK)
- + Can be used as an individual valve or manifold valve VTUS

→ page 1091



VUVG★

Universal directional control valves

- + Universal valve, sturdy and durable
- + Can be used as an individual valve or manifold valve VTUG

→ page 923



HGL★

Piloted check valves

- + Manually actuated exhaust possible with separate accessory
- + Pneumatically piloted

→ page 1021



VPPM

Proportional pressure regulators

- + Choice of 3 regulator settings (rapid, universal, precise)
- + Display optionally available
- + Also available on valve terminal MPA-S

→ page 1053

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Product overview

Universal directional control valves

				
Type	Solenoid valves, for individual connection VUVG ★	Solenoid valves, plug-in VUVG ★	Pneumatic valves VUWG	Solenoid valves VUVS ★
Type of actuation	Electric	Electric	Pneumatic	Electric
Pneumatic connection 1	G1/4, G1/8, M3, M5, M7		G1/8, G1/4, M3, M5, M7	G1/8, G1/4, G3/8
Pneumatic working port	G1/4, G1/8, M3, M5, M7, QS-1/4, QS-1/8, QS-10, QS-3, QS-3/16, QS-3/8, QS-4, QS-5/16, QS-5/32, QS-6, QS-8, flange	G1/4, G1/8, M5, M7, flange	G1/4, G1/8, M3, M5, M7, QS-1/4, QS-1/8, QS-10, QS-3, QS-3/16, QS-3/8, QS-4, QS-5/16, QS-5/32, QS-6, QS-8	G1/4, G1/8, G3/8, NPT1/4-18, NPT1/8-27, QS-1/4, QS-10, QS-12, QS-3/8, QS-4, QS-5/16, QS-5/32, QS-6, QS-8
Standard nominal flow rate	90 ... 1380 l/min	130 ... 1200 l/min	80 ... 1380 l/min	600 ... 2400 l/min
Valve function	2x3/2-way, single solenoid, closed, 2x3/2-way, single solenoid, open, 2x3/2-way, single solenoid, open/closed, 5/2-way, double solenoid, 5/2-way, single solenoid, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	2x3/2-way, single solenoid, closed, 2x3/2-way, single solenoid open, 2x3/2-way, single solenoid, open/closed, 3/2-way, single solenoid, closed, 3/2-way, single solenoid, open, 5/2-way, double solenoid, 5/2-way, single solenoid, 5/3-way pressurised, 5/3-way exhausted, 5/3-way closed	2x3/2-way, monostable, closed, 2x3/2-way, monostable, open, 2x3/2-way, monostable, open/closed, 5/2-way, bistable, 5/2-way, monostable, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	3/2-way, single solenoid, closed, 3/2-way, single solenoid, open, 5/2-way, double solenoid, 5/2-way, single solenoid, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed
Electrical connection	Plug, via electrical connection box, connection pattern H, horizontal connection, M8x1, A-coded to EN 61076-2-104, 2-pin, 3-pin	Via sub-base		Type B, type C, to EN 175301-803
Description	- Compact universal valve - Connection technology via E-box - High flow rate relative to its size - In-line valves can be used as individual valves or manifold valves	- Sub-base valve - For valve terminal VTUG with plug-in	- Compact universal valve - Pneumatically actuated - High flow rate relative to its size - In-line valves can be used as individual valves or manifold valves - Can be combined with individual electric valves on terminal strip	- Universal valve, sturdy and durable - Low cost, no limitations with regard performance - Can be used as individual valves or manifold valves VTUS
→ Page/online	923	923	vuwg	1091

Universal directional control valves

			
Type	Pneumatic valves VUWS	Solenoid valves VMPA1, VMPA14, VMPA2	Solenoid valves CPE10, CPE14, CPE18, CPE24
Type of actuation	Pneumatic	Electric	Electric, via pilot interface to ISO 15218
Pneumatic connection 1	G1/8, G1/4, G3/8	G1/8, M7	G1/8, G1/4, G3/8, M5, M7, QS-4, QS-6, QS-8, QS-10, QS-12
Pneumatic working port	G1/4, G1/8, G3/8, NPT1/4-18, NPT1/8-27, QS-1/4, QS-10, QS-3/8, QS-4, QS-5/16, QS-5/32, QS-6, QS-8, QS-12	G1/8, M7	G1/8, G1/4, G3/8, M5, M7, QS-4, QS-6, QS-8, QS-10, QS-12
Standard nominal flow rate	600 ... 2400 l/min	160 ... 900 l/min	180 ... 3200 l/min
Valve function	3/2-way, monostable, closed, 3/2-way, monostable, open, 5/2-way, double solenoid, 5/2-way, monostable, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	2x2/2-way, single solenoid, closed, 2x3/2-way, single solenoid, closed, 2x3/2-way, single solenoid, open, 2x3/2-way, single solenoid, open/closed, 3/2-way, single solenoid, closed, 3/2-way, single solenoid, open, 5/2-way, double solenoid, 5/2-way, single solenoid, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	3/2-way, single solenoid, closed, 3/2-way, single solenoid, open, 5/2-way, double solenoid, 5/2-way, single solenoid, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed
Electrical connection		4-pin, M8x1, plug, to EN 60947-5-2	2-pin, 4-pin, type C, M8x1
Description	- Universal valve, sturdy and durable - Pneumatically actuated - Can be used as individual valves or manifold valves VTUS	- For valve terminal MPA - As individual valve mounted on sub-base - Comprehensive valve range	- Universally applicable individual valve - High flow rate relative to its size
→ Page/online	vuws	vmpa1	cpe

Product overview

Universal directional control valves

				
Type	Solenoid valves, pneumatic valves, Tiger 2000 MFH, MVH, JMFH, JMVH, VL, J	Solenoid valves, pneumatic valves, Tiger Classic MFH, MOFH, JMFH, JMFDH, VL/O, VL, JH, JDH	Solenoid valves, pneumatic valves, midi pneumatic MEBH, MOEBH, MEH, MOEH, JMEBH, JMEH, VL, J	Cassette valves C, CJ, CJM, CL, CM
Type of actuation	Electric, pneumatic	Electric, pneumatic	Electric, pneumatic	Pneumatic
Pneumatic connection 1	G1/8, G1/4, G3/8	G1/8, G1/4, G1/2, G3/4, NPT1/8-27	Sub-base, G1/8	Sub-base, G1/4, G1/2
Pneumatic working port	G1/8, G1/4, G3/8	G1/8, G1/4, G1/2, G3/4	Sub-base, G1/8	Sub-base, G1/4, G1/2
Standard nominal flow rate	750 ... 2600 l/min	500 ... 7500 l/min	300 ... 700 l/min	1400 l/min
Valve function	5/2-way, double solenoid/bistable, 5/2-way, single solenoid/monostable, closed, 5/2-way, single solenoid/monostable, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	3/2-way, single solenoid/monostable, closed, 3/2-way, single solenoid/monostable, open, 5/2-way, double solenoid/bistable, 5/2-way, double solenoid/bistable, dominant, 5/2-way, single solenoid/monostable, closed, 5/2-way, single solenoid/monostable, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	3/2-way, single solenoid/monostable, closed, 3/2-way, single solenoid/monostable, open, 5/2-way, double solenoid/bistable, 5/2-way, single solenoid/monostable, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	5/2-way, bistable, 5/2-way, monostable
Electrical connection	Plug pins for plug sockets MSSD-F, KMF; via F solenoid coil, to be ordered separately; V solenoid coil to EN 175301-803 type B	Via F coil, to be ordered separately	Plug, square design to EN 175301-803, type C; plug, square design, connection pattern type C, to industry standard 9.4 mm	
Description	- Sturdy and reliable - Wide range of voltages due to individual coils - Principle with armature guide tube	- Sturdy and reliable - Poppet valve - All-metal version - Principle with armature guide tube	- Sub-base valve, semi in-line valve - Individual mounting or manifold assembly for 2 ... 10 valves - Operating voltage 24 V DC, 110/230 V AC (50 ... 60 Hz)	- Sturdy - Direct mounting on sub-base - With and without manual override
→ Page/online	tiger 2000	tiger classic	mebh	cm

08

Universal directional control valves

			
Type	Solenoid valves supplementary product range JMC, JMF, MC, MCH, MF, MFH, MOCH	Pneumatic valves supplementary product range A, VL	Basic valves LC, LOCB
Type of actuation	Electric		Pneumatic, electric
Pneumatic connection 1	M5, G1/8, G1/4, G1/2	G1/4	G1/8, G1/4
Pneumatic working port	M5, G1/8, G1/4, G1/2	G1/4	
Standard nominal flow rate	46 ... 300 l/min	700 l/min	80 ... 600 l/min
Valve function	2/2-way, single solenoid, closed, 2x3/2-way, single solenoid, closed, 3/2-way, single solenoid, closed, 3/2-way, single solenoid, open, 3x3/2-way, single solenoid, closed, 4/2-way double solenoid, 4/2-way single solenoid	5/2-way, bistable, 5/4-way, closed	3/2-way, directly actuated, 5/4-way, indirectly actuated
Electrical connection	Plug		
Description	- Manifold mounting or individual valve - Especially suited for positioning, for stopping in the event of an emergency stop and for holding double-acting cylinders in any position - With and without manual override	- For actuating cylinders for single stroke and oscillating movements - For positioning, for stopping in the event of an emergency stop and for holding double-acting cylinders in any position - For controlling functions of pneumatic feed units such as feed motions and reciprocal clamping - Actuation either manually by means of switch lever, mechanically by means of control stem or pneumatically	- Screw-in actuator attachments - For positioning, for stopping in the event of an emergency stop and for holding double-acting cylinders in any position
→ Page/online	jmc	vl	lc

Valves

Product overview

Standard directional control valves

Type	 Solenoid valves VSNC	 Solenoid valves with central plug VSVA-R5, VSVA-R2	 Solenoid valves with individual plug VSVA-C1, VSVA-P1	 Solenoid valves, plug-in VSVA-T1
Type of actuation	Electric	Electric	Electric	Electric
Pneumatic connection 1	G1/4, NPT 1/4-18	Sub-base size 1 to ISO 5599-1, size 2 to ISO 5599-1	Sub-base size 18 mm to ISO 15407-1, size 26 mm to ISO 15407-1	Sub-base size 1 to ISO 5599-2, size 2 to ISO 5599-2, size 18 mm to ISO 15407-2, size 26 mm to ISO 15407-2
Standard nominal flow rate	800 ... 1350 l/min	400 ... 2800 l/min	400 ... 1400 l/min	370 ... 2900 l/min
Valve function	5/2-way, double solenoid, 5/2-way or 3/2-way, convertible, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	5/2-way, double solenoid, 5/2-way, double solenoid, dominant, 5/2-way, single solenoid, 5/3-way, closed, 5/3-way, exhausted, 5/3-way, pressurised, 2x3/2-way, single solenoid, closed, 2x3/2-way, single solenoid, open/closed, 2x3/2-way, single solenoid, open	5/2-way, double solenoid, 5/2-way, double solenoid, dominant, 5/2-way, single solenoid, 5/3-way, closed, 5/3-way, exhausted, 5/3-way, pressurised, 2x3/2-way, single solenoid, closed, 2x3/2-way, single solenoid, open/closed, 2x3/2-way, single solenoid, open	5/2-way, single solenoid, 5/2-way, double solenoid, 5/2-way, double solenoid, dominant, 5/3-way, port 2 pressurised, 4 exhausted, 5/3-way, closed, 5/3-way, exhausted, 5/3-way, pressurised 1 to 2, 4 to 5 closed, 5/3-way, pressurised, 2x2/2-way, single solenoid, closed, 2x3/2-way, single solenoid, open, 2x3/2-way, single solenoid, open/closed
Electrical connection	3-pin, type B, to industry standard (11 mm), plug, to EN 175301-803	3-pin, 4-pin, M12x1, M8x1, round design, central plug	Type C, with protective earth conductor, to DIN EN 175301-803, without protective earth conductor	2-pin, 4-pin, to ISO 15407-2, to ISO 5599-2, plug-in, plug
Description	- NAMUR connection pattern to VDE/VDI 3845 - Rotatable seal for 3/2-way or 5/2-way valve - Wide choice of EX solenoid systems - Sturdy and powerful - Extended temperature range - Outstanding value for money - All solenoid coils can be used on an armature tube - The variant VSNC-...FN is more energy efficient through reduced power consumption	- Corresponds to ISO 5599-1 - Electrical connection by central plug - Robust metal housing - Manifold assembly with mixture of sizes possible	- Corresponds to ISO 15407-1 and to ISO 15218 for pilot valve with interface - Electrical connection via type C plug - Robust metal housing - Manifold assembly with mixture of sizes possible	- For valve terminal VTSA/VTSA-F - Robust metal housing
→ Page/online	967	981	981	vsva

Product overview

Standard directional control valves

			
Type	Pneumatic valves, to ISO 15407-1 VSPA	Solenoid valves, to ISO 5599-1 MN1H, MFH, MDH, MEBH, JMN1DH, JMFH, JMFHDH, JMDH, JMEBH, JMEBDH, JMDDH	Pneumatic valves, to ISO 5599-1 VL, J, JD
Type of actuation	Pneumatic	Electric	Pneumatic
Pneumatic connection 1	Sub-base size 18 mm to ISO 15407-1, size 26 mm to ISO 15407-1	Sub-base size 1 to ISO 5599-1, size 2 to ISO 5599-1, size 3 to ISO 5599-1, size 4 to ISO 5599-1	Sub-base size 1 to ISO 5599-1, size 2 to ISO 5599-1, size 3 to ISO 5599-1, size 4 to ISO 5599-1
Standard nominal flow rate	400 ... 1100 l/min	1200 ... 6000 l/min	1200 ... 6000 l/min
Valve function	2x3/2-way, monostable, closed, 2x3/2-way, monostable, open, 2x3/2-way, monostable, open/closed, 5/2-way, bistable, 5/2-way, bistable, dominant, 5/2-way, monostable, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	5/2-way, double solenoid, 5/2-way, double solenoid, dominant, 5/2-way, single solenoid, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed	5/2-way, bistable, 5/2-way, bistable, dominant, 5/2-way, monostable, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed
Electrical connection		M12x1, central plug, via F coil, to be ordered separately, via N1 coil, to be ordered separately, round design, to DIN EN 175301-803	
Description	- Conforms to ISO 15407-1 - Pneumatic actuation - Manifold assembly with mixture of sizes possible	- Conforms to ISO 5599-1 - Robust metal housing - Manifold assembly with mixture of ISO sizes 1, 2, 3 possible - Extensive range of electrical connection options - Wide range of vertical stacking modules: pressure regulator, flow control valve, vertical pressure shut-off plate, etc. - Also available as a valve terminal	- Conforms to ISO 5599-1 - Pneumatic actuation
→ Page/online	981	999	iso 5599-1

Standard directional control valves

		
Type	Standards-based valves to ISO 15218 (CNOMO) MDH, MGXDH, MGXIAH, VSCS	Solenoid valves, as per NAMUR (VDI/VDE 3845) NVF3
Type of actuation	Electric	Electric
Pneumatic connection 1	Sub-base	G1/4
Standard nominal flow rate	13.5 ... 50 l/min	900 l/min
Valve function	3/2-way, single solenoid, closed	5/2-way or 3/2-way, single solenoid
Electrical connection	Type A, type C, M12x1, to DIN EN 175301-803, to IEC 61076-2-101	Plug, 3-pin or cable, 3-wire
Description	- CNOMO connection pattern, to ISO 15218 - With and without manual override	- NAMUR connection pattern as per VDI/VDE 3845 - Electrically actuated, piloted - Mechanical spring return - Explosion protection to ATEX - Can be converted from 5/2-way to 3/2-way function
→ Page/online	iso 15218	namur

Product overview

Application-specific directional control valves

Type	Control blocks VOFA	Solenoid valves VOFD	Solenoid valves VOFC	Solenoid valves VOVG
Design	Piston spool	Directly actuated poppet valve	Soft-switching piston valve, piloted piston poppet valve	Piston spool
Valve function	3/2-way, single solenoid, closed, 5/2-way, single solenoid	3/2-way, single solenoid, closed	3/2-way, single solenoid, closed, 5/2-way, double solenoid, 5/2-way, single solenoid	3/2-way, single solenoid, closed, 3/2-way, single solenoid, open, 5/2-way, single solenoid
Operating pressure	3 ... 10 bar	0 ... 12 bar	0 ... 8 bar	-0.9 ... 8 bar
Ambient temperature	-5 ... 50°C	-25 ... 60°C	-25 ... 60°C	-5 ... 50°C
Pneumatic connection 1	G1/4	G1/4, M5, NPT1/4-18, NAMUR connection pattern	G1/2, G1/4, M5, NPT1/4-18, NAMUR connection pattern	Sub-base, M5, M7
Standard nominal flow rate	950 ... 1050 l/min	49 ... 1888 l/min	766 ... 2686 l/min	180 ... 200 l/min
Description	- Redundantly constructed valve block, can be used for safe reversing of a hazardous movement - Can be selected as a decentralised individual connection variant with electrical and pneumatic individual connection or as a feature integrated in the valve terminal VTSA/VTSA-F - Equipped with valves VSVA - Switching position sensing by sensors - Safety device as per EU Directive 2006/42/EC (Machinery) - Can be used as a press safety valve to EN 692	- Suitable for process automation, for applications in the chemical and petrochemical industries - Suitable for outdoor use under harsh ambient conditions - Especially suitable for quarter turn actuators thanks to flange pattern as per NAMUR - Variants with TÜV approval up to SIL4 to IEC 61508	- Suitable for process automation, for applications in the chemical and petrochemical industries - Suitable for outdoor use under harsh ambient conditions - Especially suitable for quarter turn actuators thanks to flange pattern as per NAMUR - Valve can switch between internal and external pilot air - Variants with TÜV approval up to SIL3 to IEC 61508	- Very compact valve for solutions with extremely high component density - Suitable for applications in the electronics and light assembly industry - In-line, semi in-line and sub-base valve - Manifold rail for 2 ... 10 valves
→ Page/online	vofa	vofd	vofc	vovg

Application-specific directional control valves

Type	Solenoid valves MHA1, MHP1	Solenoid valves MHE2, MHP2, MHA2, MHE3, MHP3, MHA3, MHE4, MHP4, MHA4	Solenoid valves CDVI5.0
Design	Poppet valve with spring return	Pressure-relieved poppet valve	Piston spool
Valve function	2/2-way, single solenoid, closed, 2x2/2-way, single solenoid, closed, 3/2-way, single solenoid, closed, 3/2-way, single solenoid, open	3/2-way, single solenoid, closed, 3/2-way, single solenoid, open, 5/2-way, single solenoid	2/2-way, single solenoid, closed, 2/2-way, single solenoid, open, 2x3/2-way, single solenoid, closed, 2x3/2-way, single solenoid, open, 3/2-way, single solenoid, closed, 3/2-way, single solenoid, open, 5/2-way, double solenoid, 5/2-way, single solenoid, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed
Operating pressure	-0.9 ... 8 bar	-0.9 ... 8 bar	-0.9 ... 10 bar
Ambient temperature	-5 ... 50°C	-5 ... 60°C	-5 ... 50°C
Pneumatic connection 1	Sub-base, QS3, QS4, prepared for QSP10	Sub-base, G1/4, G1/8, M7, QS4, QS6, QS8	Sub-base
Standard nominal flow rate	10 ... 30 l/min	90 ... 400 l/min	300 ... 650 l/min
Description	- Directly actuated poppet valve - Miniature valve: grid dimension 10 mm - Switching times down to 4 ms - Sub-base valve - Manifold block for 2 ... 10 valves - Use as pilot valve - UL approval; same connections and cables as with VUVG	- Directly actuated poppet valve - Fast-switching valve: switching times down to 2 ms - Direct mounting, individual sub-base, manifold assembly - Manifold block for 2 ... 10 valves	- Sub-base valve in clean design - Easy-to-clean design - Individual valve for clean design - Can be used in the food zone (based on standard EN 1672-2)
→ Page/online	mh1	mh2	cdvi5.0

Application-specific directional control valves

		
Type	Fast-switching valves MHJ9, MHJ10	Pneumatic and solenoid valves, M5 Compact System J, JD, JMFH, MFH, MUFH, VD, VL/O, VL, VLL
Design	Poppet valve without spring return	Piston valve, disc seat valve
Valve function	2/2-way, single solenoid, closed	3/2-way, bistable/double solenoid, 3/2-way, monostable/single solenoid, closed, 3/2-way, monostable/single solenoid, open, 5/2-way, bistable/double solenoid, 5/2-way, bistable/double solenoid, dominant, 5/2-way, monostable/single solenoid
Operating pressure	0.5 ... 8 bar	-0.9 ... 8 bar
Ambient temperature	-5 ... 60°C	-10 ... 60°C
Pneumatic connection 1	Sub-base, QS-4, QS-6	PK-3
Standard nominal flow rate	50 ... 160 l/min	50 ... 105 l/min
Description	- Directly actuated poppet valve - Individual valve with integrated QS fitting - Switching frequencies up to 1000 Hz - Service life > 5 billion switching cycles - Very good reproducibility - Use: high-speed sorting with blow-out function	- Control elements with all functions for pneumatic sequence controls - For control cabinet installation - Fast replacement of components
→ Page/online	mhj9	m5 compact

08

Manually actuated directional control valves: swivel lever valves

			
Type	Hand lever valves VHEF-HS	Hand lever valves VHER	Hand lever valves H-3-1/4-B, H-5-1/4-B
Valve function	3/2-way, bistable, 3/2-way, bistable, open/closed, 5/2-way, bistable, 5/2-way, monostable, 5/3-way exhausted, 5/3-way closed	4/3-way, exhausted, 4/3-way, closed, 4/3-way, pressurised	3/2-way, bistable, 5/2-way, bistable
Type of control	Direct	Direct	Direct
Standard nominal flow rate	530 ... 1200 l/min	170 ... 3800 l/min	550 ... 600 l/min
Pneumatic working port	G1/8, G1/4	G1/8, G1/4, G1/2, M5	G1/4
Operating pressure	-0.95 ... 10 bar	0 ... 10 bar	-0.95 ... 10 bar
NEW	New series		
Description	- With hand lever on the side - Sturdy design	- Lever in metal or polymer design - Front panel mounting, through or mounting holes	Die-cast aluminium design
→ Page/online	vh ef-hs	vher	n_v14

Valves

Manually actuated directional control valves: pushbutton valves

			
Type	Pushbutton valves VHEM-P	Pushbutton valves K/O-3-PK	Pushbutton valves K-3-M5
Valve function	5/2-way, bistable, 5/2-way, monostable, 3/2-way, monostable, closed, 3/2-way, monostable, open	3/2-way, monostable, open/closed	3/2-way, monostable, closed
Type of control	Direct, piloted	Direct	Direct
Standard nominal flow rate	500 ... 1000 l/min	80 l/min	80 l/min
Pneumatic working port	G1/8, G1/4	PK-3	M5
Operating pressure	-0.95 ... 10 bar	0 ... 8 bar	-0.95 ... 8 bar
Description	- With button switch - Reverse operation possible	- With button switch - Polymer design - Ducted exhaust air	- With button switch - Suitable for vacuum operation - Sturdy die-cast zinc design
→ Page/online	vh em-p	n_vp k	k-3

Product overview

Manually actuated directional control valves: pushbutton valves

		
Type	Pushbutton valves T-5/3-1/4	Pushbutton valves F-3-M5
Valve function	5/3-way, closed	3/2-way, monostable, closed
Type of control	Piloted	Direct
Standard nominal flow rate	680 l/min	80 l/min
Pneumatic working port	G1/4	M5
Operating pressure	2 ... 10 bar	-0.95 ... 8 bar
Description	- With pushbutton - For positioning, for stopping in the event of an emergency stop and for holding a double-acting cylinder in any position - Aluminium design	- With pedal - Suitable for vacuum operation - Sturdy die-cast zinc design
→ Page/online	n_msv	f-3-m5

Manually actuated directional control valves: finger lever valves

				
Type	Finger lever valves VHEF-L	Finger lever valves TH/O-3-PK-3	Finger lever valves TH-3-M5, TH-3-1/4-B, TH-5-1/4-B, THO-3-1/4-B	Finger lever valves H-4/3-M5
Valve function	3/2-way, monostable, closed, 3/2-way, monostable, open, 5/2-way, monostable	3/2-way, monostable, open/closed	3/2-way, monostable, closed, 3/2-way, monostable, open, 5/2-way, monostable	4/3-way, exhausted
Type of control	Direct	Direct	Direct	Piloted
Standard nominal flow rate	750 ... 1200 l/min	80 l/min	80 ... 600 l/min	125 l/min
Pneumatic working port	G1/8, G1/4	PK-3	G1/4, M5	M5
Operating pressure	-0.95 ... 10 bar	0 ... 8 bar	-0.95 ... 10 bar	0 ... 8 bar
Description	- With finger lever - Sturdy design	- With finger lever - Polymer design - Ducted exhaust air	- With finger lever - Die-cast zinc or die-cast aluminium design	- With detenting finger lever - Front panel mounting or mounting on sub-base - Aluminium design
→ Page/online	vh ef-l	n_vpk	th-3-m5	h-4

Manually actuated directional control valves: toggle lever valves

		
Type	Toggle lever valves KH/O-3-PK-3	Toggle lever valves H-5/3-1/4
Valve function	3/2-way, monostable, open/closed	5/3-way, closed
Type of control	Direct	Piloted
Standard nominal flow rate	80 l/min	680 l/min
Pneumatic working port	PK-3	G1/4
Operating pressure	0 ... 8 bar	2 ... 10 bar
Description	- With toggle lever - Polymer design - Ducted exhaust air	- With toggle lever - For positioning, for stopping in the event of an emergency stop and for holding double-acting cylinders in any position - Aluminium design
→ Page/online	n_vpk	n_msv

Manually actuated directional control valves: foot valves

		
Type	Foot valves F-3-1/4-B, FO-3-1/4-B, F-5-1/4-B	Foot valves with detent FP-3-1/4-B, FPB-3-1/4, FP-5-1/4-B
Valve function	3/2-way, monostable, closed, 3/2-way, monostable, open, 5/2-way, monostable	3/2-way, bistable, 5/2-way, bistable
Type of control	Direct	Direct
Standard nominal flow rate	550 ... 600 l/min	550 ... 600 l/min
Pneumatic working port	G1/4	G1/4
Operating pressure	-0.95 ... 10 bar	-0.95 ... 10 bar
Description	- With foot pedal - Sturdy die-cast zinc design	- With foot pedal with detent - Sturdy die-cast zinc design
→ Page/online	fo-3	fpb-3

Manually operated directional control valves: selector switches

		
Type	Selector valves VHEF-ES	Selector switches HW-6-38
Valve function	3/2-way, bistable, 3/2-way, monostable, open/closed, 5/2-way, bistable, 5/2-way, monostable, 5/3-way exhausted, 5/3-way closed	8/6-way, bistable
Type of control	Direct	Direct
Standard nominal flow rate	530 ... 1200 l/min	180 l/min
Pneumatic working port	G1/4, G1/8	M5
Operating pressure	-0.95 ... 10 bar	0 ... 8 bar
NEW	New series	
Description	- With selector switch on the side - Sturdy design	- With rotary knob and arrow - Front panel mounting or mounting on sub-base - With six switching positions
→ Page/online	vh ef-es	hw-6

Manually operated directional control valves: front panel valves

			
Type	Front panel valves SV/O-3-PK-3x2	Front panel valves SVS-3-1/8, SVS-4-1/8, SVS0-3-1/8	Front panel valves SV-3-M5, SV-5-M5-B
Valve function	2x3/2-way, monostable, closed	3/2-way, monostable, closed, 3/2-way, monostable, open, 4/2-way, monostable	3/2-way, monostable, closed, 5/2-way, monostable
Type of control	Direct	Direct, piloted	Direct
Standard nominal flow rate	70 l/min	120 l/min	65 ... 95 l/min
Pneumatic working port	PK-3	G1/8	M5
Operating pressure	0 ... 8 bar	3.5 ... 8 bar	-0.95 ... 8 bar
Description	- For actuator attachments such as toggle and selector switches - Reliable coupling system for rapid assembly and dismantling - Polymer design	- For actuator attachments such as pushbutton actuators, mushroom pushbuttons, mushroom actuators, selector switches, toggle levers, key actuators - Reliable coupling system for rapid assembly and dismantling	- For actuator attachments such as pushbutton actuators, mushroom pushbuttons, mushroom pushbuttons with detent, selector switches or toggle levers - Reliable coupling system for rapid assembly and dismantling - Polymer design
→ Page/online	sv	svs	sv-3

Product overview

Mechanically operated directional control valves: stem actuated valves

				
Type	Stem actuated valves VMEF-S	Stem actuated valves V/O-3-PK-3, V/O-3-1/8	Stem actuated micro valves S-3-PK-3-B, SO-3-PK-3-B	Stem actuated valves VS-3-1/8, VS-4-1/8, VOS-3-1/8
Valve function	3/2-way, monostable, closed, 5/2-way, monostable	3/2-way, monostable, open/closed	3/2-way, monostable, closed, 3/2-way, monostable, open	3/2-way, monostable, closed, 3/2-way, monostable, open, 4/2-way, monostable
Type of control	Direct, piloted	Direct	Direct	Piloted
Standard nominal flow rate	750 ... 1200 l/min	80 ... 140 l/min	60 l/min	140 ... 161 l/min
Pneumatic working port	G1/8, G1/4	PK-3, G1/8	PK-3	G1/8
Operating pressure	-0.95 ... 10 bar	-0.95 ... 8 bar	-0.95 ... 8 bar	3.5 ... 8 bar
Description	- Small and compact for a wide range of pneumatic applications - High pneumatic performance for a wide range of tasks - Light weight - Low actuating forces	- Through-holes in housing - Polymer or aluminium design	- Dimensions according to DIN 41635, type A - Polymer design - Various actuator attachments	- Aluminium design - Minimal actuating force with pilot control
→ Page/online	vmef-s	n_v18	s-3-pk	vos

Mechanically operated directional control valves: stem actuated valves

			
Type	Stem actuated valves V-3-1/4-B, V-5-1/4-B, VO-3-1/4-B	Limit switches with push-in connector SDK-3-PK-3, SDK-4-PK-3	Limit stop signal generators with push-in connector SDV-2-B, SDV-3
Valve function	3/2-way, monostable, closed, 3/2-way, monostable, open, 5/2-way, monostable	3/2-way, monostable, closed	3/2-way, monostable, closed
Type of control	Direct	Direct	Direct
Standard nominal flow rate	550 ... 600 l/min	16 l/min	8 ... 16 l/min
Pneumatic working port	G1/4	PK-3	PK-3
Operating pressure	-0.95 ... 10 bar	0 ... 8 bar	0 ... 8 bar
Description	Die-cast aluminium design	- For end-position sensing and position control - High accuracy - Stainless steel design	- For end-position sensing and position control - High precision and low actuating forces - Sturdy design
→ Page/online	vo-3	sdk	sdv

Mechanically operated directional control valves: roller lever valves

				
Type	Roller lever valves VMEF-R	Roller lever valves R/O-3-PK-3	Roller lever valves RS-3-1/8, RS-4-1/8, ROS-3-1/8	Roller lever valves R-3-M5, R-3-1/4-B, R-5-1/4-B, RO-3-1/4-B
Valve function	3/2-way, monostable, 5/2-way, monostable	3/2-way, monostable, open/closed	3/2-way, monostable, closed, 3/2-way, monostable, open, 4/2-way, monostable	3/2-way, monostable, closed, 3/2-way, monostable, open, 5/2-way, monostable
Type of control	Direct	Direct	Piloted	Direct
Standard nominal flow rate	750 ... 1200 l/min	80 l/min	128 ... 169 l/min	80 ... 600 l/min
Pneumatic working port	G1/8, G1/4	PK-3	G1/8	G1/4, M5
Operating pressure	-0.95 ... 10 bar	0 ... 8 bar	3.5 ... 8 bar	-0.95 ... 10 bar
Description	- Small and compact for a wide range of pneumatic applications - High pneumatic performance for a wide range of tasks - Light weight - Low actuating forces	- With roller lever - Polymer design - Ducted exhaust air	- With roller lever - Aluminium design - Minimal actuating force with pilot control	- With roller lever - Die-cast aluminium design
→ Page/online	vmef-r	n_vp	ros-3	ro-3

Mechanically operated directional control valves: roller lever valves

				
Type	Roller lever valves VMEF-K	Roller lever valves L/O-3-PK-3	Roller lever valves LS-3-1/8, LS-4-1/8, LOS-3-1/8	Roller lever valves L-3-M5, L-3-1/4-B, L-4-1/4-B, LO-3-1/4-B
Valve function	3/2-way, monostable, 5/2-way, monostable	3/2-way, monostable, open/closed	3/2-way, monostable, closed, 3/2-way, monostable, open, 4/2-way, monostable	3/2-way, monostable, closed, 3/2-way, monostable, open, 5/2-way, monostable
Type of control	Direct	Direct	Piloted	Direct
Standard nominal flow rate	750 ... 1200 l/min	80 l/min	128 ... 175 l/min	80 ... 600 l/min
Pneumatic working port	G1/8, G1/4	PK-3	G1/8	G1/4, M5
Operating pressure	-0.95 ... 10 bar	0 ... 8 bar	3.5 ... 8 bar	-0.95 ... 10 bar
Description	• Small and compact for a wide range of pneumatic applications • High pneumatic performance for a wide range of tasks • Light weight • Low actuating forces	• With roller lever with idle return • Polymer design • Ducted exhaust air	• With toggle lever • Aluminium design • Minimal actuating force with pilot control	• With roller lever • Die-cast aluminium design
→ Page/online	vmef-k	n_vpk	los-3	lo-3

Mechanically operated directional control valves: swivel lever valves

			
Type	Swivel lever valves RW/O-3-1/8	Pneumatic limit valves RWN/O-3-1/8-B	Swivel lever valves RW-3-M5
Valve function	3/2-way, monostable, open/closed	3/2-way, monostable, open/closed	3/2-way, monostable, closed
Type of control	Direct	Direct	Direct
Standard nominal flow rate	140 l/min	120 l/min	80 l/min
Pneumatic working port	G1/8	G1/8	M5
Operating pressure	-0.95 ... 8 bar	-0.95 ... 8 bar	-0.95 ... 8 bar
Description	• Basic valve for actuator attachments such as swivel lever short, long, swivel lever rod • Aluminium design	• Directly actuated in one direction • Aluminium design	• With swivel lever • Sturdy die-cast zinc design • Various actuator attachments
→ Page/online	rw	rwn	rw-3

Mechanically operated directional control valves: whisker valves

	
Type	Whisker valves FVS-3-1/8, FVSO-3-1/8
Valve function	3/2-way, monostable, closed, 3/2-way, monostable, open
Type of control	Piloted
Standard nominal flow rate	146 ... 175 l/min
Pneumatic working port	G1/8
Operating pressure	3.5 ... 8 bar
Description	• With whisker • For sensing dissimilar workpieces or workpieces not precisely in position • Aluminium design • Minimal actuating force with pilot control
→ Page/online	fvs-3

Product overview

Check valves and quick exhaust valves

			
Type	Check valves, piloted HGL	★ Check valves, piloted VBNF	Quick exhaust valves VBQF
Pneumatic connection 1	G1/8, G1/4, G3/8, G1/2, M5, QS-4, QS-6, QS-8, QS-10, QS-12	QS-6, QS-8	G1/8, G1/4, QS-6, QS-8
Standard nominal flow rate			
Standard flow rate exhaust 6->0 bar			1300 ... 2500 l/min
Standard nominal flow rate pressurisation 6->5 bar			350 ... 960 l/min
Standard nominal flow rate 1->2 from 6 to 5 bar	130 ... 1600 l/min	260 ... 620 l/min	
Operating pressure	0.5 ... 10 bar		0.2 ... 10 bar
Operating pressure for entire temperature range		0.2 ... 10 bar	
Description	- Valve function: piloted non-return function - Pneumatically piloted - Screw-in with male thread - Pilot air connection: M5, G1/8, G1/4, G3/8, QS-4 - Manually actuated exhaust possible with separate accessory	- Minimal height - High flow rate - Can be rotated horizontally through 360° in assembled state - Manually actuated exhaust possible	- Minimal height - High flow rate - Reduced noise emission - Available with and without silencer - Available with ducted or unducted exhaust air - For higher cycle times
→ Page/online	1021	vbnf	vbqf

Check valves and quick exhaust valves

			
Type	Check valves H, HA, HB	Manual overrides HAB	Quick exhaust valves SE, SEU
Pneumatic connection 1	G1/8, G1/4, G3/8, G1/2, G3/4, M5, QS-4, QS-6, QS-8, QS-10, QS-12, R1/8, R1/4, R3/8, R1/2	G1/8, G1/4, G3/8, G1/2	G1/8, G1/4, G3/8, G1/2, G3/4
Standard nominal flow rate	115 ... 2230 l/min		
Standard flow rate exhaust 6->0 bar		165 l/min	1000 ... 6500 l/min
Standard nominal flow rate pressurisation 6->5 bar			300 ... 4560 l/min
Standard nominal flow rate 1->2 from 6 to 5 bar	1000 ... 5900 l/min		
Operating pressure	-1 ... 12 bar	0 ... 10 bar	0.2 ... 10 bar
Operating pressure for entire temperature range			
Description	- Valve function: non-return - Screw-in or in-line installation - With connecting thread at both ends, push-in connector at both ends, thread/push-in connector	- Valve function: exhaust component - For check valve HGL - For manual exhausting air trapped in a cylinder	- Valve function: quick exhaust - Shut-off valve, piloted - Screw-in - With or without silencer
→ Page/online	h-qs	hab	se

Product overview

Ball valves and shut-off valves

			
Type	Hand slide valves VBOH	Shut-off valves HE	Ball valves QH, QHS
Valve function	3/2-way, bistable	2/2-way, bistable, 3/2-way, bistable	2/2-way, bistable
Pneumatic connection 1	G1/8, G1/4, G1/2, G3/8, G3/4, M5	QS-6, QS-8, QS-10, QS-12, R1/8, R1/4, R3/8, R1/2	G1/4, G3/8, G1/2, G3/4, G1, G1 1/2, QS-4, QS-6, R1/8
Standard nominal flow rate	236 ... 7691 l/min	270 ... 840 l/min	148 ... 84,000 l/min
Operating pressure	-0.95 ... 12 bar	-0.95 ... 10 bar	-1 ... 10 bar
Description	- Used as a shut-off function for pressurising and exhausting compressed air systems, for example, upstream of service unit combinations, for air guns and also for exhausting pneumatic cylinders - Non-overlapping, so no pressure losses when switching - Minimal installation	- Shut-off valve, manually actuated - Connection: thread at both ends, push-in connector at both ends, thread/push-in connector - Various mounting variants	- Shut-off valve, manually actuated - In-line installation, can be screwed in, bulkhead fitting - Variants: thread at both ends, push-in connector at both ends, thread/push-in connector
→ Page/online	1021	1021	1021

Logic valves

				
Type	OR gates OS	Amplifier modules VK	NOT modules VLO	AND- modules ZK
Valve function	OR function			AND function
Pneumatic connection 1	G1/2, G1/4, G1/8, PK-3, PK-4	M5	M5	G1/8, PK-3, PK-4
Standard nominal flow rate	100 ... 5000 l/min	80 l/min	80 l/min	100 ... 550 l/min
Operating pressure	0.001 ... 10 bar	0.001 ... 6 bar	0.001 ... 6 bar	0.001 ... 10 bar
Description	- Pneumatic control system - Mounting via through-holes	For pneumatic sensors	For pneumatic sensors	- Dual-pressure valve - Connects two input signals in the AND function - Mounting via through-holes
→ Page/online	os	vk	vlo	zk

Pressure regulators

		
Type	Pressure regulators LR-QS, LRMA-QS	Differential pressure regulators LRL, LRLl
Pressure regulation range	1 ... 8 bar	2 ... 6 bar
Standard nominal flow rate	22 ... 150 l/min	
Nominal flow rate, closed		30 ... 730 l/min
Nominal flow rate, open		30 ... 760 l/min
Pneumatic connection 1	G1/8, G1/4, M5, QS-4, QS-6, QS-8	G1/8, G1/4, G3/8, G1/2, M5
Pneumatic connection 2	QS-4, QS-6, QS-8	QS-4, QS-6, QS-8, QS-10, QS-12
Description	- Piston regulator with through pressure supply - Optionally with pressure gauge - Directly actuated - Connections: push-in connector at both ends, thread/push-in connector - Push-in connector can be rotated 360° - Higher energy efficiency through motion-specific pressure adjustment	- Piston regulator with through pressure supply - Without pressure gauge - Connections: thread/push-in connector on top or at side - Push-in connector can be rotated 360°
→ Page/online	lrma	lrl

08

Valves

Product overview

One-way flow control valves

				
Type	One-way flow control valves GRLA, GRLZ	★ One-way flow control valves VFOH	One-way flow control valves VFOF	One-way flow control valves VFOC
Valve function	Exhaust air one-way flow control function, one-way flow control function, supply air one-way flow control function	Exhaust air one-way flow control function	Exhaust air one-way flow control function	Supply air one-way flow control function
Pneumatic connection 1	G1/8, G1/4, G1/2, G3/8, G3/4, M3, M5, PK3, PK3 with union nut, PK4, PK4 with union nut, PK6 with union nut, QS3, QS4, QS6, QS8, QS10, QS12	QS-4, QS-6, QS-8, QS-10	QS-6, QS-8	QS-4, QS-6
Standard nominal flow rate in flow control direction	0 ... 4320 l/min	180 ... 530 l/min	250 ... 650 l/min	0 ... 270 l/min
Adjusting element	Internal hex, knurled screw, slotted head screw	External hex	Internal hex	Slotted head screw
Description	- Flow control valve, flow control at one end - Polymer, metal or stainless steel design - Standard, mini, in-line variants with different flow rates - Functional combination with one-way flow control valve and piloted check valve - Connections: thread at both ends, push-in connector at both ends, thread/push-in connector	- Easy to clean - Increased corrosion protection - Can be rotated horizontally through 360° in assembled state	- High flow rate - Can be rotated horizontally through 360° in assembled state - Functional combination with one-way flow control valve and piloted check valve - Compact and can be operated from the side	- Shut-off valve, flow control at one end - Metal design - Precision adjustment for low and medium speeds - Push-in connector/push-in sleeve
→ Page/online	1029	VFOH	1029	1029

One-way flow control valves

				
Type	One-way flow control valves GR, GRA	One-way flow control valves GG, GGO, GRR	Precision one-way flow control valves GRP	One-way flow control valves, M5 Compact System GRF
Valve function	One-way flow control function	One-way flow control function	One-way flow control function	One-way flow control function
Pneumatic connection 1	G1/2, G1/4, G1/8, G3/4, G3/8, M3, M5, QS-3, QS-4, QS-6, QS-8	G1/2, G1/4	G1/8, PK-3, PK-4	PK-3
Standard nominal flow rate in flow control direction	29.5 ... 3300 l/min	870 ... 1300 l/min	3.8 ... 75.8 l/min	45 l/min
Adjusting element	Knurled screw	Roller lever	Rotary knob with scale	Knurled screw
Description	- Non-return and flow control valve - In-line installation	- Non-return and flow control valves - With roller lever	- Non-return and flow control valve - Mounting on sub-base or for front panel mounting	- Complete system offering control components with all the functions required for pneumatic sequence controls - For control cabinet installation - Fast replacement of components
→ Page/online	1029	gg	grp	m5 compact

Product overview

Flow control valves

			
Type	Flow control/silencers VFFK	Flow control valves GRLO	Flow control valves, barbed Y-connectors with restrictor GRO, Y-PK3
Valve function	Flow control silencer function	Flow control function	Flow control function
Pneumatic connection 1	M5, M7, R1/8, R1/4	M3, M5	G1/4, G1/8, M5, QS-3, QS-4, QS-6
Standard flow rate in flow control direction 6 -> 0 bar		33 ... 169 l/min	
Standard flow rate in flow control direction		18 ... 95 l/min	85 ... 350 l/min
Standard flow rate 6 -> 0 bar	0 ... 420 l/min		
Adjusting element	Knurled screw	Slotted head screw	Knurled screw
Description	With polymer silencer	- Flow control valve, flow control at both ends - Standard or mini flow control valve - Precision adjustment for low and medium speeds - Connections: thread at both ends, thread/push-in connector - Connections: elbow outlet or parallel outlet - Metal version	- Flow control valve, flow control at both ends - In-line flow control valve - Connections: push-in connector at both ends - Connections: in-line, Y-shape - Polymer design
→ Page/online	1029	grlo	gro

08

Flow control valves

		
Type	Precision flow control valves GRPO	Exhaust air flow control valves, flow control/silencer GRE, GRU
Valve function	Flow control function	Flow control silencer function
Pneumatic connection 1	G1/8, PK-3, PK-4	G1/8, G1/4, G1/2, G3/8, G3/4
Standard flow rate in flow control direction 6 -> 0 bar	5.2 ... 129 l/min	
Standard flow rate in flow control direction	3.8 ... 75.8 l/min	520 ... 3600 l/min
Standard flow rate 6 -> 0 bar		0 ... 8000 l/min
Adjusting element	Rotary knob with scale	Slotted head screw
Description	- Metal design - Connections: threaded connection at both ends, push-in connector at both ends	- Exhaust air flow control valve GRE: sintered metal - Flow control/silencer GRU: polymer
→ Page/online	grpo	gre

Valves

Time delay valves

	
Type	Time delay valves, M5 Compact product range VZO, VZ, VLK
Pneumatic connection	PK-3
Standard nominal flow rate	60 ... 90 l/min
Adjustable delay time	0.25 ... 5 s
Operating pressure	2.5 ... 8 bar
Type of mounting	Optional: front panel mounting, on mounting frame
Description	- Complete system offering control components with all the functions required for pneumatic sequence controls - For control cabinet installation - Fast replacement of components
→ Page/online	m5 compact

Product overview

Proportional valves

Type	 Proportional pressure regulators VEAA	 Proportional pressure regulators VEAB	 Proportional flow control valves VPCF	 Proportional pressure regulators VPPX
Valve function	3-way proportional pressure regulator	3-way proportional pressure regulator	3-way proportional flow control valve	3-way proportional pressure regulator
Pneumatic connection 1	QS-4, flange	QS-4, flange	G3/8	Sub-base, G1/8, G1/4, G1/2
Pressure regulation range	0.01 ... 10 bar	-1 ... 6 bar		0.1 ... 10 bar
Operating pressure for positioning/Soft Stop				
Operating pressure			1 ... 10 bar	
Standard nominal flow rate	≥7 l/min	≥4.5 l/min	20 ... 1500 l/min	1400 ... 7000 l/min
Description	• Silent operation • Very low power consumption • High precision • Integrated piezo technology • Durable • Mounting: via through-holes, H-rail mounting, on mounting or sub-base	• Silent operation • Very low power consumption • High precision • Integrated piezo technology • Short switching times • Mounting: via through-holes, H-rail mounting	• Linear characteristic curve for extremely easy programming • ATEX-certified • High dynamic response • Piston spool with integrated sensor • Electrical connection via M12x1 plug, 8-pin	• Pressure regulator with additional sensor input • Multi-sensor control (cascade control) • Control characteristic adjustable via FCT (Festo Configuration Tool) software • Integrated pressure sensor with separate output • Pressure is maintained if the controller fails
→ Page/online	1041	1047	vpcf	vppx

Proportional valves

Type	 Proportional pressure regulators VPPM	 Proportional directional control valves VPWP	 Proportional pressure regulators MPPES
Valve function	3-way proportional pressure regulator	5/3-way proportional regulator, closed	3-way proportional pressure regulator, closed
Pneumatic connection 1	Sub-base, G1/8, G1/4, G1/2	G1/4, G1/8, G3/8	G1/8, G1/4, G1/2
Pressure regulation range	0.02 ... 10 bar		0 ... 10 bar
Operating pressure for positioning/Soft Stop		4 ... 8 bar	
Operating pressure		0 ... 10 bar	≤12 bar
Standard nominal flow rate	380 ... 7000 l/min	350 ... 2000 l/min	230 ... 8500 l/min
Description	• Pilot actuated pressure regulator • Multi-sensor control (cascade control) • Integration in valve terminal MPA • User interface with LED displays, LCD display, adjustment/selection buttons • Integrated pressure sensor • Electrical connection via plug, round design, 8-pin, M12 or terminal linking	• Controlled piston spool valve • Digital actuation • Integrated pressure sensors for monitoring function and force control • With auto identification • Integrated digital output, e.g. for a clamping/brake unit • Suitable for servopneumatic applications with CPX-CMAX and CPX-CMPX	• Directly actuated (G1/8), pilot actuated (G1/4, G1/2) • Setpoint value input as analogue voltage or current signal • Choice of pressure regulation ranges • Optionally with setpoint module • Electrical connection via plug, round design to DIN 45326, M16 x 0.75, 8-pin • With proportional solenoid
→ Page/online	1053	vpwp	mppes

Product overview

Proportional valves

			
Type	Proportional pressure regulators VPPE	Proportional directional control valves MPYE	Proportional directional control valves VPPL
Valve function	3-way proportional pressure regulator, 3-way proportional pressure regulator, closed	5/3-way, closed	3-way proportional pressure regulator, closed
Pneumatic connection 1	G1/8	G1/8, G1/4, G3/8, M5	Flange, G1/4
Pressure regulation range	0.02 ... 10 bar		0.2 ... 40 bar
Operating pressure for positioning/Soft Stop			
Operating pressure		0 ... 10 bar	0 ... 50 bar
Standard nominal flow rate	310 ... 1250 l/min	100 ... 2000 l/min	300 l/min
Description	- Pilot actuated pressure regulator - Setpoint input as analogue voltage signal (0 ... 10 V) - Electrical connection via M12x1 plug, 4-pin - Optionally with setpoint module - For simple control tasks	- Controlled piston spool valve - Analogue actuation - Setpoint input as analogue voltage signal (0 ... 10 V) - Suitable for servopneumatic applications with SPC11	- For high-pressure applications - Directly actuated piston regulator - Available in three variants: flanged valve, flanged valve with external pilot air supply, in-line valve
→ Page/online	vppe	mpye	vppl

Solenoid-actuated process and media valves

			
Type	Solenoid valves VZWD	★ Solenoid valves VZWF	★ Solenoid valves VZWM
Design	Directly actuated poppet valve	Diaphragm valve, force pilot operated	Poppet valve with diaphragm seal
Type of actuation	Electric	Electric	Electric
Nominal width	1 ... 6 mm	13.5 ... 50 mm	13 ... 50 mm
Flow rate Kv	0.06 ... 0.4 m³/h	1.8 ... 28 m³/h	1.6 ... 39 m³/h
Temperature of medium	-10 ... 80°C	-10 ... 80°C	-10 ... 60°C
Medium pressure	0 ... 90 bar	0 ... 10 bar	
Process valve connection	G1/8, G1/4, NPT1/4, NPT1/8	G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2	G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2
Description	- Extensive pressure range - Directly actuated poppet valve - No pressure difference required - Can also be used in vacuum technology	- High flow rates - Large nominal widths with relatively small solenoids - No pressure difference required - Can also be used in vacuum technology	- Brass or stainless steel casting design - Electrical connection via solenoid armature tube - Wide range of coils - Coil can be ordered separately
→ Page/online	vzwd	vzwf	vzwm

08

Valves

Product overview

Solenoid-actuated process and media valves

Type	 Solenoid valves VZWE-E, VZWE-F	 Solenoid valves VZWP	 Solenoid valves MN1H-2
Design	Angled version, straight version with flange, diaphragm valve	Piloted piston poppet valve	Diaphragm valve
Type of actuation	Electric	Electric	Electric
Nominal width	20 ... 76 mm	13 ... 25 mm	13 ... 40 mm
Flow rate Kv	15 ... 210 m³/h	1.5 ... 11.5 m³/h	2000 ... 30,500 l/min
Temperature of medium	-20 ... 60°C	-10 ... 80°C	-10 ... 60°C
Medium pressure	0.35 ... 8 bar	0.5 ... 40 bar	0.5 ... 10 bar
Process valve connection		G1/4, G3/8, G1/2, G3/4, G1	G1/4, G3/8, G1/2, G3/4, G1, G1 1/2
Description	- High flow rates - For mechanically cleaning filters and dust filter systems - Fast opening and closing times - Sturdy pilot system	- For all applications with a differential pressure of min. 0.5 bar - For high pressures and high flow rates with relatively small solenoids - For controlling gaseous and liquid media in open circuits	- Pilot operated diaphragm valve - Brass design - Can only be used for gaseous media - Adjustable closing cushioning, in-line mounting or through-hole - Operating voltage 24 V DC, 110/230 V AC (50 ... 60 Hz)
→ Page/online	vzwe	vzwp	mn1h-2

Pneumatically and mechanically actuated process and media valves

Type	 Angle seat valves VZXF	 Angle seat valves VZXA	 Pinch valves VZQA	 Ball valves VZBD
Design	Poppet valve with spring return	Poppet valve with piston drive	Pneumatically actuated pinch valve	2-way ball valve
Valve function	2/2-way, monostable, closed	2/2-way	2/2-way, monostable, closed, 2/2-way, monostable, open	2/2-way
Type of actuation	Pneumatic	Pneumatic	Pneumatic	Mechanical
Nominal width	12 ... 45 mm			
Nominal size DN	15, 20, 25, 32, 40, 50	1/2" ... 2", DN13 ... DN50	6, 15, 25	15, 20, 25, 32, 40, 50, 65, 80, 100
Process valve connection	G1/2, G3/4, G1, G1 1/4, G1 1/2, G2, NPT1, NPT1 1/2, NPT1 1/4, NPT1/2, NPT2, NPT3/4		Clamp to ASME-BPE, clamp to DIN 32676, G1, G1/2, G1/4, NPT1/2, NPT1/4	Welded end to ISO 1127, welded end to ASME-BPE, clamp ferrule to DIN 32676-B, clamp ferrule to ASME-BPE
Flow rate Kv	3.3 ... 43 m³/h	6 ... 50.1 m³/h	0.7 ... 18 m³/h	3.5 ... 436.3 m³/h
Standard nominal flow rate				
Temperature of medium	-40 ... 200°C	-10 ... +180°C	-5 ... 100°C	-20 ... +200°C
Medium pressure	-0.9 bar, 0 ... 40 bar	4.4 ... 30 bar	0 ... 6 bar	
Process valve PN nominal pressure				63 bar
NEW			Additional versions	
Description	- Sturdy design - Stainless steel and gunmetal process valves with stainless steel, brass or aluminium actuators - For operating pressures up to 40 bar - Safety position "closing" - Different actuator sizes and housing materials - Selection of different seat and shaft seals - Flow direction is freely selectable - For liquids, gases and other easily contaminated media - Easy-to-clean design	- Highly flexible, extremely high flow rates - Long service life - Modular design - Hygienic design, insensitive to dirt - Quick and easy maintenance - Simple and sturdy: ideally suited for virtually all media up to a viscosity of 600 mm²/s - High chemical and thermal resistance	- Modular design - Quick and easy replacement of the diaphragm - Selection of different materials for housing and connector caps - Different connection cap designs (G and NPT thread), clamp ferrule to DIN 32676 and ASME-BPE - For critical, abrasive and viscous media - Up to 2 million switching cycles - FDA-compliant materials - Easy-to-clean design - Flow direction is freely selectable	- Electropolished surfaces - Stainless steel design - PTFE seal with little dead space - The powerful ball valve for the pharmaceutical and cosmetic industries - FDA-compliant seal to FDA 21 CFR 177.1550
→ Page/online	vzxf	vzxa	vzqa	vzbd

Product overview

Pneumatically and mechanically actuated process and media valves

Type	 Ball valves VZBE	 Ball valves VZBF	 Ball valves VZBM	 Ball valves VAPB
Design	2-way ball valve, 3-way ball valve with L-shaped hole or T-shaped hole	2-way ball valve	2-way ball valve, 2-way ball valve with hand lever, 3-way ball valve with L-shaped hole or T-shaped hole	2-way ball valve
Valve function	2/2-way, 3/2-way	2/2-way	2/2-way, 3/2-way	
Type of actuation	Mechanical	Mechanical	Mechanical	Mechanical
Nominal size DN	8, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100	15, 20, 25, 32, 40, 50, 65, 80, 100, 150, 200	8, 10, 15, 20, 25, 32, 40, 50	15, 20, 25, 32, 40, 50, 63
Process valve connection	NPT 1/4 ... NPT4	Flange to ANSI 150	Rp1/4 ... Rp2	Rp1/4, Rp3/8, Rp1, Rp1 1/4, Rp1 1/2, Rp1/2, Rp3/4, Rp2, Rp2 1/2
Flow rate Kv	5 ... 435.2 m³/h	8.5 ... 2078.3 m³/h	5.9 ... 292 m³/h	5.9 ... 535 m³/h
Standard nominal flow rate				
Temperature of medium	-20 ... +200°C	-20 ... +200°C	-15 ... +130°C	-20 ... 150°C
Medium pressure				
Process valve PN nominal pressure	63	20	25 ... 50	25 ... 40
NEW			• With quarter turn actuator DFPD	
Description	2-way or 2-way manual, with lockable hand lever 3-way, L-shaped hole or T-shaped hole as horizontal design - Stainless steel design - Pipe thread to ASME B1.20.1	- Thread to ANSI B 16.5. class 150 - Static dissipation guaranteed - Stainless steel design - API 607 fire safe approval - Easy to maintain	2-way with hand lever - Pipe thread to EN 10226-1 - Brass design	- Automatable 2-way ball valve - Brass design - Blow-out proof shaft - Manual operation possible using hand lever - Connecting thread to DIN 2999 or DIN ISO 228-1 - Mounting flange according to ISO 5211
→ Page/online	vzbe	vzbf	vzbm	vapb

08

Pneumatically and mechanically actuated process and media valves

Type	 Ball valves VZBC	 Ball valve actuator units VZBC	 Ball valves VZBA
Design	2-way ball valve	2-way ball valve, quarter turn actuator	2-way ball valve, 3-way ball valve, L-shaped hole, T-shaped hole
Valve function	2/2-way		2/2-way, 3/2-way
Type of actuation	Mechanical	Pneumatic	Mechanical
Nominal size DN	15, 20, 25, 32, 40, 50, 65, 80, 100	15, 20, 25, 32, 40, 50, 65, 80, 100	8, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100
Process valve connection	Ring housing with threaded flange	Ring housing with threaded flange	Rp1/4, Rp3/8, Rp1/2, Rp3/4, Rp1, Rp1 1/4, Rp1 1/2, Rp2, Rp2 1/2, Rp3, Rp4, welded ends/welded ends
Flow rate Kv	19.4 ... 1414 m³/h	19.4 ... 1414 m³/h	7 ... 1414 m³/h
Standard nominal flow rate			
Temperature of medium	-10 ... 200°C	-10 ... 200°C	-10 ... 200°C
Medium pressure		6 ... 8.4 bar	
Process valve PN nominal pressure	16 ... 40	16 ... 40	63
Description	- Automatable 2-way ball valve with compact flange - Stainless steel design - Short installed length - Blow-out proof shaft - Manual operation possible using hand lever - Connecting thread to DIN 2999 or DIN ISO 228-1 - Mounting flange according to ISO 5211 - ATEX certification for zone 1, 21, 2, 22	- Ball valve actuator unit with double-acting or single-acting quarter turn actuator - Stainless steel ball valve in compact design - NAMUR connection pattern for solenoid valves/sensor boxes to VDI/VDE 3845 - Flow is fully opened or closed in both directions - ATEX certification for zone 1, 21, 2, 22	- Automatable 2-way or 3-way ball valve - Stainless steel design - Blow-out proof shaft - Manual operation possible using hand lever - Connecting thread to DIN 2999 or DIN ISO 228-1 - Mounting flange according to ISO 5211 - ATEX certification for zone 1, 21, 2, 22
→ Page/online	vzbc	vzbc	vzba

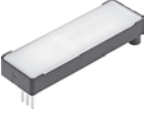
Valves

Product overview

Pneumatically and mechanically actuated process and media valves

Type	 Ball valve actuator units VZBA	 Ball valve actuator units VZPR	 Pneumatic valves VLX
Design	2-way ball valve, 3-way ball valve, L-shaped hole, quarter turn actuator, T-shaped hole	2-way ball valve, quarter turn actuator	Diaphragm valve
Valve function			2/2-way, monostable, closed
Type of actuation	Pneumatic	Electric, pneumatic	Pneumatic
Nominal width			13 ... 25 mm
Nominal size DN	8, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100	15, 20, 25, 32, 40, 50, 63	
Process valve connection	Rp1, Rp1 1/2, Rp1 1/4, Rp1/2, Rp1/4, Rp2, Rp2 1/2, Rp3, Rp3/4, Rp3/8, Rp4, welded ends/welded ends	Rp1/4, Rp3/8, Rp1/2, Rp3/4, Rp1, Rp1 1/4, Rp1 1/2, Rp2, Rp2 1/2	G1/4, G3/8, G1/2, G3/4, G2
Flow rate Kv	7 ... 1414 m³/h	5.9 ... 535 m³/h	
Standard nominal flow rate			2400 ... 14,000 l/min
Temperature of medium	-10 ... 200°C	-20 ... 150°C	-10 ... 80°C
Medium pressure	6 ... 8.4 bar	1 ... 8.4 bar	1 ... 10 bar
Process valve PN nominal pressure	63	25 ... 40	
Description	- Ball valve actuator unit with double-acting or single-acting quarter turn actuator - Stainless steel ball valve - NAMUR connection pattern for solenoid valves/sensor boxes to VDI/VDE 3845 - Flow is fully opened or closed in both directions - ATEX certification for zone 1, 21, 2, 22	- Ball valve actuator unit with double-acting quarter turn actuator - Brass ball valve - NAMUR connection pattern for solenoid valves/sensor boxes to VDI/VDE 3845 - Flow is fully opened or closed in both directions	- Poppet valve - Indirectly actuated - Brass design - In-line mounting or via through-holes
→ Page/online	vzba	vzpr	vlx

Piezo valves

Type	 Piezo valves VEMP	 Valves VEVN
Valve function	2/2-way, single solenoid, closed, 3/3-way, single solenoid, closed	Can be assigned using Motion Apps
Type of actuation	Electric	Electric
Standard nominal flow rate	19 ... 28 l/min	480 l/min
Operating pressure	0 ... 1.7 bar	3 ... 8 bar
Pneumatic connection 1	Flange	G3/8
Nominal width	1.3 ... 1.6 mm	4,2 mm
Nominal operating voltage DC	250 ... 310 V	24 V
Electrical connection		
Type of mounting	On sub-base	On sub-base
Temperature of medium	-20 ... +60°C	-20 ... +60°C
NEW		New series
Description	- Very low power consumption - High precision - Integrated piezo technology	Functionality can be assigned using Motion Apps
→ Page/online	vemp	vevn

Product overview

Pneumatic control systems

			
Type	Quickstepper FSS	Two-hand control blocks ZSB	Adding counters, M5 Compact System PZA, PZV
Design	Sequencer with 12 switching steps (additive)	Poppet valve with spring return, two-hand operation in accordance with EN ISO 12100	Mechanical sequence counter with pneumatic drive
Pneumatic connection	Barbed connector 3 mm, barbed connector 4 mm	G1/8	M5
Operating pressure	2 ... 6 bar	4 ... 8 bar	2 ... 8 bar
Type of mounting	On 2n mounting frame, front panel mounting	Mounting thread, optionally: with through-hole, with female thread	Front panel mounting, with through-hole
Description	- Pneumatic/mechanical sequencer with 12 steps and linked to start - Ready-to-install sequence controller - Acknowledgement-controlled motion sequences - Fast replacement, tubing can be left in place	- Used wherever manual actuation poses a risk of accident to operating personnel - Safety component in accordance with EU Machinery Directive	- Complete system offering control components with all the functions required for pneumatic sequence controls - For control cabinet installation - Fast replacement of components - Available with protective cap
→ Page/online	fss	zsb	pza

Pneumatic control systems

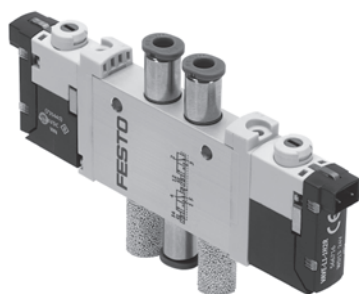
		
Type	Timers, M5 Compact System PZVT	Adding counters CCES
Design	Mechanical sequence counter with pneumatic drive	Electric adding counter with battery
Pneumatic connection	Female thread M5	
Operating pressure	2 ... 6 bar	
Type of mounting	Front panel mounting	Front panel mounting
Description	- Complete system offering control components with all the functions required for pneumatic sequence controls - For control cabinet installation - Fast replacement of components - Mechanical sequence counter with pneumatic drive - Adjustable delay time - Available with protective cap	8-digit LCD display - Independent power supply - Connection via terminal strip - Reset button
→ Page/online	pzvt	cces

08

Valves

Product overview

Customised components – for your specific requirements



Valves with customised designs

Can't find the valve you need in our catalogue?

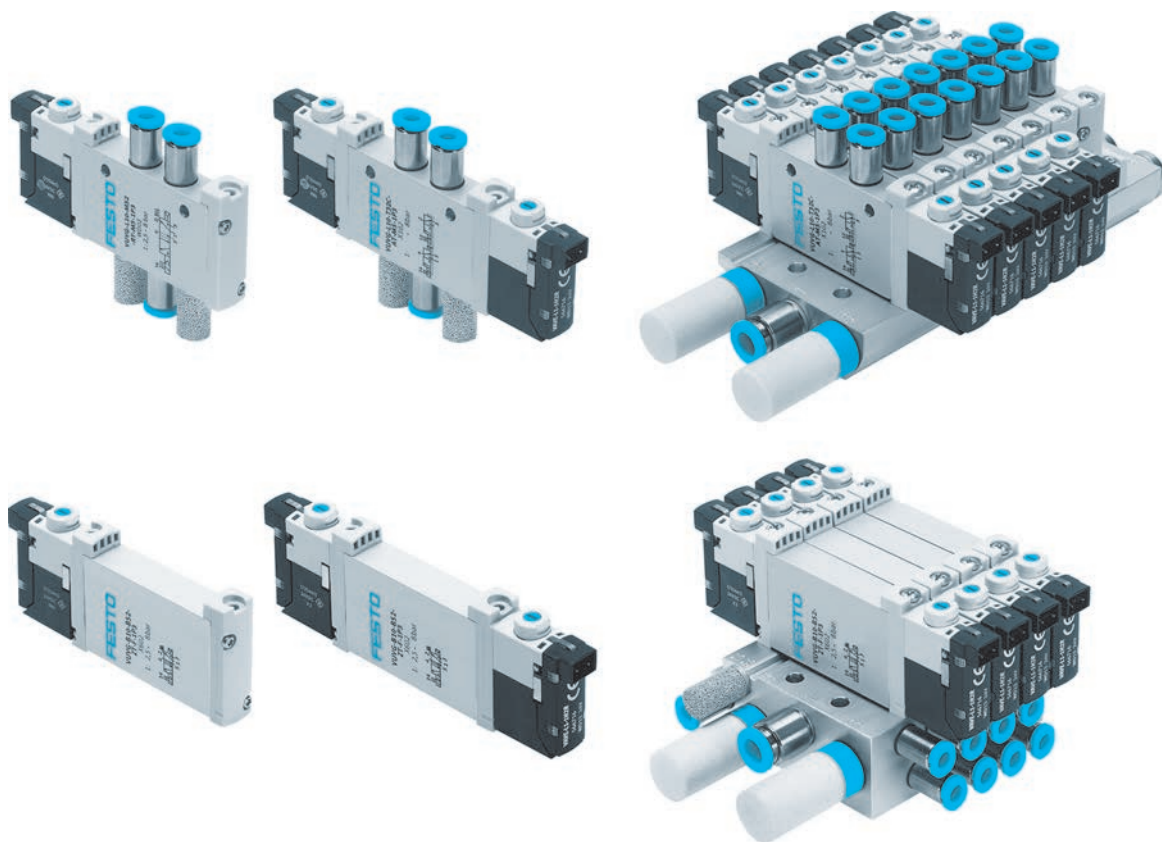
We can offer you customised components that are tailored to your specific requirements.

Common product modifications:

- Coatings for special ambient conditions
- Customised cables: length, pin allocation, pre-assembled with plug
- Modified actuating elements
- Modified connecting thread
- Modified valve sub-bases

Many additional variants are possible. Ask your Festo sales engineer, who will be happy to help.

→ www.festo.com/contact



Affordable and compact

- + Minimum space requirement thanks to compact design
- + Maximum flow in the smallest of spaces
- + Universal use thanks to comprehensive range of valve functions

Electrically and pneumatically actuated directional control valves ›
Universal directional control valves ›

Solenoid valves

VUVG ★

Electrically and pneumatically actuated directional control valves > Universal directional control valves >

Solenoid valves

VUVG★



Overview, configuration and ordering

→ www.festo.com/catalogue/vuvg



Additional information, support and user documentation

→ www.festo.com/sp/vuvg



Quick ordering of basic designs

→ page 931, 938, 944, 951, 958



- + Connection technology via E-box
- + Specific I-Port interface from Festo for fieldbus node
- + IO-Link mode for direct connection to a higher-order IO-Link master
- + Variable multi-pin plug connection using Sub-D or ribbon cable
- + Sturdy and durable metal components
- + Reversible piston spool valves
- + Up to 24 valve positions

Product range overview

Type	Design	Working port	Valve functions and flow rate [l/min]													→ Page/ online
			T32C-A	T32U-A	T32H-A	T32C-M	T32U-M	T32H-M	M52-A	M52-M	M52-R	B52	P53C	P53U	P53E	
In-line valves																
VUVG-LK	Piston spool with sealing ring	M5	180	–	–	–	–	–	195	–	–	195	–	–	–	927
		M7	280	–	–	–	–	–	340	–	–	340	–	–	–	927
		G1/8	570	–	–	–	–	–	660	–	–	660	–	–	–	934
VUVG-L	Piston spool with sealing cartridge	M3	–	–	–	–	–	–	–	80	100	100	90	90	90	vuvg
		M5	150	150	150	135	125	125	–	190	220	220	210	210	210	927
		M7	190	190	190	150	140	140	–	320	380	380	320	320	320	927
		G1/8	650	600	650	550	500	500	780	780	–	780	650	600	600	934
		G1/4	1000	1000	1000	1000	1000	1000	–	1300	1300	1380	1200	1000	1000	940
Semi in-line valves for manifold assembly																
VUVG-S	Piston spool with sealing cartridge	M3	–	–	–	–	–	–	–	80	100	100	90	90	90	vuvg
		M5	150	150	150	135	125	125	–	190	220	220	210	210	210	927
		M7	170	170	170	140	130	130	–	290	340	340	300	300	300	927
		G1/8	620	580	580	520	480	480	730	730	–	730	620	580	580	934
		G1/4	1000	1000	1000	1000	1000	1000	–	1300	1300	1380	1200	1000	1000	940
Sub-base valves																
VUVG-BK	Piston spool with sealing ring	M5	160	–	–	–	–	–	160	–	–	160	–	–	–	947
		M7	160	–	–	–	–	–	160	–	–	160	–	–	–	947
		G1/8	350	–	–	–	–	–	380	–	–	380	–	–	–	954
VUVG-B	Piston spool with sealing cartridge	M3	–	–	–	–	–	–	–	80	100	100	90	90	90	vuvg
		M5	150	150	150	130	120	120	–	180	210	210	200	200	200	947
		M7	160	160	160	140	130	130	–	230	270	270	250	250	250	947
		G1/8	540	510	540	430	410	410	580	580	–	580	540	510	510	954
		G1/4	800	800	800	800	800	800	–	1000	1000	1000	950	950	950	960

Valve functions:

- T32C-A 2x 3/2-way valve, normally closed, pneumatic spring
- T32U-A 2x 3/2-way valve, normally open, pneumatic spring
- T32H-A 2x 3/2-way valve, 1x normally closed, 1x normally open, pneumatic spring
- T32C-M 2x 3/2-way valve, normally closed, mechanical spring
- T32U-M 2x 3/2-way valve, normally open, mechanical spring
- T32H-M 2x 3/2-way valve, 1x normally closed, 1x normally open, mechanical spring
- M52-A 5/2-way valve, single solenoid/monostable, pneumatic spring
- M52-M 5/2-way valve, single solenoid/monostable, mechanical spring
- M52-R 5/2-way valve, single solenoid/monostable, pneumatic/mechanical spring
- B52 5/2-way valve, double solenoid/bistable
- P53C 5/3-way valve, mid-position closed
- P53U 5/3-way valve, mid-position pressurised
- P53E 5/3-way valve, mid-position exhausted

Solenoid valves VUVG ★ , in-line valves M5/M7

Data sheet

Technical data		Download CAD data → www.festo.com		
		VUVG-LK		
Valve function		T32-A	M52-A	B52
Normal position		C ¹⁾	–	–
Design		Piston spool with sealing ring		
Pneumatic spring reset method		Yes		
		–		
Port: in-line valve	1, 2, 3, 4, 5	M5, M7		
Type of mounting		Via through-holes ⁶⁾ or on manifold rail		
Electrical connection		Via electrical connection block		
Nominal operating voltage	[V DC]	24 ±10%		
Power	[W]	0.7		
Duty cycle	[%]	100		
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)		

Technical data		Download CAD data → www.festo.com											
		VUVG-L											
Valve function		T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position		C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾
Design		Piston spool with sealing cartridge											
Pneumatic spring reset method		Yes			No			Yes ⁵⁾	–	No	–		
Mechanical spring reset method		No			Yes			Yes ⁵⁾	–	Yes	Yes		
Port: in-line valve		1, 2, 3, 4, 5			M5, M7								
		12, 14			M3								
Vacuum operation at port 1		No			Only with external pilot air supply								
Type of mounting		Via through-holes ⁶⁾ or on manifold rail											
Electrical connection		Via electrical connection block											
Nominal operating voltage VUVG-L		[V DC]		5, 12 and 24 ±10%									
Power VUVG-L		[W]		1, reduced to 0.35 with holding current reduction									
Duty cycle		[%]		100									
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)											

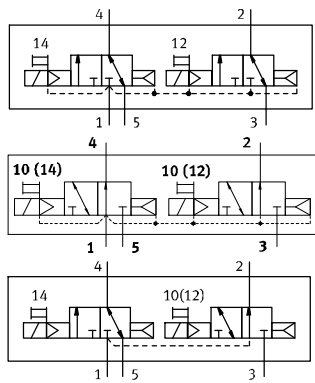
- 1) C=Normally closed.
- 2) U=Normally open/mid-position pressurised.
- 3) E=Normally exhausted.
- 4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.
- 5) Combined reset method.
- 6) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.

Operating conditions		VUVG-LK	VUVG-L
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)	
Ambient temperature	[°C]	–5 ... +50	–5 ... +50, –5 ... +60 with holding current reduction
Temperature of medium	[°C]	–5 ... +50	–5 ... +50, –5 ... +60 with holding current reduction

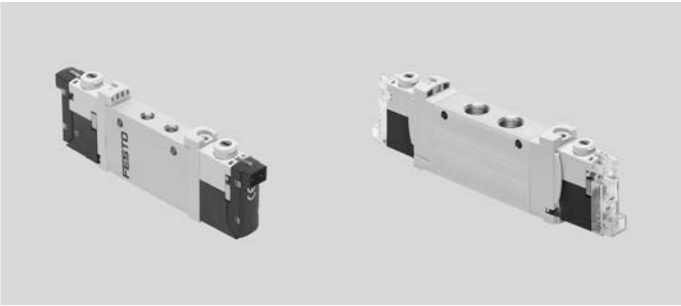
Materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR

Solenoid valves VUVG ★ , in-line valves M5/M7

Data sheet – 2x 3/2-way valve



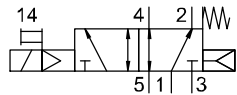
Internal or external pilot air supply



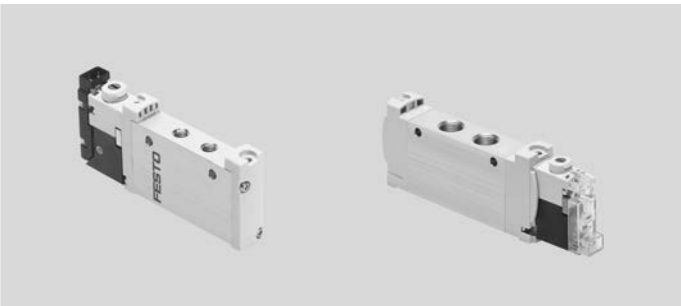
Technical data		Download CAD data → www.festo.com		
		VUVG-LK	VUVG-L	
Valve function		T32-A	T32-A	T32-M
Operating pressure	Internal	[bar]	1.5 ... 7	1.5 ... 8
	External	[bar]	–	2.5 ... 8
Pilot pressure ¹⁾		[bar]	1.5 ... 10	–0.9 ... +10
Standard nominal flow rate M5		[l/min]	1.5 ... 8	2 ... 8
Standard nominal flow rate M7		[l/min]	150	125 ... 135
Switching time on/off		[ms]	190	140 ... 150
			6/16	8/11

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/2-way valve, single solenoid



Internal or external pilot air supply



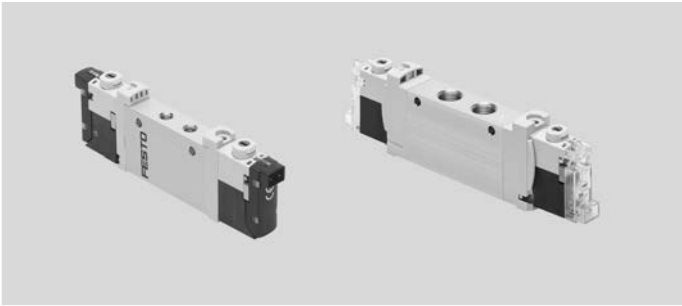
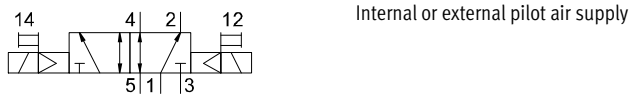
Technical data		Download CAD data → www.festo.com		
		VUVG-LK	VUVG-L	
Valve function		M52-A	M52-R	M52-M
Operating pressure	Internal	[bar]	2.5 ... 7	2.5 ... 8
	External	[bar]	–	3 ... 8
Pilot pressure ¹⁾		[bar]	–0.9 ... +10	–0.9 ... +8
Standard nominal flow rate M5		[l/min]	2.5 ... 8	3 ... 8
Standard nominal flow rate M7		[l/min]	195	220
Switching time on/off		[ms]	340	380
			14/17	7/19
				8/24

1) Minimum pilot pressure 50% of operating pressure.

Electrically and pneumatically actuated directional control valves > Universal directional control valves >

Solenoid valves VUVG ★ , in-line valves M5/M7

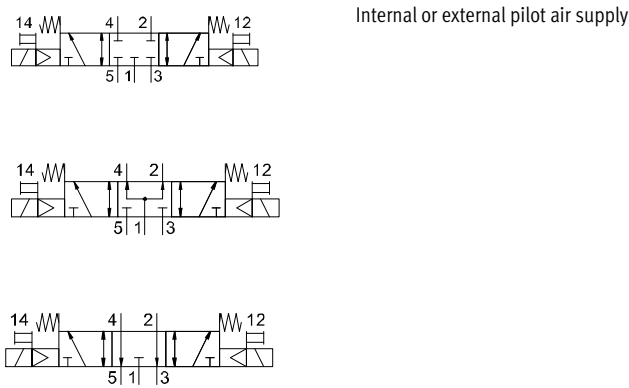
Data sheet – 5/2-way valve, double solenoid



Technical data			Download CAD data → www.festo.com	
			VUVG-LK	VUVG-L
Valve function			B52	B52
Operating pressure	Internal	[bar]	1.5 ... 7	1.5 ... 8
	External	[bar]	–	–0.9 ... +10
Pilot pressure ¹⁾		[bar]	–	1.5 ... 8
Standard nominal flow rate M5		[l/min]	195	220
Standard nominal flow rate M7		[l/min]	340	380
Changeover time		[ms]	7	7

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/3-way valve



Technical data			Download CAD data → www.festo.com	
			VUVG-L	
Valve function			P53	
Operating pressure	Internal	[bar]	3 ... 8	
	External	[bar]	–0.9 ... +10	
Pilot pressure ¹⁾		[bar]	3 ... 8	
Standard nominal flow rate M5		[l/min]	210	
Standard nominal flow rate M7		[l/min]	320	
Switching time on/off		[ms]	11/30	
Changeover time		[ms]	14	

1) Minimum pilot pressure 50% of operating pressure.

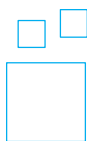
Solenoid valves VUVG ★, in-line valves M5/M7

Order code – VUVG-LK

VUVG	-	L	K	10	-	-	A	T	-	-	1	L	-	S
Type of directional control valve														Version
In-line valve		L												S Core features
Design principle														Display
Piston spool with sealing ring			K										L	LED
Size														Circuitry
10 mm				10									-	Without holding current reduction (HCR)
Valve function														Electrical connection
2x 3/2-way valve, normally closed							T32C						H2	Connection pattern H, horizontal plug
5/2-way valve, single solenoid							M52						R8	Individual plug M8, 3-pin
5/2-way valve, double solenoid							B52							Nominal operating voltage
Reset method													1	24 V DC
Pneumatic spring with T32 and M52							A							Exhausting
With B52 and P53							-						-	Thread M5/M7
Pilot air supply														Pneumatic connection
Internal							-							M5 Thread M5
Manual override								T						Q3 Push-in connector 3 mm/M5
Non-detenting, detenting														Q4 Push-in connector 4 mm/M5
														Q6 Push-in connector 6 mm/M5
														M7 Thread M7
														Q4H Push-in connector 4 mm/M7
														Q6H Push-in connector 6 mm/M7

Solenoid valves VUVG ★, in-line valves M5/M7

Ordering – Product options



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The configurator can be found under
Products on the DVD or

→ www.festo.com/catalogue/...

Enter the type code in the search field.

★ Quick ordering¹⁾

Part no.	Type
In-line valve M5, 2x 3/2-way valve	
8042542	VUVG-LK10-T32C-AT-M5-1R8L-S
8042538	VUVG-LK10-T32C-AT-M5-1H2L-S
In-line valve M5, 5/2-way single solenoid valve	
8042543	VUVG-LK10-M52-AT-M5-1R8L-S
8042539	VUVG-LK10-M52-AT-M5-1H2L-S
In-line valve M5, 5/2-way double solenoid valve	
8042544	VUVG-LK10-B52-T-M5-1R8L-S
8042540	VUVG-LK10-B52-T-M5-1H2L-S

Part no.	Type
In-line valve M5, 2x 3/2-way valve	
577347	VUVG-L10-T32C-AT-M5-1R8L
In-line valve M5, 5/2-way single solenoid valve	
572634	VUVG-L10-M52-RT-M5-1R8L
In-line valve M5, 5/2-way double solenoid valve	
576664	VUVG-L10-B52-T-M5-1R8L
In-line valve M5, 5/3-way valve	
577346	VUVG-L10-P53C-T-M5-1R8L

Part no.	Type
In-line valve M7, 2x 3/2-way valve	
8042550	VUVG-LK10-T32C-AT-M7-1R8L-S
8042546	VUVG-LK10-T32C-AT-M7-1H2L-S
In-line valve M7, 5/2-way single solenoid valve	
8042551	VUVG-LK10-M52-AT-M7-1R8L-S
8042547	VUVG-LK10-M52-AT-M7-1H2L-S
In-line valve M7, 5/2-way double solenoid valve	
8042552	VUVG-LK10-B52-T-M7-1R8L-S
8042548	VUVG-LK10-B52-T-M7-1H2L-S

Part no.	Type
In-line valve M7, 2x 3/2-way valve	
574218	VUVG-L10-T32C-AT-M7-1R8L
In-line valve M7, 5/2-way single solenoid valve	
574221	VUVG-L10-M52-RT-M7-1R8L
In-line valve M7, 5/2-way double solenoid valve	
574222	VUVG-L10-B52-T-M7-1R8L
In-line valve M7, 5/3-way valve	
574223	VUVG-L10-P53C-T-M7-1R8L

1) All products in this table are easy to select and quick to order.

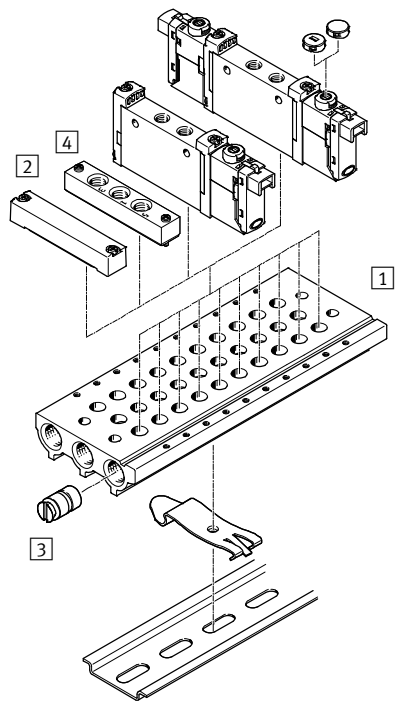
Solenoid valves VUVG ★ , in-line valves M5/M7

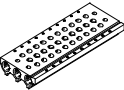
Accessories – Ordering data

Order code – Manifold rails

VABM	-	L1	-	10	S	-	G18	-	
Valve manifold parts							Number of valve positions		
Manifold rail	VABM						2 to 10, 12, 14 and 16		
Valve series							Port 1, 3, 5		
VUVG	L1						G18 Thread G1/8		
Size									
10 mm				10					
Manifold rail with ports 1, 3, 5							S		
For M5 and M7 in-line valves									

Manifold assembly



		Part no.	Type
1 Manifold rail			
	For M5/M7	★ 566558	VABM-L1-10S-G18-2
		★ 566559	VABM-L1-10S-G18-3
		★ 566560	VABM-L1-10S-G18-4
		566561	VABM-L1-10S-G18-5
		★ 566562	VABM-L1-10S-G18-6
		566563	VABM-L1-10S-G18-7
		★ 566564	VABM-L1-10S-G18-8
		566565	VABM-L1-10S-G18-9
		★ 566566	VABM-L1-10S-G18-10
		566567	VABM-L1-10S-G18-12
		566568	VABM-L1-10S-G18-14
		566569	VABM-L1-10S-G18-16
2 Cover plate			
	For M5/M7	★ 566462	VABB-L1-10-S
3 Blanking plug			
	Separator for pressure zones	569995	VABD-8-B
4 Supply plate			
	For M5	569991	VABF-L1-10-P3A4-M5
	For M7	569992	VABF-L1-10-P3A4-M7
Seals for in-line valves (10 pieces incl. 20 screws)			
	For VUVG-LK		
	For M5	★ 8043718	VABD-L1-10XK-S-M5-S
	For M7	★ 8043719	VABD-L1-10XK-S-M7-S
	For VUVG-L		
	For M5	★ 566672	VABD-L1-10X-S-M5
	For M7	★ 566673	VABD-L1-10X-S-M7

Solenoid valves VUVG ★, in-line valves G1/8

Data sheet

Technical data		Download CAD data → www.festo.com		
		VUVG-LK		
Valve function		T32-A	M52-A	B52
Normal position		C ¹⁾	–	–
Design		Piston spool with sealing ring		
Pneumatic spring reset method		Yes	Yes	–
Port: in-line valve	2, 4	G1/8		
Type of mounting		Via through-holes ⁵⁾ or on manifold rail		
Electrical connection		Via electrical connection box		
Nominal operating voltage	[V DC]	24 ±10%		
Power	[W]	0.7		
Duty cycle	[%]	100		
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)		

Technical data		Download CAD data → www.festo.com											
		VUVG-L											
Valve function		T32-A			T32-M			M52-A	B52	M52-M	P53		
Normal position		C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾
Design		Piston spool with sealing cartridge											
Pneumatic spring reset method		Yes			No			Yes	–	No	–		
Mechanical spring reset method		No			Yes			No	–	Yes	Yes		
Port: in-line valve		1, 2, 3, 4, 5											
		12, 14											
Vacuum operation at port 1		No			Only with external pilot air supply								
Type of mounting		Via through-holes ⁵⁾											
Electrical connection		Via electrical connection box											
Nominal operating voltage		[V DC]		5, 12 and 24 ±10%									
Power		[W]		1, reduced to 0.35 with holding current reduction									
Duty cycle		[%]		100									
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)											

1) C=Normally closed.

2) U=Normally open/mid-position pressurised.

3) E=Normally exhausted.

4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.

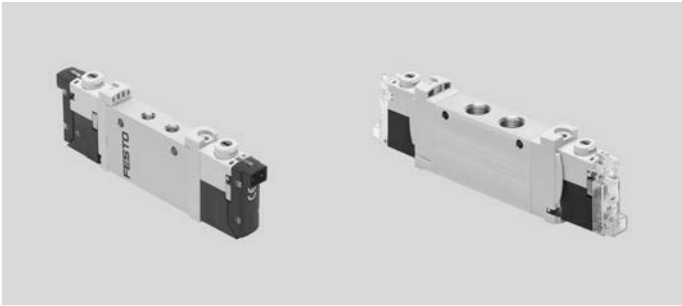
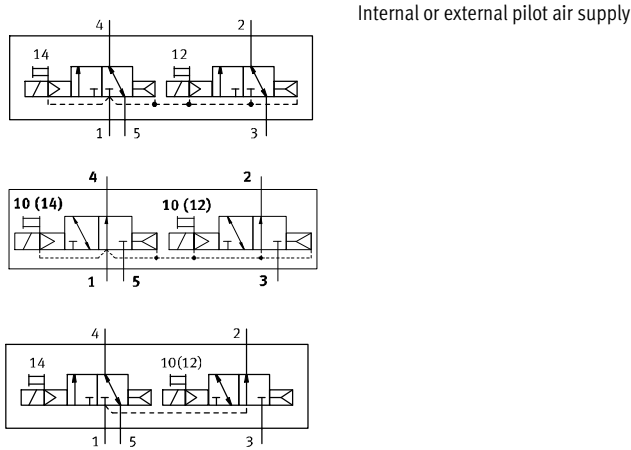
5) If several valves are to be screwed together via the through-holes to form a block, a minimum gap of 0.3 mm must be ensured by placing spacer discs between them.

Operating conditions		VUVG-LK	VUVG-L
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)	
Ambient temperature	[°C]	–5 ... +50	–5 ... +50, –5 ... +60 with holding current reduction
Temperature of medium	[°C]	–5 ... +50	–5 ... +50 –5 ... +60 with holding current reduction

Materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR

Solenoid valves VUVG ★ , in-line valves G1/8

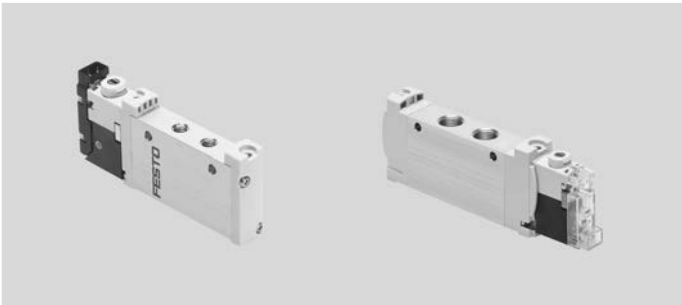
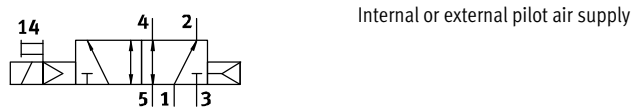
Data sheet – 2x 3/2-way valve



Technical data			Download CAD data → www.festo.com		
			VUVG-LK	VUVG-L	
Valve function			T32-A	T32-A	T32-M
Operating pressure	Internal	[bar]	1.5 ... 7	1.5 ... 8	3 ... 8
	External	[bar]	–	1.5 ... 10	–0.9 ... +10
Pilot pressure ¹⁾		[bar]	–	1.5 ... 8	3.5 ... 8
Standard nominal flow rate		[l/min]	570	560 ... 590	500 ... 550
Switching time on/off		[ms]	13/20	12/25	11/18

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/2-way valve, single solenoid

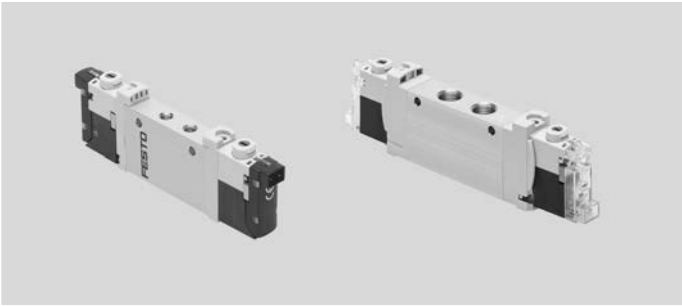
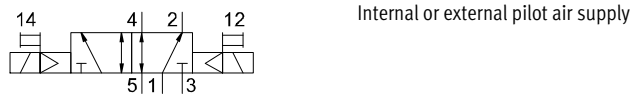


Technical data			Download CAD data → www.festo.com		
			VUVG-LK	VUVG-L	
Valve function			M52-A	M52-A	M52-M
Operating pressure	Internal	[bar]	2.5 ... 7	2.5 ... 8	3 ... 8
	External	[bar]	–	–0.9 ... +10	–0.9 ... +8
Pilot pressure ¹⁾		[bar]	–	2.5 ... 8	3 ... 8
Standard nominal flow rate		[l/min]	660	730	730
Switching time on/off		[ms]	14/24	14/22	13/37

1) Minimum pilot pressure 50% of operating pressure.

Solenoid valves VUVG ★ , in-line valves G1/8

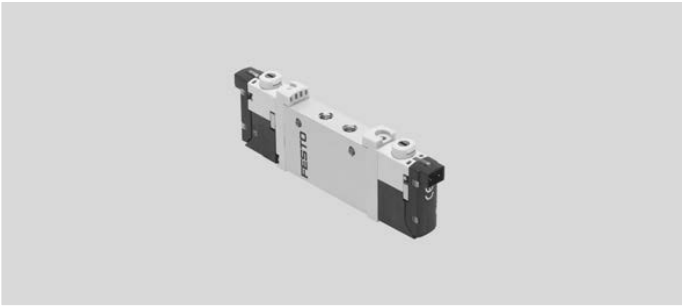
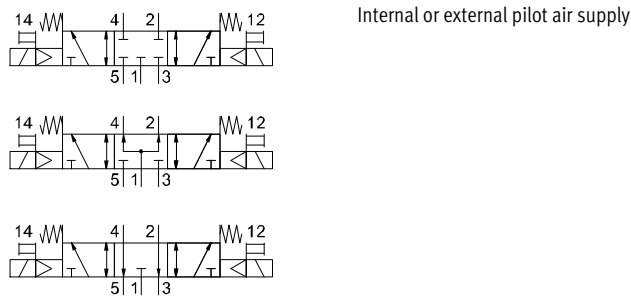
Data sheet – 5/2-way valve, double solenoid



Technical data			Download CAD data → www.festo.com	
			VUVG-LK	VUVG-L
Valve function			B52	B52
Operating pressure	Internal	[bar]	1.5 ... 7	1.5 ... 8
	External	[bar]	–	–0.9 ... +10
Pilot pressure ¹⁾		[bar]	–	1.5 ... 8
Standard nominal flow rate		[l/min]	660	780
Changeover time		[ms]	8	8

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/3-way valve



Technical data			Download CAD data → www.festo.com	
			VUVG-L	
Valve function			P53C	
Operating pressure	Internal	[bar]	3 ... 8	
	External	[bar]	–0.9 ... +10	
Pilot pressure ¹⁾		[bar]	3 ... 8	
Standard nominal flow rate		[l/min]	550 ... 650	
Switching time on/off		[ms]	12/40	
Changeover time		[ms]	14	

1) Minimum pilot pressure 50% of operating pressure.

Electrically and pneumatically actuated directional control valves > Universal directional control valves >

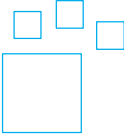
Solenoid valves VUVG ★ , in-line valves G1/8

Order code – VUVG-LK

VUVG	-	L	K	14	-	-	-	-	T	-	-	1	-	L	-	S
Type of directional control valve																Version
In-line valve		L														S Core features
Design principle																Display
Piston spool with sealing ring			K												L	LED
Size																Circuitry
14 mm				14											-	Without holding current reduction (HCR)
Valve function																Electrical connection
2x 3/2-way valve, normally closed									T32C							H2 Connection pattern H, horizontal plug
5/2-way valve, single solenoid									M52							R8 Individual plug M8, 3-pin
5/2-way valve, double solenoid									B52							Nominal operating voltage
Reset method															1	24 V DC
Pneumatic spring with T32 and M52									A							Exhausting with VUVG-L
With B52 and P53									-						-	Thread G1/8
Pilot air supply																Pneumatic connection
Internal									-							G18 G1/8 thread
Manual override																Q4 Push-in connector 4 mm
Non-detenting, detenting									T							Q6 Push-in connector 6 mm
																Q8 Push-in connector 8 mm

Solenoid valves VUVG ★ , in-line valves G1/8

Ordering – Product options



Configurable product

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The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

★ Quick ordering¹⁾

Part no.	Type
In-line valve G1/8, 2x 3/2-way valve	
8042566	VUVG-LK14-T32C-AT-G18-1R8L-S
8042562	VUVG-LK14-T32C-AT-G18-1H2L-S
In-line valve G1/8, 5/2-way single solenoid valve	
8042567	VUVG-LK14-M52-AT-G18-1R8L-S
8042563	VUVG-LK14-M52-AT-G18-1H2L-S

Part no.	Type
In-line valve G1/8, 5/2-way double solenoid valve	
8042568	VUVG-LK14-B52-T-G18-1R8L-S
8042564	VUVG-LK14-B52-T-G18-1H2L-S

Part no.	Type
In-line valve G1/8, 2x 3/2-way valve	
574226	VUVG-L14-T32C-AT-G18-1R8L
In-line valve G1/8, 5/2-way single solenoid valve	
574229	VUVG-L14-M52-AT-G18-1R8L

Part no.	Type
In-line valve G1/8, 5/2-way double solenoid valve	
574230	VUVG-L14-B52-T-G18-1R8L
In-line valve G1/8, 5/3-way valve	
574231	VUVG-L14-P53C-T-G18-1R8L

1) All products in this table are easy to select and quick to order.

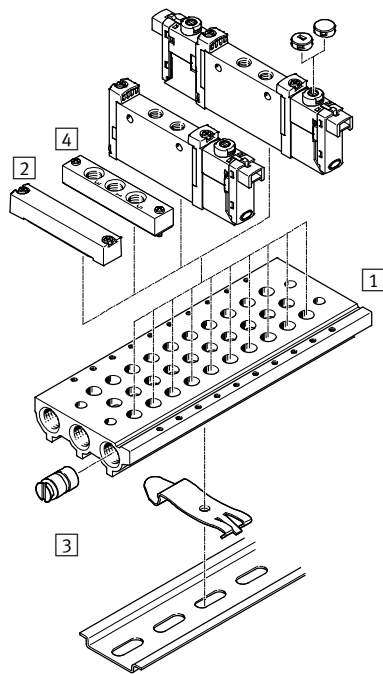
Solenoid valves VUVG ★ , in-line valves G1/8

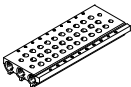
Accessories – Ordering data

Order code – Manifold rails

VABM	-	L1	-	14	S	-	G14	-	
Valve manifold parts							Number of valve positions		
Manifold rail	VABM						2 to 10, 12, 14 and 16		
Valve series							Ports 1, 3, 5		
VUVG	L1						G14 Thread G1/4		
Size									
14 mm				14					
Manifold rail with ports 1, 3, 5									
For G1/8 in-line valves					S				

Manifold assembly



		Part no.	Type
1 Manifold rail			
	For G1/8	★ 566618	VABM-L1-14S-G14-2
		★ 566619	VABM-L1-14S-G14-3
		★ 566620	VABM-L1-14S-G14-4
		566621	VABM-L1-14S-G14-5
		★ 566622	VABM-L1-14S-G14-6
		566623	VABM-L1-14S-G14-7
		★ 566624	VABM-L1-14S-G14-8
		566625	VABM-L1-14S-G14-9
		★ 566626	VABM-L1-14S-G14-10
		566627	VABM-L1-14S-G14-12
		566628	VABM-L1-14S-G14-14
		566629	VABM-L1-14S-G14-16
2 Blanking plate			
	For G1/8	★ 569989	VABB-L1-14
3 Blanking plug			
	Separator for pressure zones	569996	VABD-10-B
4 Supply plate			
	For G1/8	569993	VABF-L1-14-P3A4-G18
Seals for in-line valves (10 pieces incl. 20 screws)			
	For VUVG-LK		
	For G1/8	★ 8043720	VABD-L1-14XK-S-G18-S
	For VUVG-L		
	For G1/8	★ 566675	VABD-L1-14X-S-G18

Solenoid valves VUVG ★ , in-line valves G1/4

Data sheet

Technical data		Download CAD data → www.festo.com											
		VUVG-L											
Valve function		T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position		C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾
Design		Piston spool with sealing cartridge											
Pneumatic spring reset method		Yes			No			Yes ⁵⁾	–	No	–		
Mechanical spring reset method		No			Yes			Yes ⁵⁾	–	Yes	Yes		
Port: in-line valve		1, 2, 3, 4, 5											
		12, 14											
		G1/4											
		M5											
Vacuum operation at port 1		No			Only with external pilot air supply								
Type of mounting		Via through-holes ⁶⁾ or on manifold rail											
Electrical connection		Via electrical connection box											
Nominal operating voltage		[V DC]	5, 12 and 24 ±10%										
Power		[W]	1, reduced to 0.35 with holding current reduction										
Duty cycle		[%]	100										
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)											

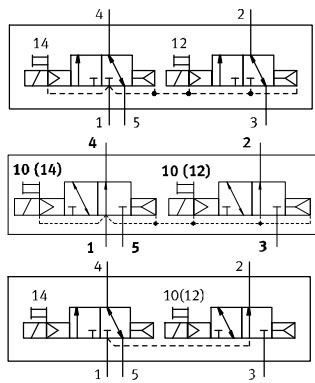
- 1) C=Normally closed.
- 2) U=Normally open/mid-position pressurised.
- 3) E=Normally exhausted.
- 4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.
- 5) Combined reset method.
- 6) If several valves are to be screwed together via the through-holes to form a block, a minimum distance of 0.3 mm must be ensured by placing spacer discs between them.

Operating conditions											
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]									
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)									
Ambient temperature	[°C]	–5 ... +50, –5 ... +60 with holding current reduction									
Temperature of medium	[°C]	–5 ... +50, –5 ... +60 with holding current reduction									

Materials											
Housing		Wrought aluminium alloy									
Seals		HNBR, NBR									

Solenoid valves VUVG ★ , in-line valves G1/4

Data sheet – 2x 3/2-way valve



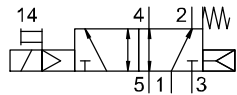
Internal or external pilot air supply



Technical data			Download CAD data → www.festo.com	
Valve function			VUVG-L	
			T32-A	T32-M
Operating pressure	Internal	[bar]	1.5 ... 8	3 ... 8
	External	[bar]	1.5 ... 10	−0.9 ... +10
Pilot pressure ¹⁾		[bar]	1.5 ... 8	2 ... 8
Standard nominal flow rate		[l/min]	880 ... 970	870 ... 990
Flow rate on manifold rail		[l/min]	780 ... 980	780 ... 820
Switching time on/off		[ms]	13/27	15/22

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/2-way valve, single solenoid



Internal or external pilot air supply

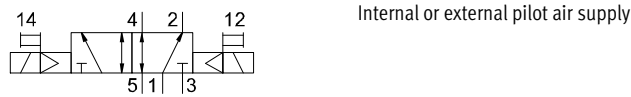


Technical data			Download CAD data → www.festo.com	
Valve function			VUVG-L	
			M52-R	M52-M
Operating pressure	Internal	[bar]	2.5 ... 8	3 ... 8
	External	[bar]	−0.9 ... +10	−0.9 ... +10
Pilot pressure ¹⁾		[bar]	2.5 ... 8	3 ... 8
Standard nominal flow rate		[l/min]	1300	1300
Flow rate on manifold rail		[l/min]	1300	1300
Switching time on/off		[ms]	15/31	10/45

1) Minimum pilot pressure 50% of operating pressure.

Solenoid valves VUVG ★ , in-line valves G1/4

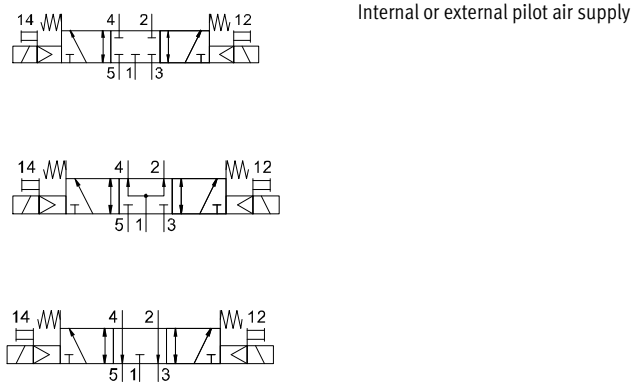
Data sheet – 5/2-way valve, double solenoid



Technical data				Download CAD data → www.festo.com
Valve function			VUVG-L	
			B52	
Operating pressure	Internal	[bar]	1.5 ... 8	
	External	[bar]	–0.9 ... +10	
Pilot pressure ¹⁾		[bar]	1.5 ... 8	
Standard nominal flow rate		[l/min]	1380	
Flow rate on manifold rail		[l/min]	1370	
Changeover time		[ms]	11	

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/3-way valve



Technical data				Download CAD data → www.festo.com
Valve function			VUVG-L	
			P53	
Operating pressure	Internal	[bar]	3 ... 8	
	External	[bar]	–0.9 ... +10	
Pilot pressure ¹⁾		[bar]	3 ... 8	
Standard nominal flow rate		[l/min]	910 ... 1200	
Flow rate on manifold rail		[l/min]	1050 ... 1220	
Switching time on/off		[ms]	15/48	
Changeover time		[ms]	29	

1) Minimum pilot pressure 50% of operating pressure.

Electrically and pneumatically actuated directional control valves > Universal directional control valves >

Solenoid valves VUVG ★ , in-line valves G1/4

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
➔ www.festo.com/catalogue/...

Enter the type code in the search field.

★ Quick ordering¹⁾

Part no.	Type
In-line valve G1/4, 3/2-way valve	
8031525	VUVG-L18-T32C-AT-G14-1R8L
In-line valve G1/4, 5/2-way single solenoid valve	
8031531	VUVG-L18-M52-RT-G14-1R8L
8031532	VUVG-L18-M52-MT-G14-1R8L

Part no.	Type
In-line valve G1/4, 5/3-way valve	
8031534	VUVG-L18-P53C-T-G14-1R8L

1) All products in this table are easy to select and quick to order.

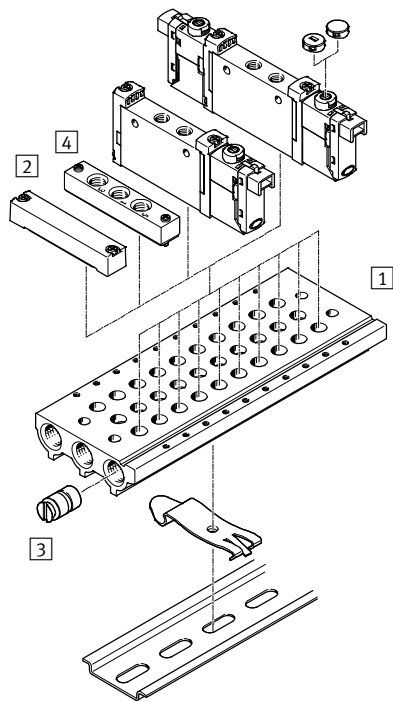
Solenoid valves VUVG ★ , in-line valves G1/4

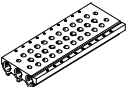
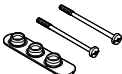
Accessories – Ordering data

Order code – Manifold rails

VABM	-	L1	-	18	S	-	G38	-	
Valve manifold parts						Number of valve positions			
Manifold rail						VABM	2 to 10, 12, 14 and 16		
Valve series						Ports 1, 3, 5			
VUVG						L1	G38 Thread G3/8		
Size									
18 mm						18			
Manifold rail with ports 1, 3, 5									
For G1/4 in-line valves					S				

Manifold assembly



		Part no.	Type
1 Manifold rail			
	For G1/4	★ 574455	VABM-L1-18S-G38-2
		★ 574456	VABM-L1-18S-G38-3
		★ 574457	VABM-L1-18S-G38-4
		574458	VABM-L1-18S-G38-5
		★ 574459	VABM-L1-18S-G38-6
		574460	VABM-L1-18S-G38-7
		★ 574461	VABM-L1-18S-G38-8
		574462	VABM-L1-18S-G38-9
		★ 574463	VABM-L1-18S-G38-10
		574464	VABM-L1-18S-G38-12
		574465	VABM-L1-18S-G38-14
		574466	VABM-L1-18S-G38-16
2 Blanking plate			
	For G1/4	★ 574482	VABB-L1-18
3 Blanking plug			
	Separator for pressure zones	574483	VABD-14-B
4 Supply plate			
	For G1/4	574481	VABF-L1-18-P3A4-G14
Seals for in-line valves (10 pieces incl. 20 screws)			
	For G1/4	★ 574479	VABD-L1-18X-S-G14

Electrically and pneumatically actuated directional control valves > Universal directional control valves >

Solenoid valves VUVG ★ , sub-base valves M5/M7

Data sheet

Technical data		Download CAD data → www.festo.com		
		VUVG-BK		
Valve function		T32-A	M52-A	B52
Normal position		C ¹⁾	–	–
Design		Piston spool with sealing ring		
Pneumatic spring reset method		Yes	Yes	–
Port	2, 4	M5 or M7 in manifold rail		
Type of mounting		On manifold rail		
Electrical connection		Via electrical connection box		
Nominal operating voltage	[V DC]	24 ±10%		
Power	[W]	0.7		
Duty cycle	[%]	100		
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)		

Technical data		Download CAD data → www.festo.com											
		VUVG-B											
Valve function		T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position		C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾
Design		Piston spool with sealing cartridge											
Pneumatic spring reset method		Yes			No			Yes ⁵⁾	–	No	–		
Mechanical spring reset method		No			Yes			Yes ⁵⁾	–	Yes	Yes		
Port	1, 3, 5	G1/8 in manifold rail											
	2, 4	M5 or M7 in manifold rail											
	12/14, 82/84	M5 in manifold rail											
Vacuum operation at port 1		No			Only with external pilot air supply								
Type of mounting		On manifold rail											
Electrical connection		Via electrical connection box											
Nominal operating voltage		[V DC]		5, 12 and 24 ±10%									
Power		[W]		1, reduced to 0.35 with holding current reduction									
Duty cycle		[%]		100									
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)											

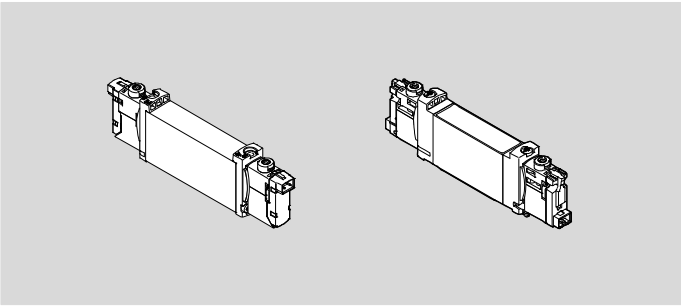
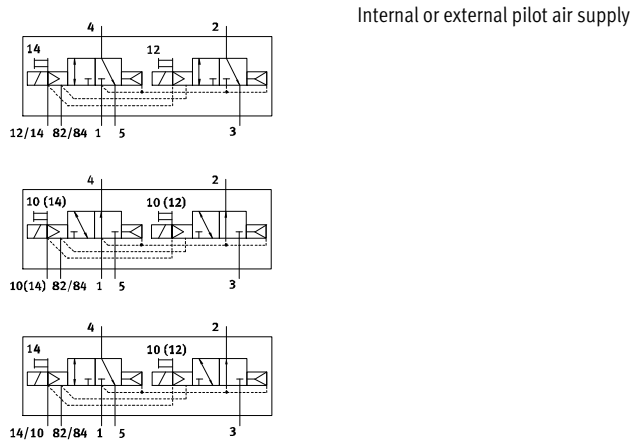
- 1) C=Normally closed.
- 2) U=Normally open/mid-position pressurised.
- 3) E=Normally exhausted.
- 4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.
- 5) Combined reset method.

Operating conditions		VUVG-BK	VUVG-B
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)	
Ambient temperature	[°C]	–5 ... +50	–5 ... +50, –5 ... +60 with holding current reduction
Temperature of medium	[°C]	–5 ... +50	–5 ... +50, –5 ... +60 with holding current reduction

Materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR

Solenoid valves VUVG ★ , sub-base valves M5/M7

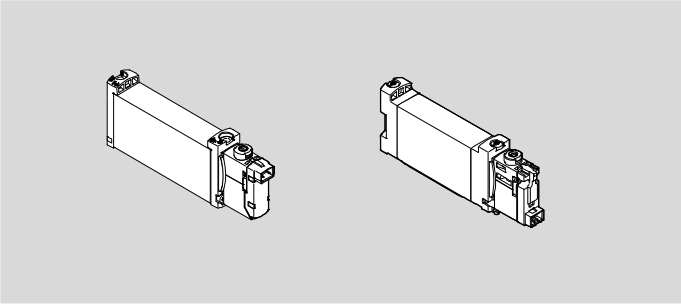
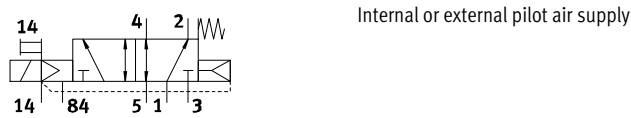
Data sheet – 2x 3/2-way valve



Technical data			Download CAD data → www.festo.com		
			VUVG-BK	VUVG-B	
Valve function			T32-A	T32-A	T32-M
Operating pressure	Internal	[bar]	1.5 ... 7	1.5 ... 8	3 ... 8
	External	[bar]	–	1.5 ... 10	–0.9 ... +10
Pilot pressure ¹⁾		[bar]	–	1.5 ... 8	2 ... 8
Flow rate on manifold rail M5		[l/min]	160	150	120 ... 130
Flow rate on manifold rail M7		[l/min]	160	160	130 ... 140
Switching time on/off		[ms]	12/14	6/16	8/11

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/2-way valve, single solenoid

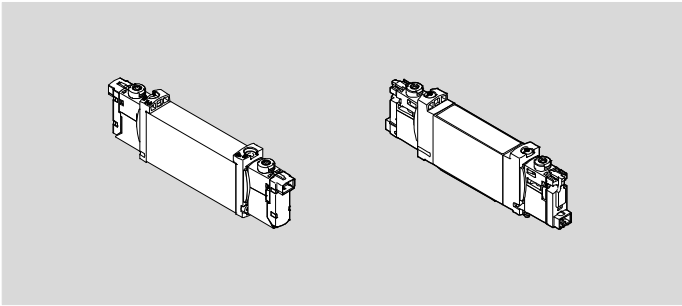
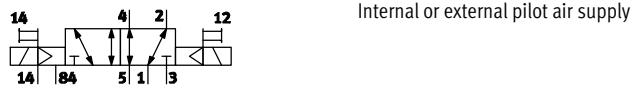


Technical data			Download CAD data → www.festo.com		
			VUVG-BK	VUVG-B	
Valve function			M52-A	M52-R	M52-M
Operating pressure	Internal	[bar]	2.5 ... 7	2.5 ... 8	3 ... 8
	External	[bar]	–	–0.9 ... +10	–0.9 ... +8
Pilot pressure ¹⁾		[bar]	–	2.5 ... 8	3 ... 8
Flow rate on manifold rail M5		[l/min]	160	210	180
Flow rate on manifold rail M7		[l/min]	160	270	230
Switching time on/off		[ms]	14/17	7/19	8/24

1) Minimum pilot pressure 50% of operating pressure.

Solenoid valves VUVG ★ , sub-base valves M5/M7

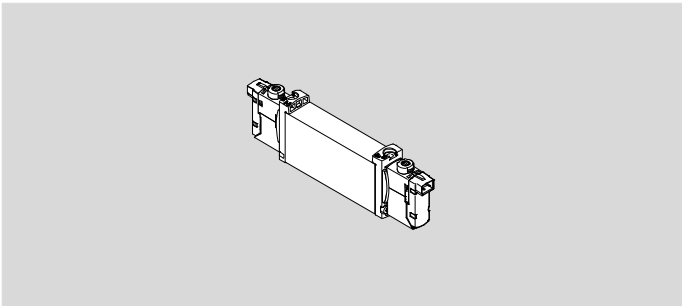
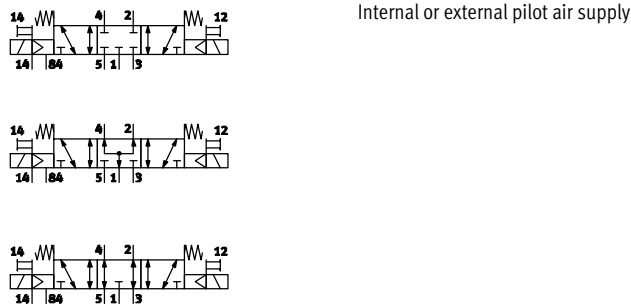
Data sheet – 5/2-way valve, double solenoid



Technical data			Download CAD data → www.festo.com	
			VUVG-BK	VUVG-B
Valve function			B52	B52
Operating pressure	Internal	[bar]	1.5 ... 7	1.5 ... 8
	External	[bar]	–	–0.9 ... +10
Pilot pressure ¹⁾		[bar]	–	1.5 ... 8
Flow rate on manifold rail M5		[l/min]	160	210
Flow rate on manifold rail M7		[l/min]	160	270
Changeover time		[ms]	7	7

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/3-way valve



Technical data			Download CAD data → www.festo.com	
			VUVG-B	
			P53	
Operating pressure	Internal	[bar]	3 ... 8	
	External	[bar]	–0.9 ... +10	
Pilot pressure ¹⁾		[bar]	3 ... 8	
Flow rate on manifold rail M5		[l/min]	200	
Flow rate on manifold rail M7		[l/min]	250	
Switching time on/off		[ms]	11/30	
Changeover time		[ms]	14	

1) Minimum pilot pressure 50% of operating pressure.

Solenoid valves VUVG ★ , sub-base valves M5/M7

Order code – VUVG-BK

VUVG	-	B	K	10	-		-	A		T	F	-	1			L	-	S
Type of directional control valve																		Version
Sub-base, manifold valve including seal and screws		B																S Core features
Design principle																		Display
Piston spool with sealing ring			K														L	LED
Size																		Circuitry
10 mm				10														- Without holding current reduction (HCR)
Valve function																		Electrical connection
2x 3/2-way valve, normally closed																		H2 Connection pattern H, horizontal plug
5/2-way valve, single solenoid																		R8 Individual plug M8, 3-pin
5/2-way valve, double solenoid																		Nominal operating voltage
																		1 24 V DC
Reset method																		Pneumatic connection
Pneumatic spring with T32 and M52									A									F In manifold rail
With B52									-									
Pilot air supply																		
Internal										-								
Manual override																		
Non-detenting, detenting											T							

Electrically and pneumatically actuated directional control valves > Universal directional control valves >

Solenoid valves VUVG ★ , sub-base valves M5/M7

Order code – VUVG-B

VUVG	–	B	10	–	–	Z		F	–			L	–		
Type of directional control valve														Version	
Sub-base, manifold valve including seal and screws														– Extended features	
Design principle														Accessories for valve/ connecting cable	
Piston spool with sealing cartridge														W1...4 ⁵⁾ Connection pattern H, not sheathed, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m	
Size														C1...4 ⁵⁾ Connection pattern H, sheathed, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m	
10 mm														N1...4 ⁴⁾ M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m	
Valve function ¹⁾														Display	
2x 3/2-way valve, normally closed														L LED	
2x 3/2-way valve, normally open														Circuitry	
2x 3/2-way valve, 1x normally open, 1x normally closed														– Without holding current reduction (HCR)	
5/2-way valve, single solenoid														R ³⁾ With holding current reduction (HCR)	
5/2-way valve, double solenoid														Electrical connection	
5/3-way valve, mid-position closed														H2 Connection pattern H, horizontal plug	
5/3-way valve, mid-position exhausted														H3 Connection pattern H, vertical plug	
5/3-way valve, mid-position pressurised														L1...4 ²⁾ With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m	
Reset method														R8 ²⁾ Individual plug M8, 3-pin	
Pneumatic spring with T32 and M52														Nominal operating voltage	
Mechanical spring with T32 and M52														1 24 V DC	
Pneu./mech. spring with M52														5 12 V DC	
With B52 and P53														4 5 V DC	
Pilot air supply														Pneumatic connection	
External														F In manifold rail	
Manual override															
Non-detenting, detenting															
Detenting, without accessories															

2) Not with nominal operating voltage 4

3) Only with nominal operating voltage 1, not in combination with electrical connection R8

4) Straight: N1 = 2.5 m, N2 = 5 m
Angled: N3 = 2.5 m, N4 = 5 m
Only in combination with electrical connection R8

5) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m
Only in combination with electrical connection H2 or H3

Solenoid valves VUVG ★ , sub-base valves M5/M7

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

★ Quick ordering¹⁾

Part no.	Type
Sub-base valve M5/M7, 3/2-way valve	
8042558	VUVG-BK10-T32C-AT-F-1R8L-S
8042554	VUVG-BK10-T32C-AT-F-1H2L-S
Sub-base valve M5/M7, 5/2-way single solenoid valve	
8042559	VUVG-BK10-M52-AT-F-1R8L-S
8042555	VUVG-BK10-M52-AT-F-1H2L-S

Part no.	Type
Sub-base valve M5/M7, 5/2-way double solenoid valve	
8042560	VUVG-BK10-B52-T-F-1R8L-S
8042556	VUVG-BK10-B52-T-F-1H2L-S

1) All products in this table are easy to select and quick to order.

Electrically and pneumatically actuated directional control valves > Universal directional control valves >

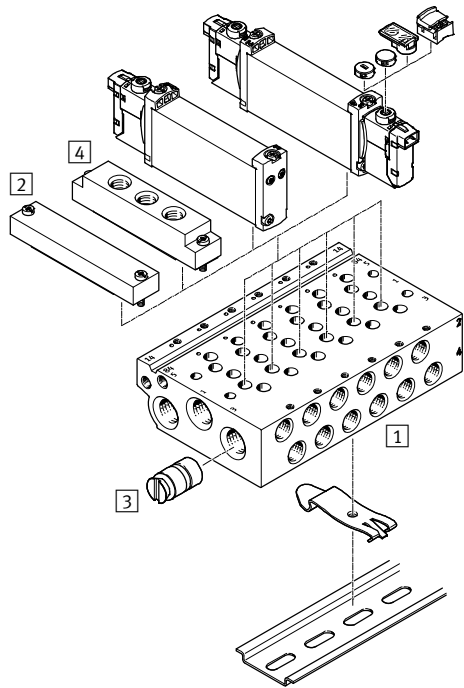
Solenoid valves VUVG ★ , sub-base valves M5/M7

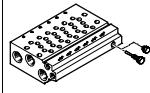
Accessories – Ordering data

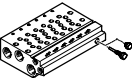
Order code – Manifold rails

VABM	-	L1	-	10	-	G18	-	
Valve manifold parts					Number of valve positions			
Manifold rail		VABM			2 to 10, 12, 14 and 16			
Valve series					Ports 1, 3, 5			
VUVG		L1			G18 Thread G1/8			
Size								
10 mm		10						
Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84								
Port 2 and 4 with thread M5					W			
Port 2 and 4 with thread M7					HW			

Manifold assembly



		Part no.	Type
1 Manifold rail			
	For size 10 mm (M5)	★ 566582	VABM-L1-10W-G18-2
		★ 566583	VABM-L1-10W-G18-3
		★ 566584	VABM-L1-10W-G18-4
		566585	VABM-L1-10W-G18-5
		★ 566586	VABM-L1-10W-G18-6
		566587	VABM-L1-10W-G18-7
		★ 566588	VABM-L1-10W-G18-8
		566589	VABM-L1-10W-G18-9
		★ 566590	VABM-L1-10W-G18-10
		566591	VABM-L1-10W-G18-12
		566592	VABM-L1-10W-G18-14
		566593	VABM-L1-10W-G18-16

		Part no.	Type
1 Manifold rail			
	For size 10 mm (M7)	★	566606 VABM-L1-10HW-G18-2
		★	566607 VABM-L1-10HW-G18-3
		★	566608 VABM-L1-10HW-G18-4
			566609 VABM-L1-10HW-G18-5
		★	566610 VABM-L1-10HW-G18-6
			566611 VABM-L1-10HW-G18-7
		★	566612 VABM-L1-10HW-G18-8
			566613 VABM-L1-10HW-G18-9
		★	566614 VABM-L1-10HW-G18-10
			566615 VABM-L1-10HW-G18-12
			566616 VABM-L1-10HW-G18-14
			566617 VABM-L1-10HW-G18-16
2 Blanking plate			
	For size 10 mm	★	566495 VABB-L1-10-W
3 Blanking plug			
	Separator for pressure zones	569994	VABD-6-B
4 Supply plate			
	For M5	569991	VABF-L1-10-P3A4-M5
	For M7	569992	VABF-L1-10-P3A4-M7
Seals for in-line valves (10 pieces incl. 20 screws)			
	For size 10 mm	566674	VABD-L1-10B-S-M7

Solenoid valves VUVG ★, sub-base valves G1/8

Data sheet

Technical data		Download CAD data → www.festo.com		
		VUVG-BK		
Valve function		T32-A	M52-A	B52
Normal position		C ¹⁾	–	–
Design		Piston spool with sealing ring		
Pneumatic reset method		Yes	Yes	–
Port	2, 4	G1/8 in manifold rail		
Type of mounting		On manifold rail		
Electrical connection		Via electrical connection box		
Nominal operating voltage	[V DC]	24 ±10%		
Power	[W]	0.7		
Duty cycle	[%]	100		
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)		

Technical data		Download CAD data → www.festo.com											
		VUVG-B											
Valve function		T32-A			T32-M			M52-A	B52	M52-M	P53		
Normal position		C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾
Design		Piston spool with sealing cartridge											
Pneumatic reset method		Yes			No			Yes	–	No	–		
Mechanical reset method		No			Yes			No	–	Yes	Yes		
Port	1, 3, 5	G1/4 in manifold rail											
	2, 4	G1/8 in manifold rail											
	12/14, 82/84	M5 in manifold rail											
Vacuum operation at port 1		No			Only with external pilot air supply								
Type of mounting		On manifold rail											
Electrical connection		Via electrical connection box											
Nominal operating voltage		[V DC]		5, 12 and 24 ±10%									
Power		[W]		1, reduced to 0.35 with holding current reduction									
Duty cycle		[%]		100									
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)											

1) C=Normally closed.

2) U=Normally open/mid-position pressurised.

3) E=Normally exhausted.

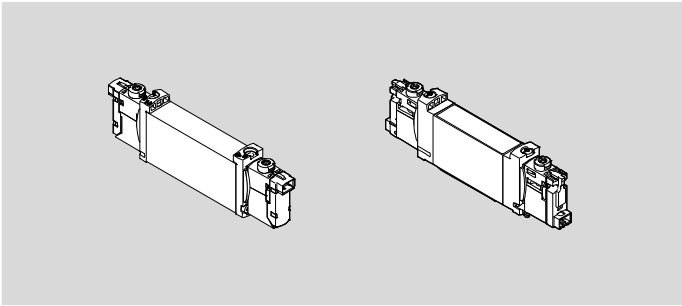
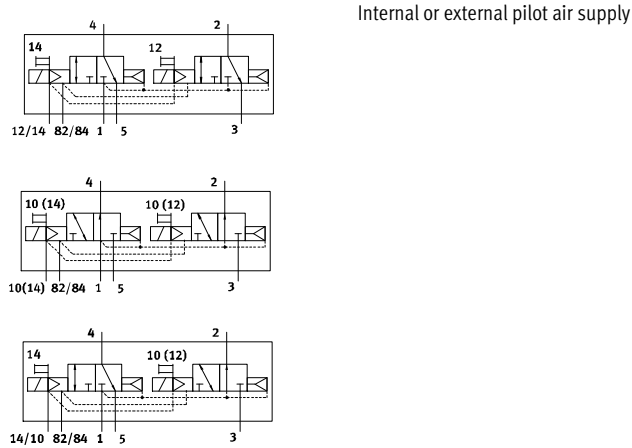
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.

Operating conditions		VUVG-BK	VUVG-B
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)	
Ambient temperature	[°C]	–5 ... +50	–5 ... +50, –5 ... +60 with holding current reduction
Temperature of medium	[°C]	–5 ... +50	–5 ... +50, –5 ... +60 with holding current reduction

Materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR

Solenoid valves VUVG ★ , sub-base valves G1/8

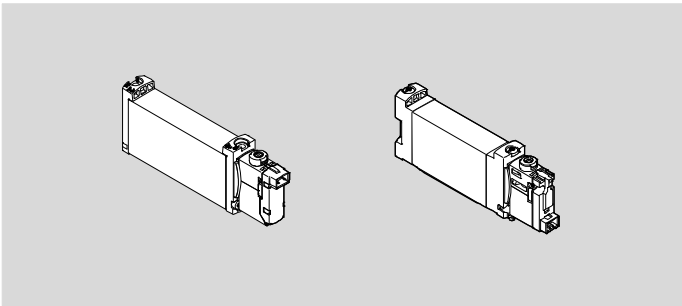
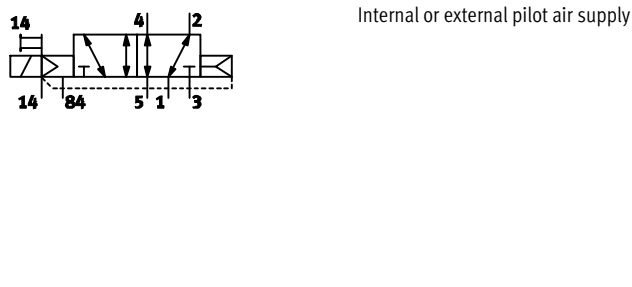
Data sheet – 2x 3/2-way valve



Technical data			Download CAD data → www.festo.com		
			VUVG-BK	VUVG-B	
Valve function			T32-A	T32-A	T32-M
Operating pressure	Internal	[bar]	1.5 ... 7	1.5 ... 8	3 ... 8
	External	[bar]	–	1.5 ... 10	–0.9 ... +10
Pilot pressure ¹⁾		[bar]	–	1.5 ... 8	3 ... 8
Flow rate on manifold rail		[l/min]	350	510	410 ... 430
Switching time on/off		[ms]	13/20	12/25	11/18

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/2-way valve, single solenoid

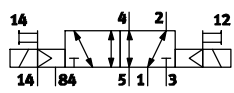


Technical data			Download CAD data → www.festo.com		
			VUVG-BK	VUVG-B	
Valve function			M52-A	M52-A	M52-M
Operating pressure	Internal	[bar]	2.5 ... 7	2.5 ... 8	3 ... 8
	External	[bar]	–	–0.9 ... +10	–0.9 ... +8
Pilot pressure ¹⁾		[bar]	–	2.5 ... 8	3 ... 8
Flow rate on manifold rail		[l/min]	380	520	570
Switching time on/off		[ms]	14/24	14/24	13/37

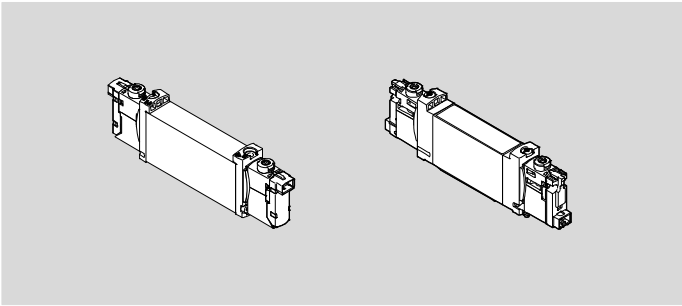
1) Minimum pilot pressure 50% of operating pressure.

Solenoid valves VUVG ★ , sub-base valves G1/8

Data sheet – 5/2-way valve, double solenoid



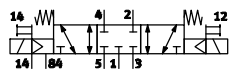
Internal or external pilot air supply



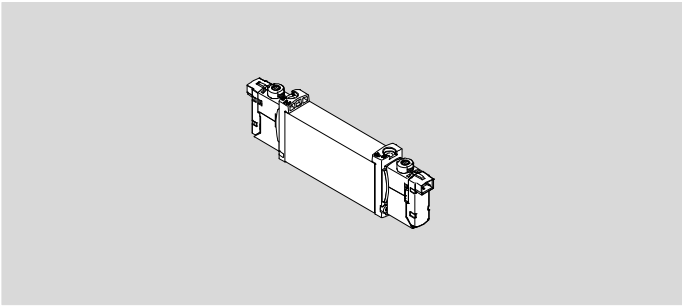
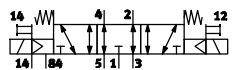
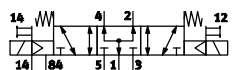
Technical data			Download CAD data → www.festo.com	
			VUVG-BK	VUVG-B
			B52	B52
Operating pressure	Internal	[bar]	1.5 ... 7	1.5 ... 8
	External	[bar]	–	–0.9 ... +10
Pilot pressure ¹⁾		[bar]	–	1.5 ... 8
Flow rate on manifold rail		[l/min]	380	570
Changeover time		[ms]	8	8

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/3-way valve



Internal or external pilot air supply



Technical data			Download CAD data → www.festo.com	
			VUVG-B	
			P53	
Operating pressure	Internal	[bar]	3 ... 8	
	External	[bar]	–0.9 ... +10	
Pilot pressure ¹⁾		[bar]	3 ... 8	
Flow rate on manifold rail		[l/min]	460 ... 520	
Switching time on/off		[ms]	12/40	
Changeover time		[ms]	14	

1) Minimum pilot pressure 50% of operating pressure.

Electrically and pneumatically actuated directional control valves > Universal directional control valves >

Solenoid valves VUVG ★ , sub-base valves G1/8

Order code – VUVG-BK

VUVG	-	B	K	14	-	-	-	-	T	F	-	1	-	-	L	-	S
Type of directional control valve																	Version
Sub-base, manifold valve including seal and screws																	S Core features
Design principle																	Display
Piston spool with sealing ring																	L LED
Size																	Circuitry
14 mm																	- Without holding current reduction (HCR)
Valve function																	Electrical connection
2x 3/2-way valve, normally closed																	H2 Connection pattern H, horizontal plug
5/2-way valve, single solenoid																	R8 Individual plug M8, 3-pin
5/2-way valve, double solenoid																	Nominal operating voltage
																	1 24 V DC
Reset method																	Pneumatic connection
Pneumatic spring with T32 and M52																	F In manifold rail
With B52																	
Pilot air supply																	
Internal																	
Manual override																	
Non-detenting, detenting																	T

08

Valves

Solenoid valves VUVG ★, sub-base valves G1/8

Order code – VUVG-B

VUVG	–	B	14	–	–	Z		F	–			L	–	–
Type of directional control valve														Version
Sub-base, manifold valve including seal and screws		B												– Extended features
Design principle														Accessories for valve/ connecting cable
Piston spool with sealing cartridge			–											W1...4 ⁵⁾ Connection pattern H, not sheathed, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
Size														C1...4 ⁵⁾ Connection pattern H, sheathed, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
14 mm			14											N1...4 ⁴⁾ M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
Valve function ¹⁾														Display
2x 3/2-way valve, normally closed						T32C								L LED
2x 3/2-way valve, normally open						T32U								Circuitry
2x 3/2-way valve, 1x normally open, 1x normally closed						T32H								– Without holding current reduction (HCR)
5/2-way valve, single solenoid						M52								R ³⁾ With holding current reduction (HCR)
5/2-way valve, double solenoid						B52								Electrical connection
5/3-way valve, mid-position closed						P53C								H2 Connection pattern H, horizontal plug
5/3-way valve, mid-position exhausted						P53E								H3 Connection pattern H, vertical plug
5/3-way valve, mid-position pressurised						P53U								L1...4 ²⁾ With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
Reset method														R8 ²⁾ Individual plug M8, 3-pin
Pneumatic spring with T32 and M52						A								Nominal operating voltage
Mechanical spring with T32 and M52						M								1 24 V DC
With B52 and P53						–								5 12 V DC
Pilot air supply														4 5 V DC
External						Z								Pneumatic connection
Manual override														F In manifold rail
Non-detenting, detenting							T							
Detenting, without accessories							Y							

2) Not with nominal operating voltage 4

3) Only with nominal operating voltage 1, not in combination with electrical connection R8

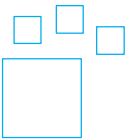
4) Straight: N1 = 2.5 m, N2 = 5 m
Angled: N3 = 2.5 m, N4 = 5 m
Only in combination with electrical connection R8

5) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m
Only in combination with electrical connection H2 or H3

Electrically and pneumatically actuated directional control valves > Universal directional control valves >

Solenoid valves VUVG ★ , sub-base valves G1/8

Ordering – Product options



Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

★ Quick ordering¹⁾

Part no.	Type
Sub-base valve G1/8, 3/2-way valve	
8042574	VUVG-BK14-T32C-AT-F-1R8L-S
8042570	VUVG-BK14-T32C-AT-F-1H2L-S
Sub-base valve G1/8, 5/2-way single solenoid valve	
8042575	VUVG-BK14-M52-AT-F-1R8L-S
8042571	VUVG-BK14-M52-AT-F-1H2L-S

Part no.	Type
Sub-base valve G1/8, 5/2-way double solenoid valve	
8042576	VUVG-BK14-B52-T-F-1R8L-S
8042572	VUVG-BK14-B52-T-F-1H2L-S

1) All products in this table are easy to select and quick to order.

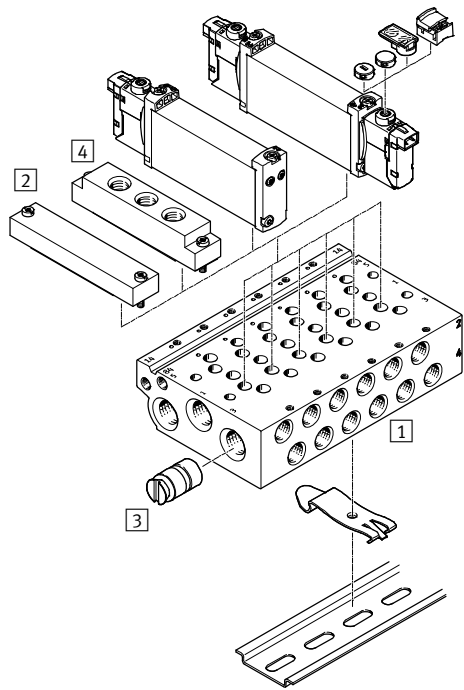
Solenoid valves VUVG ★, sub-base valves G1/8

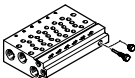
Accessories – Ordering data

Order code – Manifold rails

VABM	-	L1	-	14	W	-	G14	-	
Valve manifold parts							Number of valve positions		
Manifold rail	VABM						2 to 10, 12, 14 and 16		
Valve series							Ports 1, 3, 5		
VUVG	L1						G14 Thread G1/4		
Size									
14 mm				14					
Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84									
For G1/8 sub-base valves					W				

Manifold assembly



		Part no.	Type
1 Manifold rail			
	For G1/8	★ 566642	VABM-L1-14W-G14-2
		★ 566643	VABM-L1-14W-G14-3
		★ 566644	VABM-L1-14W-G14-4
		566645	VABM-L1-14W-G14-5
		★ 566646	VABM-L1-14W-G14-6
		566647	VABM-L1-14W-G14-7
		★ 566648	VABM-L1-14W-G14-8
		566649	VABM-L1-14W-G14-9
		★ 566650	VABM-L1-14W-G14-10
		566651	VABM-L1-14W-G14-12
		566652	VABM-L1-14W-G14-14
		566653	VABM-L1-14W-G14-16
2 Blanking plate			
	For G1/8	★ 569989	VABB-L1-14
3 Blanking plug			
	Separator for pressure zones	569996	VABD-10-B
4 Supply plate			
	For G1/8	569993	VABF-L1-14-P3A4-G18
Seals for in-line valves (10 pieces incl. 20 screws)			
	For G1/8	566676	VABD-L1-14B-S-G18

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Valves

Solenoid valves VUVG ★ , sub-base valves G1/4

Data sheet

Technical data		Download CAD data → www.festo.com												
		VUVG-B												
Valve function		T32-A			T32-M			M52-R	B52	M52-M	P53			
Normal position		C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾	
Design		Piston spool with sealing cartridge												
Pneumatic spring reset method		Yes			No			Yes ⁵⁾	–	No	–			
Mechanical spring reset method		No			Yes			Yes ⁵⁾	–	Yes	Yes			
Port	1, 3, 5	G3/8 in manifold rail												
	2, 4	G1/4 in manifold rail												
	12/14, 82/84	M5 in manifold rail												
Vacuum operation at port 1		No			Only with external pilot air supply									
Type of mounting		On manifold rail												
Electrical connection		Via electrical connection box												
Nominal operating voltage		[V DC]	5, 12 and 24 ±10%											
Power		[W]	1, reduced to 0.35 with holding current reduction											
Duty cycle		[%]	100											
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with plug M8x1)												

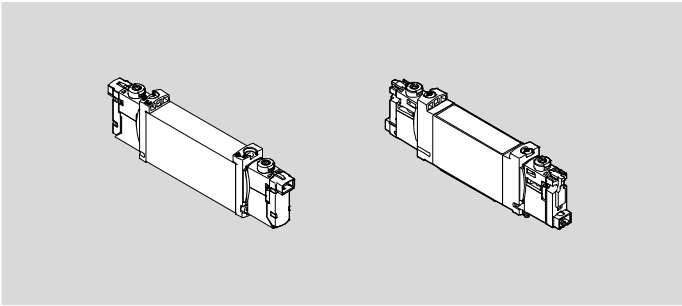
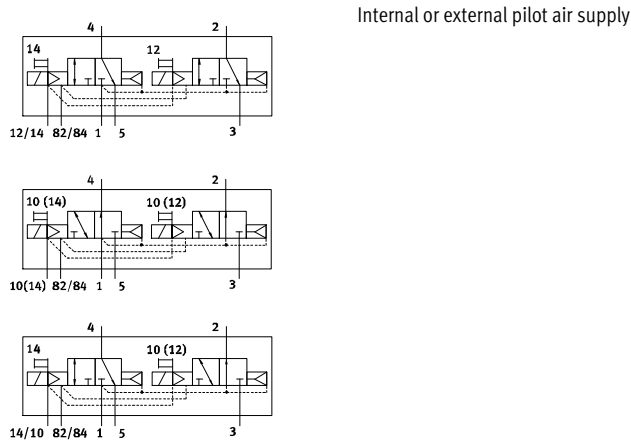
- 1) C=Normally closed.
- 2) U=Normally open/mid-position pressurised.
- 3) E=Normally exhausted.
- 4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.
- 5) Combined reset method.

Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature	[°C] –5 ... +50, –5 ... +60 with holding current reduction
Temperature of medium	[°C] –5 ... +50, –5 ... +60 with holding current reduction

Materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR

Solenoid valves VUVG ★ , sub-base valves G1/4

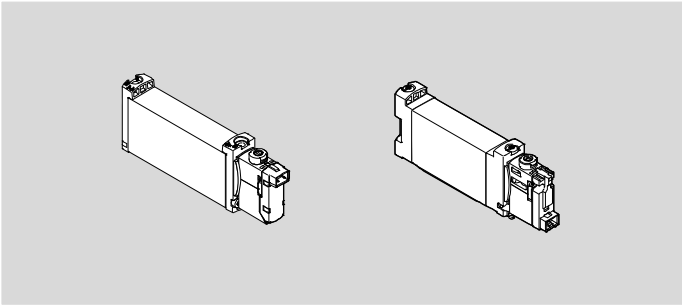
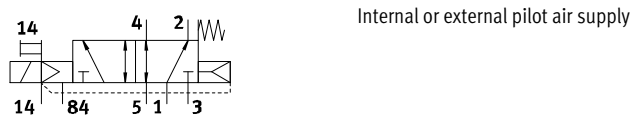
Data sheet – 2x 3/2-way valve



Technical data			Download CAD data → www.festo.com	
			VUVG-B	
Valve function			T32-A	T32-M
Operating pressure	Internal	[bar]	1.5 ... 8	3.5 ... 8
	External	[bar]	1.5 ... 10	−0.9 ... +10
Pilot pressure ¹⁾		[bar]	1.5 ... 8	3 ... 8
Flow rate on manifold rail		[l/min]	800	800
Switching time on/off		[ms]	13/27	15/22

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/2-way valve, single solenoid

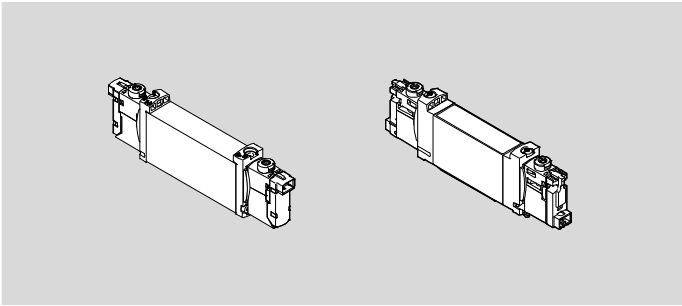
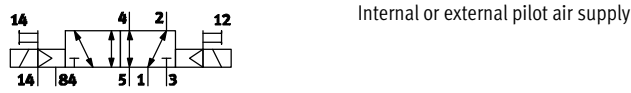


Technical data			Download CAD data → www.festo.com	
			VUVG-B	
Valve function			M52-R	M52-M
Operating pressure	Internal	[bar]	2.5 ... 8	3 ... 8
	External	[bar]	−0.9 ... +10	−0.9 ... +8
Pilot pressure ¹⁾		[bar]	2.5 ... 8	3 ... 8
Flow rate on manifold rail		[l/min]	1000	1000
Switching time on/off		[ms]	15/31	10/45

1) Minimum pilot pressure 50% of operating pressure.

Solenoid valves VUVG ★ , sub-base valves G1/4

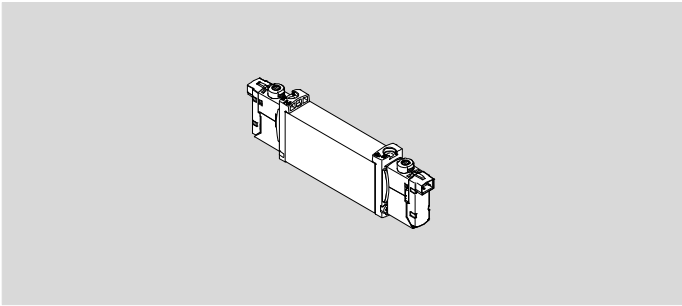
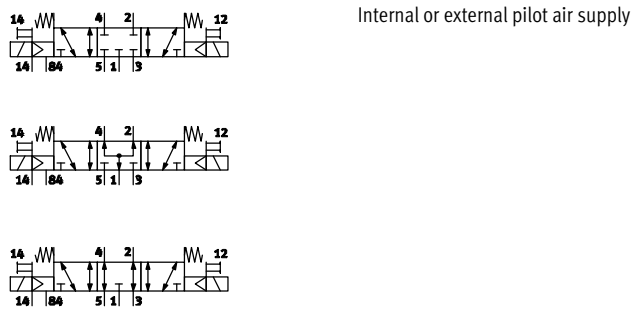
Data sheet – 5/2-way valve, double solenoid



Technical data			Download CAD data → www.festo.com
Valve function			VUVG-B
			B52
Operating pressure	Internal	[bar]	1.5 ... 8
	External	[bar]	–0.9 ... +10
Pilot pressure ¹⁾		[bar]	1.5 ... 8
Flow rate on manifold rail		[l/min]	1000
Changeover time		[ms]	11

1) Minimum pilot pressure 50% of operating pressure.

Data sheet – 5/3-way valve



Technical data			Download CAD data → www.festo.com
Valve function			VUVG-B
			P53
Operating pressure	Internal	[bar]	3 ... 8
	External	[bar]	–0.9 ... +10
Pilot pressure ¹⁾		[bar]	3 ... 8
Flow rate on manifold rail		[l/min]	950
Switching time on/off		[ms]	15/48
Changeover time		[ms]	29

1) Minimum pilot pressure 50% of operating pressure.

Solenoid valves VUVG ★, sub-base valves G1/4

Order code – VUVG-B

VUVG	–	B	18	–	–	Z		F	–		L	–	
Type of directional control valve													Version
Sub-base, manifold valve including seal and screws		B											– Extended features
Design principle													Accessories for valve/ connecting cable
Piston spool with sealing cartridge			–										W1...4 ⁵⁾ Connection pattern H, not sheathed, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
Size													C1...4 ⁵⁾ Connection pattern H, sheathed, 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
18 mm			18										N1...4 ⁴⁾ M8x1, 3-pin, straight: 1 = 2.5 m, 2 = 5 m; angled: 3 = 2.5 m, 4 = 5 m
Valve function ¹⁾													Display
2x 3/2-way valve, normally closed						T32C							L LED
2x 3/2-way valve, normally open						T32U							Circuitry
2x 3/2-way valve, 1x normally open, 1x normally closed						T32H							– Without holding current reduction (HCR)
5/2-way valve, single solenoid						M52							R ³⁾ With holding current reduction (HCR)
5/2-way valve, double solenoid						B52							Electrical connection
5/3-way valve, mid-position closed						P53C							H2 Connection pattern H, horizontal plug
5/3-way valve, mid-position exhausted						P53E							H3 Connection pattern H, vertical plug
5/3-way valve, mid-position pressurised						P53U							S2 Connection pattern S, horizontal plug
Reset method													L1...4 ²⁾ With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m
Pneumatic spring with T32 and M52						A							R8 ²⁾ Individual plug M8, 3-pin
Mechanical spring with T32 and M52						M							Nominal operating voltage
Pneu./mech. spring with M52						R							1 24 V DC
With B52 and P53						–							5 12 V DC
Pilot air supply													4 5 V DC
External						Z							Pneumatic connection
Manual override													F In manifold rail
Non-detenting, detenting						T							
Detenting, without accessories						Y							

2) Not with nominal operating voltage 4
3) Only with nominal operating voltage 1, not in combination with electrical connection R8

4) Straight: N1 = 2.5 m, N2 = 5 m
Angled: N3 = 2.5 m, N4 = 5 m
Only in combination with electrical connection R8

5) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m
Only in combination with electrical connection H2 or H3

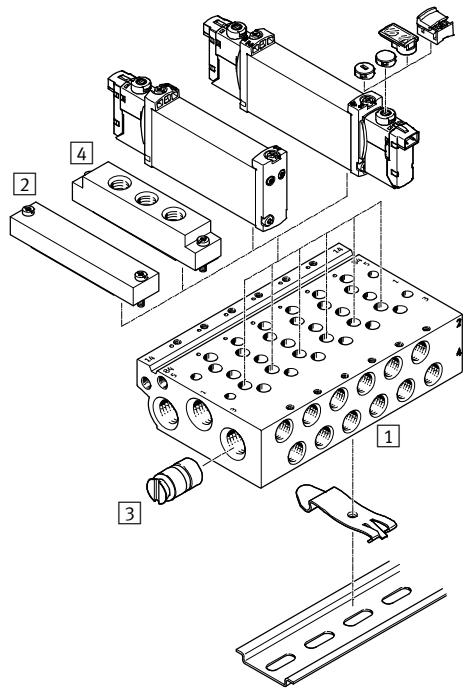
Solenoid valves VUVG ★ , sub-base valves G1/4

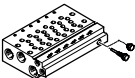
Accessories – Ordering data

Order code – Manifold rails

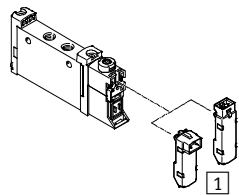
VABM	-	L1	-	18	W	-	G38	-	
Valve manifold parts							Number of valve positions		
Manifold rail	VABM						2 to 10, 12, 14 and 16		
Valve series							Ports 1, 3, 5		
VUVG	L1						G38 Thread G3/8		
Size									
18 mm				18					
Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84									
Port 2 and 4 with thread G1/4					W				

Manifold assembly

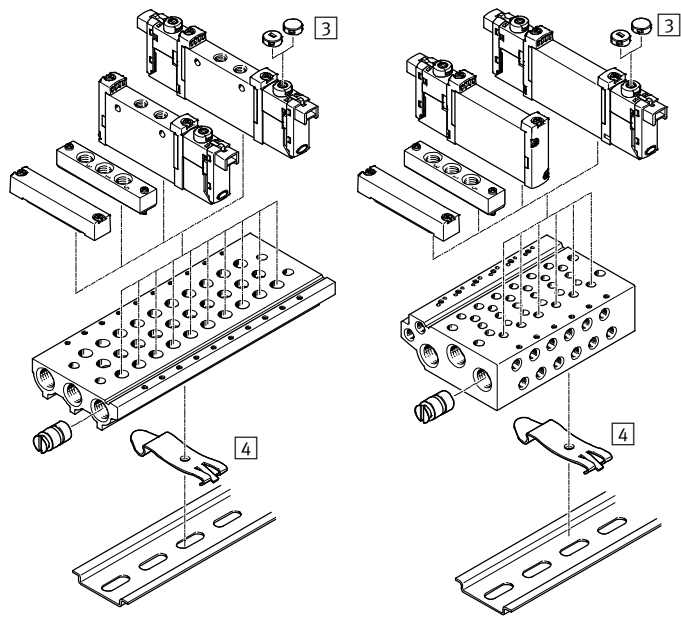


		Part no.	Type
1 Manifold rail			
	For G1/4	574467	VABM-L1-18W-G38-2
		574468	VABM-L1-18W-G38-3
		574469	VABM-L1-18W-G38-4
		574470	VABM-L1-18W-G38-5
		574471	VABM-L1-18W-G38-6
		574472	VABM-L1-18W-G38-7
		574473	VABM-L1-18W-G38-8
		574474	VABM-L1-18W-G38-9
		574475	VABM-L1-18W-G38-10
		574476	VABM-L1-18W-G38-12
		574477	VABM-L1-18W-G38-14
		574478	VABM-L1-18W-G38-16
2 Blanking plate			
	For G1/4	★ 574482	VABB-L1-18
3 Blanking plug			
	Separator for pressure zones	574483	VABD-14-B
4 Supply plate			
	For G1/4	574481	VABF-L1-18-P3A4-G14
Seals for in-line valves (10 pieces incl. 20 screws)			
	For G1/4	574480	VABD-L1-18B-S-G14

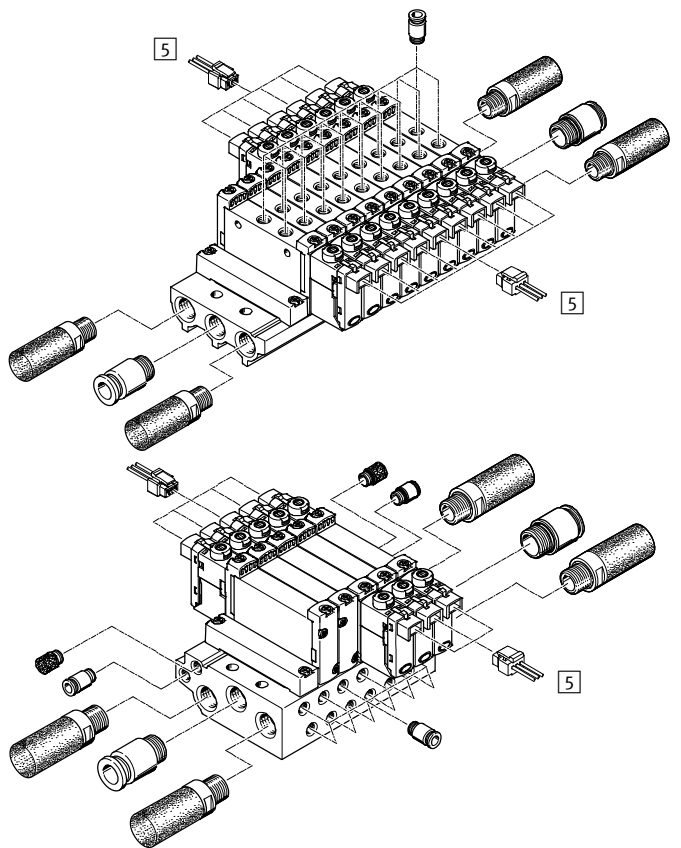
Electrical connection boxes



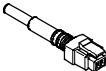
System overview

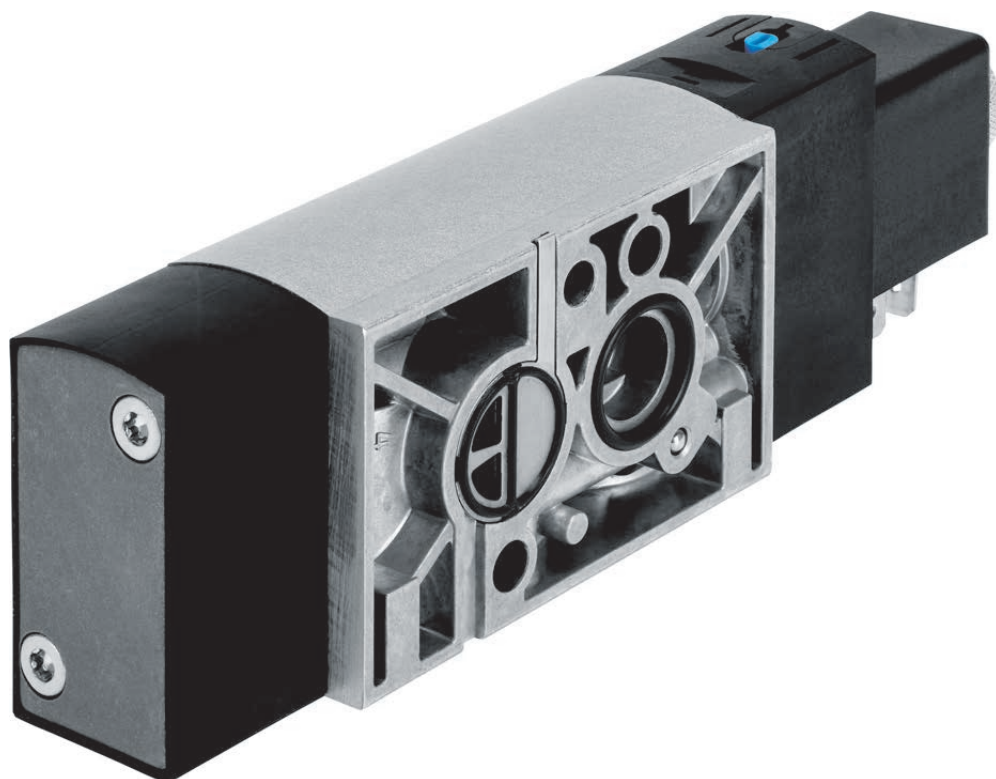


Accessories overview



Accessories – Ordering data

		Part no.	Type
1 Electrical connection boxes, connection pattern H, horizontal plug			
	12 V DC	★	566714 VAVE-L1-1VH2-LP
	24 V DC		
	24 V DC	★	566716 VAVE-L1-1H2-LR
Connection pattern H, vertical plug			
	12 V DC		566715 VAVE-L1-1VH3-LP
	24 V DC		
	24 V DC		566717 VAVE-L1-1H3-LR
With 2x flying leads			
	24 V DC		566726 VAVE-L1-1L1-LR
			566727 VAVE-L1-1L2-LR
			566728 VAVE-L1-1L3-LR
			566729 VAVE-L1-1L4-LR
	12 V DC 24 V DC		566722 VAVE-L1-1VL1-LP
			566723 VAVE-L1-1VL2-LP
			566724 VAVE-L1-1VL3-LP
			566725 VAVE-L1-1VL4-LP
Individual plug M8, 3-pin			
	12 V DC	★	573919 VAVE-L1-1VR8-LP
	24 V DC		
	24 V DC		573920 VAVE-L1-1R8-LR
With cable			
	12 V DC 24 V DC		573941 VAVE-L1-1VK6-LP
		★	573942 VAVE-L1-1VK7-LP
			573943 VAVE-L1-1VK8-LP
			573944 VAVE-L1-1VK9-LP
	24 V DC		573945 VAVE-L1-1K6-LR
			573946 VAVE-L1-1K7-LR
			573947 VAVE-L1-1K8-LR
			573948 VAVE-L1-1K9-LR
3 Covers for manual override			
	Covered		540898 VMPA-HBV-B
	Non-detenting		540897 VMPA-HBT-B
4 H-rail mounting			
	2 pieces	★	569998 VAME-T-M4
5 Plug socket with cable, connection pattern H			
	0.5 m	★	566654 NEBV-H1G2-KN-0.5-N-LE2
	1 m	★	566655 NEBV-H1G2-KN-1-N-LE2
	2.5 m	★	566656 NEBV-H1G2-KN-2.5-N-LE2
	5 m		566657 NEBV-H1G2-KN-5-N-LE2
	0.5 m	★	566658 NEBV-H1G2-P-0.5-N-LE2
	1 m	★	566659 NEBV-H1G2-P-1-N-LE2
	2.5 m	★	566660 NEBV-H1G2-P-2.5-N-LE2
	5 m		566661 NEBV-H1G2-P-5-N-LE2
Inscription label holder			
	10 pieces		570818 ASLR-D-L1



NAMUR connection pattern

- + ...to VDE/VDI 3845
- + Wide choice of EX solenoid systems, IEC Ex, FM EX
- + Can be converted from 5/2 to 3/2-way function

Electrically and pneumatically actuated directional control valves ›
Standards-based directional control valves ›

NAMUR solenoid valves

VSNC ★

Electrically and pneumatically actuated directional control valves > Standards-based directional control valves >

NAMUR solenoid valves

VSNC★



Overview, configuration and ordering

→ www.festo.com/catalogue/vsnc



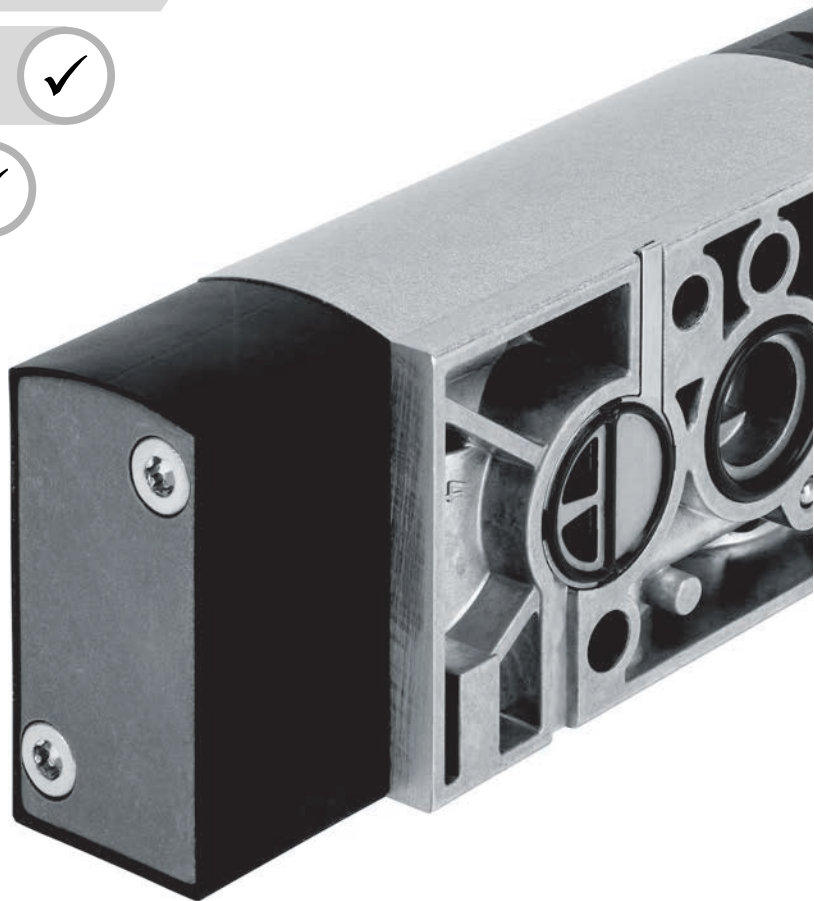
Additional information, support and user documentation

→ www.festo.com/sp/vsnc



Quick ordering of basic designs

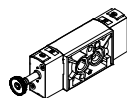
→ page 972, 974



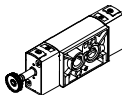
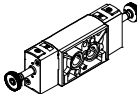
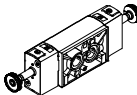
- + Connection G1/4, NPT 1/4
- + Flow rate 900 ... 1350 l/min
- + Voltage 12, 24, 48 V DC, 24, 48, 120, 230 V AC
- + Namur connection pattern to VDE/VDI 3845
- + Electrically actuated, piloted
- + Mechanical spring return
- + Wide choice of EX solenoid systems, IEC Ex, FM EX
- + Can be converted from 5/2 to 3/2-way function

Product range overview

VSNC-F8



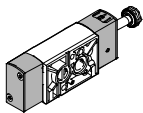
- Material of valve cap: Plastic/metal
- Material of armature: Brass
- Pilot air (incoming air armature tube), unprotected

Version	Type	Pneumatic port 1, 3, 5	Pneumatic port 2, 4, based on standard	Standard nominal flow rate [l/min]	→ Page
5/2-way or 3/2-way valve, convertible, single solenoid					
	VSNC-FC-M52-MD-G14-F8	G1/4	VDI/VDE 3845 NAMUR 1/4	1250	971
	VSNC-FC-M52-MD-N14-F8	NPT1/4			
	VSNC-FC-M52-MD-G14-F8-1A1	G1/4			
5/2-way valve, double solenoid					
	VSNC-F-B52-D-G14-F8	G1/4	VDI/VDE 3845 NAMUR	1350	vsnc
	VSNC-F-B52-D-N14-F8	G1/4			
5/3-way valve					
	VSNC-F-P53C-MD-G14-F8	G1/4	VDI/VDE 3845 NAMUR	1250	vsnc
	VSNC-F-P53U-MD-G14-F8	G1/4		950	
	VSNC-F-P53E-MD-G14-F8	G1/4		1050	
	VSNC-F-P53C-MD-N14-F8	NPT1/4		1250	
	VSNC-F-P53-U-MD-N14-F8	NPT1/4		950	
	VSNC-F-P53-E-MD-G14-F8	NPT1/4		1050	

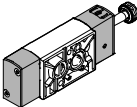
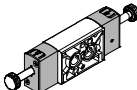
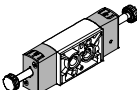
Solenoid valves VSNC ★

Product range overview

VSNC-F ... -FN – Piston spool

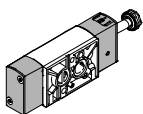


- Design: Piston spool
- Material of valve cap: Aluminium/metal
- Material of armature: Stainless steel
- Pilot air (incoming air armature tube), protected

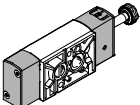
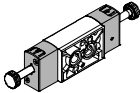
Version	Type	Pneumatic port 1, 3, 5	Pneumatic port 2, 4, based on standard	Standard nominal flow rate [l/min]	→ Page
5/2-way or 3/2-way valve -...-FN, convertible, single solenoid					
	VSNC-FC-M52-MD-G14-FN	G1/4	VDI/VDE 3845 NAMUR	1250	973
	VSNC-FC-M52-MD-N14-FN	NPT1/4-18			
	VSNC-FC-M52-MD-G14-FN-1A1-EX4-A	G1/4			
	VSNC-FC-M52-MD-N14-FN-1A1-EX4-A	NPT1/4-18			
	VSNC-FC-M52-MD-G14-GN-1A1+G	G1/4			
	VSNC-FC-M52-MD-G14-FN-3AA1+G	G1/4			
5/2-way valve -...-FN, double solenoid					
	VSNC-F-B52-D-G14-FN	G1/4	VDI/VDE 3845 NAMUR	1350	vsnc
	VSNC-F-B52-D-N14-FN	NPT1/4-18			
	VSNC-F-B52-D-G14-FN-1A1-EX4-A	G1/4			
	VSNC-F-B52-D-N14-FN-1A1-EX4-A	NPT1/4-18			
5/3-way valve -...-FN					
	VSNC-F-P53C-MD-G14-FN	G1/4	VDI/VDE 3845 NAMUR	1250	vsnc
	VSNC-F-P53U-MD-G14-FN			950	
	VSNC-F-P53E-MD-G14-FN			1050	
	VSNC-F-P53C-MD-N14-FN	NPT1/4-18		1250	
	VSNC-F-P53U-MD-N14-FN			950	
	VSNC-F-P53E-MD-N14-FN			1050	

Product range overview

VSNC-FT ... -FN – Poppet seat

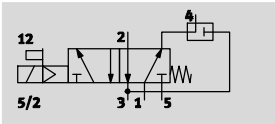


- Design: Poppet seat
- Material of valve cap: Aluminium/metal
- Material of armature: Stainless steel
- Pilot air (incoming air armature tube), protected

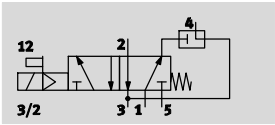
Version	Type	Pneumatic port 1, 3, 5	Pneumatic port 2, 4, based on standard	Standard nominal flow rate [l/min]	→ Page
5/2-way or 3/2-way valve -...-FN, convertible, single solenoid					
	VSNC-FTC-M52-MD-G14-FN	G1/4	VDI/VDE 3845 NAMUR	800	vsnc
	VSNC-FTC-M52-MD-N14-FN	NPT1/4-18			
	VSNC-FTC-M52-MD-G14-FN-1A1	G1/4			
5/2-way valve -...-FN, double solenoid					
	VSNC-FT-B52-D-G14-FN	G1/4	VDI/VDE 3845 NAMUR	1000	vsnc
	VSNC-FT-B52-D-N14-FN	NPT1/4-18			
	VSNC-FT-B52-D-G14-FN-1A1	G1/4			

Data sheet – VSNC-F8

Function¹⁾
5/2-way valve

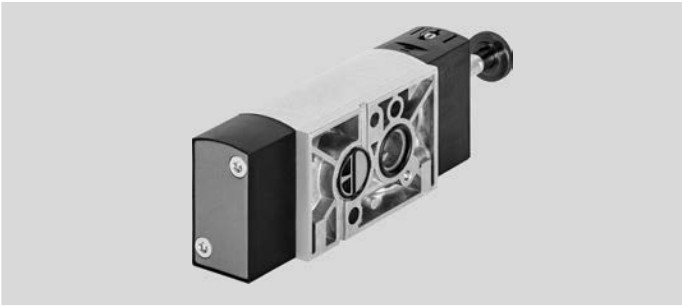


3/2-way valve
with exhaust return



¹⁾ Can be converted by exchanging the seal plate

-  Voltage
24 V DC
-  Operating pressure
2.5 ... 10 bar
-  Temperature range
-20 ... +60°C



General technical data		VSNC-FC- ... -G14-F8 VSNC-FC- ... -N14-F8	VSNC-FC- ... -G14-F8-1B2	VSNC-FC- ... -G14-F8-1A1
Valve function		5/2-way or 3/2-way, convertible		
Width	[mm]	32		
Design		Piston spool		
Reset method		Mechanical spring		
Type of control		Piloted		
Manual override		Detenting, non-detenting		
Type of mounting		Via through-hole		
Mounting position		Any		
Max. tightening torque for valve mounting	[Nm]	3.5		–
Non-overlapping		Yes		
Standard nominal flow rate	1 → 2 [l/min]	1250		
	Exhaust return 4 → 3 [l/min]	110		
Pneumatic port	1, 3, 5 2, 4	G1/4, NPT1/4-18 Connection pattern as per NAMUR	G1/4	G1/4
Conforms to standard		VDI/VDE 3845 NAMUR		
Product weight	[g]	335	390	335

Solenoid valves VSNC ★

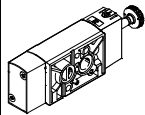
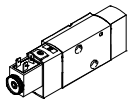
Data sheet – VSNC-F8

Operating and environmental conditions		VSNC-FC- ... -G14-F8 VSNC-FC- ... -N14-F8	VSNC-FC- ... -G14-F8-1B2	VSNC-FC- ... -G14-F8-1A1
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	2.5 ... 10		
Ambient temperature	[°C]	–20 ... +60		
Temperature of medium	[°C]	–20 ... +60		

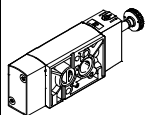
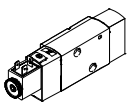
Electrical data		VSNC-FC- ... -G14-F8 VSNC-FC- ... -N14-F8	VSNC-FC- ... -G14-F8-1B2	VSNC-FC- ... -G14-F8-1A1
Electrical connection		–	3-pin plug, type B to industry standard (11 mm)	To EN 175301-801, type A
Coil characteristics, 24 V DC	[W]	See solenoid coil, to be ordered separately	3.3	2.6
Permissible voltage fluctuations	[%]	–	±10	±10
Duty cycle	[%]	–	100	100
Degree of protection		–	IP65, IP67	IP65, IP67 to IEC 60529 with plug socket
Switching time on	[ms]	11	11	11
Switching time off	[ms]	38	48	48

Materials		
Housing		Wrought aluminium alloy
Seals		NBR
–		RoHS-compliant

★ Quick ordering¹⁾

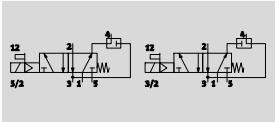
Ordering data – Valves			Ordering data – Valves		
Directional control valve without solenoid coil			Directional control valve with 24 V DC solenoid coil, without socket		
	Part no.	Type		Part no.	Type
	577257	VSNC-FC-M52-MD-G14-F8		577295	VSNC-FC-M52-MD-G14-F8-1B2

1) All products in this table are easy to select and quick to order.

Ordering data – Valves			Ordering data – Valves		
Directional control valve without solenoid coil			Directional control valve with 24 V DC solenoid coil, without socket		
	Part no.	Type		Part no.	Type
	577262	VSNC-FC-M52-MD-N14-F8		8074945	VSNC-FC-M52-MD-G14-F8-1A1

Data sheet – VSNC-FN

Function
3/2-way or 5/2-way valve,
convertible



 Operating pressure
2.5 ... 8 bar

 Temperature range
–20 ... +60°C



General technical data		VSNC- ... -G14-FN	VSNC- ... -N14-FN
Valve function		5/2-way or 3/2-way, convertible	
Width	[mm]	32	
Design		Piston spool	
Reset method		Mechanical spring	
Type of control		Piloted	
Pilot air supply		Internal	
Manual override		Detenting, non-detenting	
Mounting position		Any	
Non-overlapping		Yes	
Exhaust air function		With flow control	
Connection for venting hole		Not ducted	
Standard nominal flow rate	1 → 2 [l/min]	1250	
Exhaust return	4 → 3 [l/min]	110	
Pneumatic port	1, 3, 5	G1/4	NPT1/4-18
	2, 4	Connection pattern as per NAMUR	
Conforms to standard		VDI/VDE 3845 (NAMUR)	
Product weight	[g]	415	

Operating and environmental conditions		VSNC- ... -G14-FN	VSNC- ... -N14-FN
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)	
Operating pressure	[bar]	2.5 ... 8	
Ambient temperature	[°C]	–20 ... +60	
Temperature of medium	[°C]	–20 ... +60	

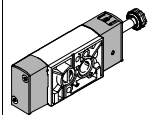
Solenoid valves VSNC ★

Data sheet – VSNC-FN

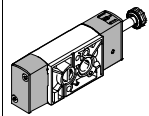
Electrical data		VSNC- ... -G14-FN	VSNC- ... -N14-FN
Coil characteristics, 24 V DC	[W]	See solenoid coil, to be ordered separately	
Switching time on	[ms]	32	
Switching time off	[ms]	92	

Materials	
Housing	Wrought aluminium alloy
Seals	NBR
–	RoHS-compliant

★ Quick ordering¹⁾

Ordering data – Valves		
Directional control valve without solenoid coil		
	Part no.	Type
	577267	VSNC-FC-M52-MD-G14-FN

1) All products in this table are easy to select and quick to order.

Ordering data – Valves		
Directional control valve without solenoid coil		
	Part no.	Type
	577272	VSNC-FC-M52-MD-N14-FN

Solenoid valves VSNC ★

Order code

Nominal operating voltage							
–	None						
1A	24 V AC/50-60 Hz						
3A	230 V AC/50-60 Hz						
3W	230 V AC/240 V AC/50-60 Hz						
16B	120 V AC/60 Hz and 110 V AC/50-60 Hz						
1	24 V DC						
5	12 V DC						
Electrical connection							
–	None						
A1	Connecting cable type A, to EN 175301						
B2	Connecting cable type B, industry standard						
C3	Cable, 3 m						
K11	Cable with insulating conduit connection						
Degree of protection, electrical system							
–	Standard						
S8	IP67						
EU certification							
–	None						
EX2	II 3GD						
EX4	II 2GD						
Approval							
–	None						
U4	Class 1 Div 1 to NEC 500						
Type of ignition protection							
–	None						
A	Intrinsically safe						
M	Encapsulation						
N	Non-sparking						
Electrical accessories, valve							
–	None						
G	Connector socket without LED						

Ordering – Product options

☐

☐

☐

☐

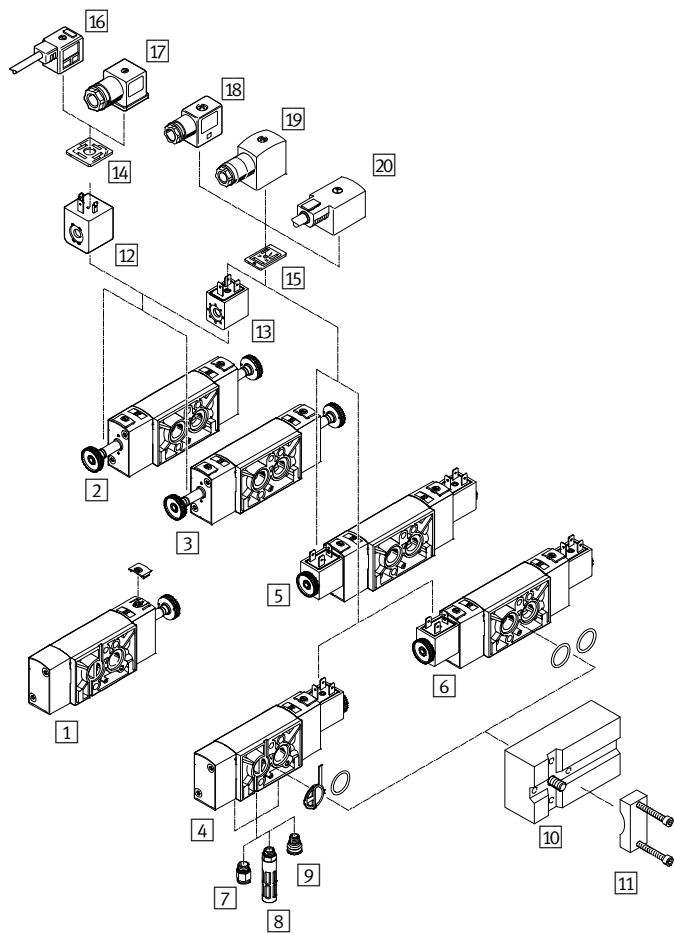
Configurable product

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

The configurator can be found under Products on the DVD or www.festo.com/catalogue/...

Enter the type code in the search field.

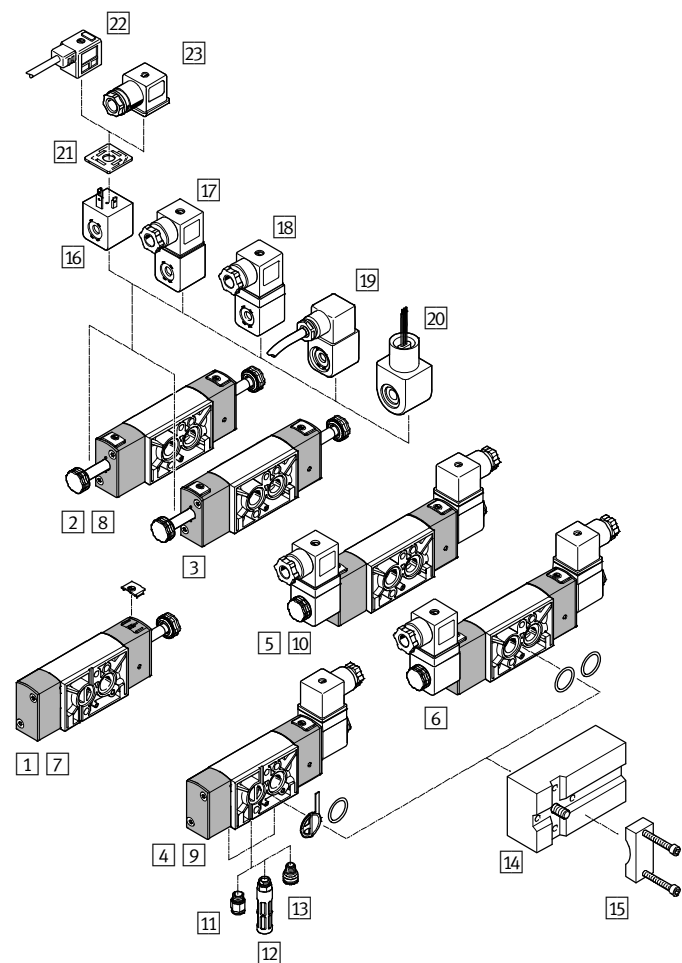
Accessories – Ordering data – VSNC-F8



		→ Page/ online
Solenoid valves VSNC- ... -F8		
1	3/2-way and 5/2-way single solenoid valve with reversible seal, plastic cover cap, brass armature tube for controlling single-acting or double-acting drives	971
2	5/2-way double solenoid valve with plastic cover cap, brass armature tube for controlling double-acting drives	vsnc
3	5/3-way single solenoid valve, normally open, closed or exhausted with plastic cover cap, brass armature tube for controlling double-acting drives	vsnc
4	3/2-way and 5/2-way single solenoid valve with reversible seal, plastic cover cap, brass armature tube and 24 V DC solenoid coil for controlling single-acting or double-acting drives	971
5	5/2-way double solenoid valve with plastic cover cap, brass armature tube and 24 V DC solenoid coil for controlling double-acting drives	vsnc
6	5/3-way single solenoid valve, normally open, closed or exhausted with plastic cover cap, brass armature tube and 24 V DC solenoid coil for controlling double-acting drives	vsnc
Accessories		
7	Push-in fitting QS	980
8	Silencer U	980
9	Exhaust protection VABD-D3-SN-G14	980
10	Connection set VABS-S7-S-G14	979
11	Mounting bracket VAME-S7-Y	979
12	Solenoid coil VACF-A	979
13	Solenoid coil VACF-B	979
14	Illuminating seal MC-LD	980
15	Illuminating seal MF-LD	980
16	Connecting cable KMC	980
17	Plug socket MSSD-C	980
18	Plug socket MSSD-F	980
19	Plug socket MSSD-F-S	980
20	Connecting cable KMF	980

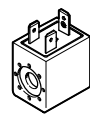
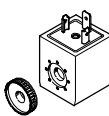
Solenoid valves VSNC ★

Accessories – Ordering data – VSNC-...-FN

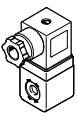
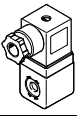
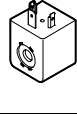
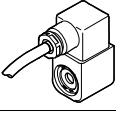
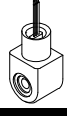


		→ Page/ online
Solenoid valves VSNC-F- ... -FN – Piston slide		
1	3/2-way and 5/2-way single solenoid valve with reversible seal, aluminium cover cap, stainless steel armature tube	973
2	5/2-way double solenoid valve with aluminium cover cap, stainless steel armature tube	VSNC
3	5/3-way single solenoid valve, normally open, closed or exhausted with aluminium cover cap, stainless steel armature tube	VSNC
4	3/2-way and 5/2-way single solenoid valve with reversible seal, aluminium cover cap, stainless steel armature tube and Ex ia solenoid coil	973
5	5/2-way double solenoid valve with aluminium cover cap, stainless steel armature tube and Ex ia solenoid coil	VSNC
6	5/3-way single solenoid valve, normally open, closed or exhausted with aluminium cover cap, stainless steel armature tube and Ex ia solenoid coil	VSNC
7	3/2-way and 5/2-way single solenoid valve with reversible seal, aluminium cover cap, stainless steel armature tube	VSNC
Solenoid valves VSNC-F- ... -FN – Poppet seat		
7	3/2-way and 5/2-way single solenoid valve with reversible seal, aluminium cover cap, stainless steel armature tube	VSNC
8	5/2-way double solenoid valve with aluminium cover cap, stainless steel armature tube	VSNC
9	3/2-way and 5/2-way single solenoid valve with reversible seal, aluminium cover cap, stainless steel armature tube and 24 V DC solenoid coil	VSNC
10	5/2-way double solenoid valve with aluminium cover cap, stainless steel armature tube and 24 V DC solenoid coil	VSNC
Accessories		
11	Push-in fitting QS	980
12	Silencer U	980
13	Exhaust protection VABD-D3-SN-G14	980
14	Connection set VABS-S7-S-G14	979
15	Mounting bracket VAME-S7-Y	979
16	Solenoid coil VACN-N	979
17	Solenoid coil VACN-N- ... -Ex2-N	979
18	Solenoid coil VACN-N- ... -Ex4-A	979
19	Solenoid coil VACN-N- ... -Ex4-M	979
20	Solenoid coil VACN-N- ... -U4-M	979
21	Illuminating seal MC-LD	980
22	Connecting cable KMC	980
23	Plug socket MSSD-C	–

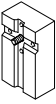
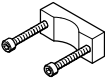
Accessories – Ordering data – VSNC-F8

	Description	Part no.	Type
Solenoid coil VACF-B		Technical data online: ➔ vacf	
	Electrical connection to Festo standard for MSSD-F	8030801	VACF-B-B2-5
		8030802	VACF-B-B2-1
		8030803	VACF-B-B2-7
		8030804	VACF-B-B2-1A
		8030805	VACF-B-B2-7A
		8030806	VACF-B-B2-16B
		8030808	VACF-B-B2-3W
Solenoid coil VACF-A			
	Type A to EN 175301-803	8030821	VACF-A-A1-5
		★ 8030822	VACF-A-A1-1
		8030823	VACF-A-A1-7
		8030824	VACF-A-A1-1A
		8030825	VACF-A-A1-7A
		8030826	VACF-A-A1-16B
		8030828	VACF-A-A1-3W

Accessories – Ordering data – VSNC-FN

	Description	Part no.	Type
Solenoid coil VACN-N		Technical data online: → vacn	
	Type of ignition protection: intrinsically safe Ex ia	8029139	VACN-N-A1-1-EX-4-A
	Type of ignition protection: non-sparking Ex nA	8029136	VACN-N-A1-1-EX2-N
		8029137	VACN-N-A1-16B-EX2-N
		8029138	VACN-N-A1-3A-EX2-N
	Degree of protection IP65 with socket	★ 8029144	VACN-N-A1-1
		8029134	VACN-N-A1-16B
		8029135	VACN-N-A1-3A
	Type of ignition protection: encapsulated Ex me	8029141	VACN-N-K1-3A-EX4-M
		8029142	VACN-N-K1-16B-EX4-M
		8029143	VACN-N-K1-1-EX4-M
	Type of ignition protection: encapsulated AEx m, Class 1, Div 1 to NEC 500	8029140	VACN-N-K11-3A-0.5-U4-M
		8029145	VACN-N-K11-16B-0,5-U4-M
		8029146	VACN-N-K11-1-0,5-U4-M

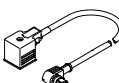
Accessories – Ordering data

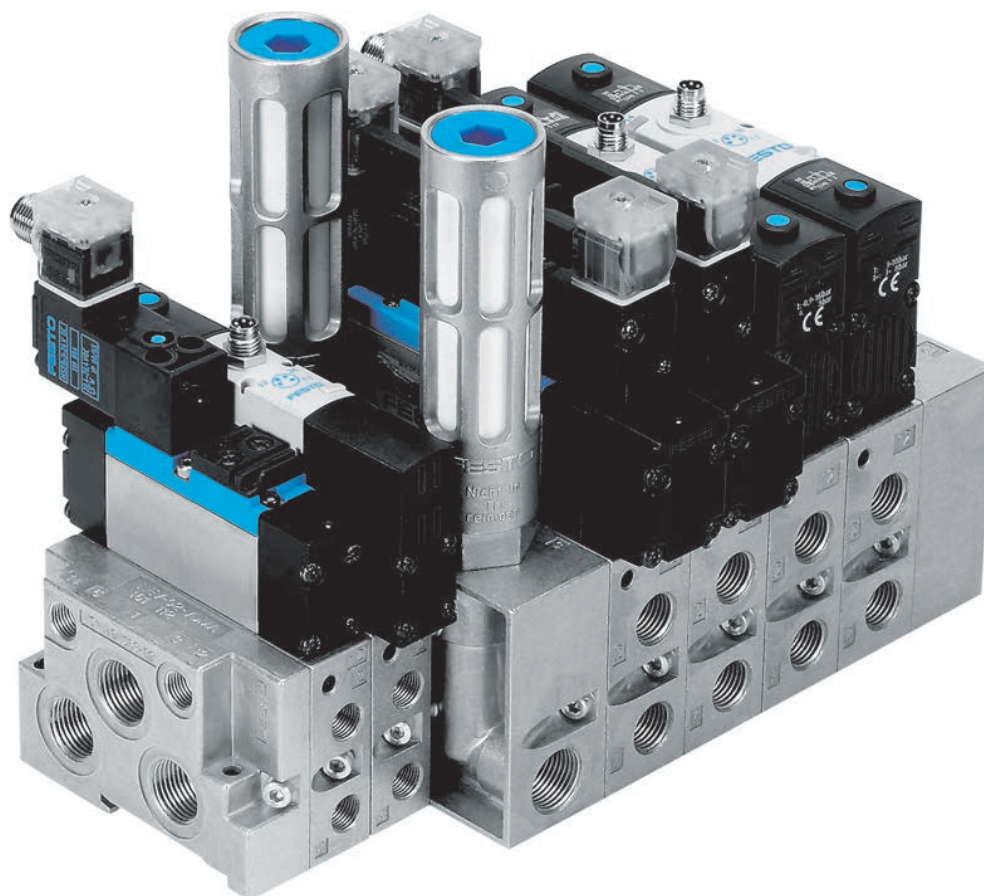
	Description	Part no.	Type
Sub-base VABS		Technical data online: → vacf	
		563396	VABS-S7-S-G14
Mounting bracket VAME			
		563403	VAME-S7-Y

Electrically and pneumatically actuated directional control valves > Standards-based directional control valves >

Solenoid valves VSNC ★

Accessories – Ordering data

	Description	Part no.	Type
Plug socket		Technical data online: → mssd	
	3-pin, angled socket, square design, connection pattern type B to industry standard 11 mm	539710	MSSD-F-M16
	3-pin, angled socket, square design, connection pattern type A to DIN EN 175301-803, type A	539709	MSSD-C-M16
	3-pin, IP67 socket to IEC 60529, type B	192746	MSSD-F-S-M16
	4-pin, IP67 socket to IEC 60529, type A	192748	MSSD-C-S-M16
	3-pin, angled socket, square design, IP65 to DIN EN 175301-803, type A	34583	MSSD-C
Push-in fittings QS		Technical data online: → qs	
	G male thread with internal hex	★ 186108	QS-G1/4-6-I
		★ 186110	QS-G1/4-8-I
		★ 186112	QS-G1/4-10-I
Silencer U		Technical data online: → u	
	G male thread, polymer design	534223	U-1/4-20
		★ 2316	U-1/4
	G male thread, die-cast metal design	★ 6842	U-1/4-B
Connecting cable		Technical data online: → kmc	
	For valves with D and N1 solenoid coils	30931	KMC-1-24 DC-2,5-LED
		30932	KMC-1-230 AC-2,5
		30933	KMC-1-24 DC-5-LED
		30934	KMC-1-230 AC-5
	For valves with F solenoid coils	★ 30935	KMF-1-24DC-2,5-LED
	For valves with D and N1 solenoid coils	3579466	NEBV-A1W3-K-0,6-N-LE3
		3679776	NEBV-A1W3-P-K-0,6-LE3
		3579461	NEBV-A1W3-K-0,3-N-M12W3
		3579462	NEBV-A1W3-K-0,6-N-M12W3
		3679771	NEBV-A1W3-P-0,3-N-M12W3
		3679772	NEBV-A1W3-P-0,6-N-M12W3
Illuminating seal		Technical data online: → mc-ld	
	For F solenoid coils	19143	MF-LD-12-24 DC
		19144	MF-LD-230 AC
	For valves with D and N1 solenoid coils	19145	MC-LD-12-24 DC
		19146	MC-LD-230 AC
Cover cap			
	For valves	8028240	VAMC-B10-20-CH2
Exhaust protection			
	For valves	563400	VABD-D3-SN-G14



Usable worldwide and indestructible

- + Globally standardised pneumatic interfaces
- + Extensive range of electrical connection options
- + Universal valve range

Electrically and pneumatically actuated directional control valves ›
Standards-based directional control valves ›
Solenoid/pneumatic valves, to ISO 15407-1

VSVA ★
VSPA

Electrically and pneumatically actuated directional control valves > Standards-based directional control valves >

Solenoid/pneumatic valves, to ISO 15407-1

VSVA ★ /VSPA



Overview, configuration and ordering

→ www.festo.com/catalogue/vsva



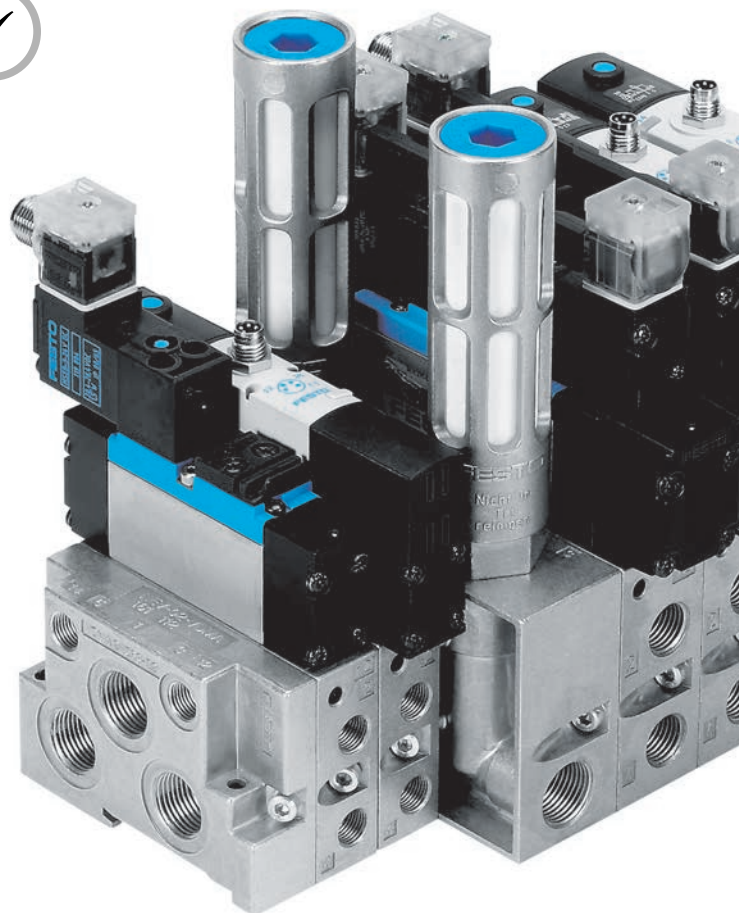
Additional information, support and user documentation

→ www.festo.com/sp/vsva



Quick ordering of basic designs

→ page 988



- + Conforms to ISO 15407-1
- + Optional: pilot valve with interface to ISO 15218
- + High-performance valves in a sturdy metal housing
- + Manifold assembly with mixture of sizes possible
- + Wide range of vertical stacking modules: pressure regulator, flow control and vertical pressure shut-off plate, etc.

Solenoid/pneumatic valves, ISO 15407-1 ★

Product range overview

Type code	Actuation type	Valve function	qnN [l/min]		Pilot air supply	→ Page/ online
			Width 18 mm	Width 26 mm		
VSVA-B-T22	Solenoid coil	2x 2/2-way valve, normally closed	500	1000	Internal/external	vtia
VSVA-B-T32	Pilot interface to ISO 15218	2x 3/2-way valve, normally closed	400	900	Internal/external	985
		2x 3/2-way valve, normally open				
		2x 3/2-way valve, normally closed/open				
		2x 3/2-way valve, normally closed/open				
VSVA-B-M52	12, 24 V DC	5/2-way valve, single solenoid	550	1100	Internal/external	985
VSVA-B-B52	24, 110, 230 V AC	5/2-way valve, double solenoid	550	1100	Internal/external	986
VSVA-B-D52	Plug M12 24 V DC	5/2-way valve, double solenoid, with dominant signal at 14	550	1100	Internal/external	vtia
VSVA-B-P53C	Round central plug M8/M12 24 V DC	5/3-way valve, normally closed	450	1000	Internal/external	986
VSVA-B-P53U		5/3-way valve, normally open	450	1000	Internal/external	vtia
VSVA-B-P53E		5/3-way valve, normally exhausted	450	1000	Internal/external	vtia
VSVA-B-D52	Solenoid coil Pilot interface to ISO 15218 with position sensing	5/2-way valve, single solenoid	–	1100	External	vtia
VSPA-B-T32	Pneumatic	2x 3/2-way valve, normally closed	400	900	–	992
		2x 3/2-way valve, normally open				
		2x 3/2-way valve, normally closed/open				
VSPA-B-M52		5/2-way valve, single solenoid	550	1100		992
VSPA-B-B52		5/2-way valve, bistable	550	1100		993
VSPA-B-D52		5/2-way valve, double solenoid, with dominant signal at 14	550	1100		vtia
VSPA-B-P53C		5/3-way valve, normally closed	450	1000		993
VSPA-B-P53U		5/3-way valve, normally open	450	1000		vtia
VSPA-B-P53E		5/3-way valve, normally exhausted	450	1000		vtia

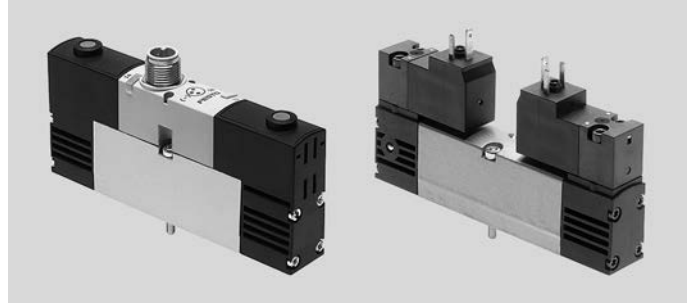
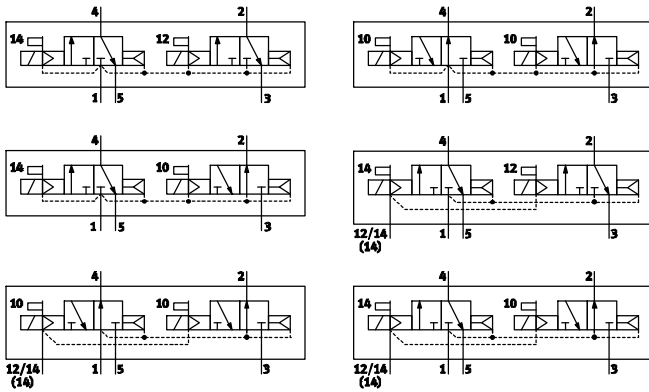
Standards-based directional control valves >

Solenoid/pneumatic valves, ISO 15407-1 ★

Data sheet – Solenoid valves

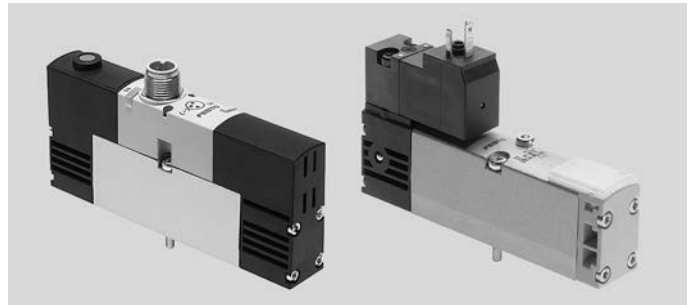
Technical data					Download CAD data → www.festo.com				
Width		18 mm				26 mm			
Valve function		2x 3/2 single solenoid	5/2 single solenoid	5/2 double solenoid	5/3-way closed	2x 3/2 single solenoid	5/2 single solenoid	5/2 double solenoid	5/3-way closed
Sub-base		1, 2, 3, 4, 5		G1/8		G1/4			
Pilot air		12, 14		M5		M5			
Design		Piston spool							
Type of mounting		Via through-hole on sub-base							
Electrical data – Valve with central plug M8x1, M12x1									
Operating voltage		[V DC]		24					
Power consumption		DC [W]		High-current phase: 2.4; low-current phase: 1					
Protective circuit and LED		Integrated in the valve							
Electrical connection		Central plug, round design, M8x1 or M12x1							
Degree of protection to EN 60529		IP65, Nema 4 (in combination with plug socket)							
Electrical data – Valve with plug type C									
Operating voltage		[V DC]		24					
		[V AC]		24, 110, 230					
Power consumption		DC [W]		1.8					
		AC [VA]		2.1 at 110/230 V 2.3 at 24 V					
Electrical connection		Plug, square design to EN 175301-803, type C							
Degree of protection to EN 60529		IP65, Nema 4 (in combination with plug socket)							
Operating conditions									
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]							
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					
Materials									
Housing		Die-cast aluminium							
Seals		NBR							
Screws		Galvanised steel							

Data sheet – 2x 3/2-way solenoid valves



Technical data			Download CAD data → www.festo.com	
Electrical connection			Plug M8x1, M12x1	
			Plug type C	
Width			18 mm	26 mm
Operating pressure	Internal pilot air supply	[bar]	3 ... 8	
	External pilot air supply	[bar]	3 ... 10	
Pilot pressure			3 ... 8	
Standard nominal flow rate q _N			400	900
Switching time on/off	Non-reversible types	[ms]	10/22	20/33
	Reversible types	[ms]	–	–
Length/width/height			108/18/57	113/27/67

Data sheet – 5/2-way valves, single solenoid

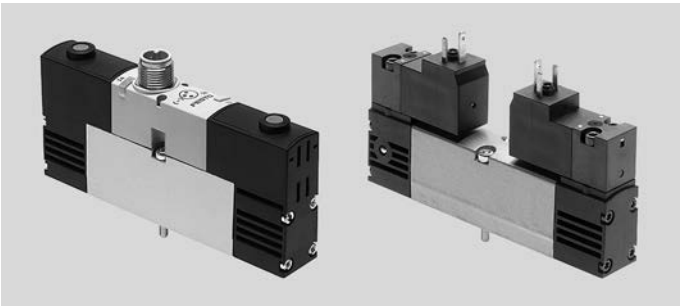
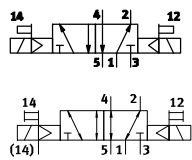


Technical data			Download CAD data → www.festo.com	
Electrical connection			Plug M8x1, M12x1	
			Plug type C	
Width			18 mm	26 mm
Reset method			Mechanical	Pneumatic
Operating pressure	Internal pilot air supply	[bar]	3 ... 8	
	External pilot air supply	[bar]	–0.9 ... +10	
Pilot pressure			3 ... 8	
Standard nominal flow rate q _N			550	1100
Switching time on/off	Non-reversible types	[ms]	12/34	20/25
	Reversible types	[ms]	20/52	25/40
Length/width/height			108/18/57	113/27/67

Standards-based directional control valves >

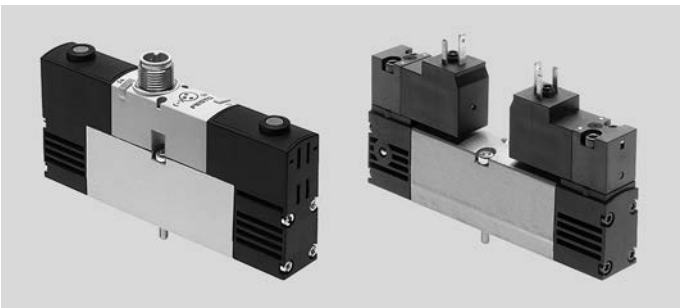
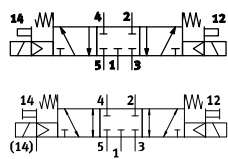
Solenoid/pneumatic valves, ISO 15407-1 ★

Data sheet – 5/2-way solenoid valves, double solenoid



Technical data			Download CAD data → www.festo.com			
Electrical connection			Plug M8x1, M12x1		Plug type C	
Width			18 mm	26 mm	18 mm	26 mm
Operating pressure	Internal pilot air supply	[bar]	3 ... 8	3 ... 8	2 ... 10	2 ... 10
	External pilot air supply	[bar]	–0.9 ... +10	–0.9 ... +16	–0.9 ... +10	–0.9 ... +16
Pilot pressure		[bar]	3 ... 8	3 ... 8	3 ... 10	3 ... 10
Standard nominal flow rate qnN		[l/min]	550	1100	550	1100
Changeover time		[ms]	10	15	15	18
Length/width/height		[mm]	108/18/57	113/27/67	108/18/63	127/27/72

Data sheet – 5/3-way solenoid valves, normally closed

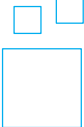


Technical data			Download CAD data → www.festo.com			
Electrical connection			Plug M8x1, M12x1		Plug type C	
Width			18 mm	26 mm	18 mm	26 mm
Operating pressure	Internal pilot air supply	[bar]	3 ... 8	3 ... 8	3 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +10	–0.9 ... +16	–0.9 ... +10	–0.9 ... +16
Pilot pressure		[bar]	3 ... 8	3 ... 8	3 ... 10	3 ... 10
Standard nominal flow rate qnN		[l/min]	450	1000	450	1000
Switching time on/off		[ms]	15/36	20/52	18/30	23/58
Length/width/height		[mm]	108/18/57	113/27/67	108/18/63	127/27/72

Standards-based directional control valves >

Solenoid/pneumatic valves, ISO 15407-1 ★

Ordering – Product options



Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

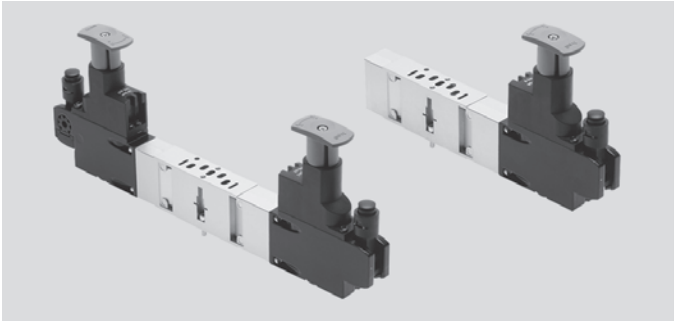
★ Quick ordering¹⁾

		Part no.	Type code
5/2-way single solenoid valve, ISO size 18 mm			
With pilot control with square plug, type C	Pneumatic spring	546701	VSVA-B-M52-AH-A2-1C1
	Mechanical spring	546703	VSVA-B-M52-MH-A2-1C1
With pilot control with round plug M12x1	Pneumatic spring	546767	VSVA-B-M52-AH-A2-1R5L
	Mechanical spring	546768	VSVA-B-M52-MH-A2-1R5L
5/2-way double solenoid valve, ISO size 18 mm			
With pilot control with square plug, type C		546697	VSVA-B-B52-H-A2-1C1
With pilot control with round plug M12x1		546769	VSVA-B-B52-H-A2-1R5L
5/2-way single solenoid valve, ISO size 26 mm			
With pilot control with square plug, type C	Pneumatic spring	546700	VSVA-B-M52-AH-A1-1C1
	Mechanical spring	546702	VSVA-B-M52-MH-A1-1C1
With pilot control with round plug M12x1	Pneumatic spring	534555	VSVA-B-M52-AH-A1-1R5L
	Mechanical spring	534556	VSVA-B-M52-MH-A1-1R5L
5/2-way double solenoid valve, ISO size 26 mm			
With pilot control with square plug, type C		546696	VSVA-B-B52-H-A1-1C1
With pilot control with round plug M12x1		534557	VSVA-B-B52-H-A1-1R5L
5/3-way solenoid valve, ISO size 26 mm			
With pilot control with square plug, type C		546706	VSVA-B-P53E-H-A1-1C1
With pilot control with round plug M12x1		534560	VSVA-B-P53E-H-A1-1R5L

1) All products in this table are easy to select and quick to order.

Data sheet – Regulator plate VABF-S3

-  Temperature range
-5 ... +50°C
-  Operating pressure range
0.5 ... 6 bar
0.5 ... 10 bar



Materials	
Housing	Die-cast aluminium
Control section	PA

Order code – Regulator plate VABF-S3

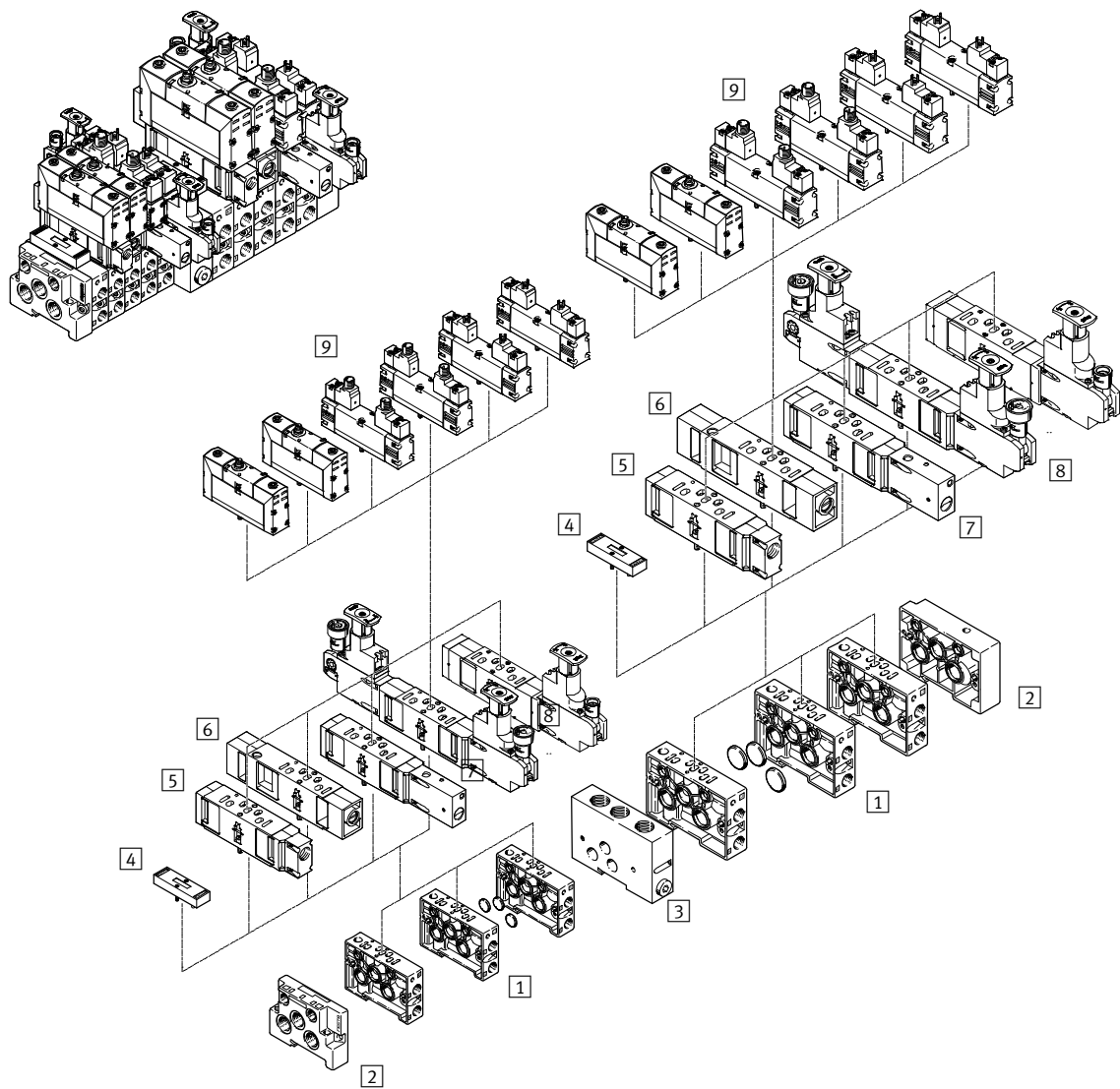
VABF-S3		–			C2-C	–	
Type code							
VABF-S3	Valve accessories, function plate to ISO 15407-1						
Width							
1	26 mm						
2	18 mm						
Function							
R1	Pressure regulator for port 1						
R2	Pressure regulator for port 2						
R3	Pressure regulator for port 4						
R4	Pressure regulator for port 2 and 4						
R5	Pressure regulator for port 2 and 4, reversible						
R6	Pressure regulator for port 2, reversible						
R7	Pressure regulator for port 4, reversible						
Options							
C2-C	Pressure gauge connection closed						
Pressure regulation range							
6	0.5 to 6 bar						
10	0.5 to 10 bar						

Order example:
VABF-S3-1-R4C2-C-10
Valve accessories VABF - function plate ISO 15407-1 - width 26 mm - pressure regulator for port 2 and 4, pressure gauge connection closed - up to 10 bar

Standards-based directional control valves >

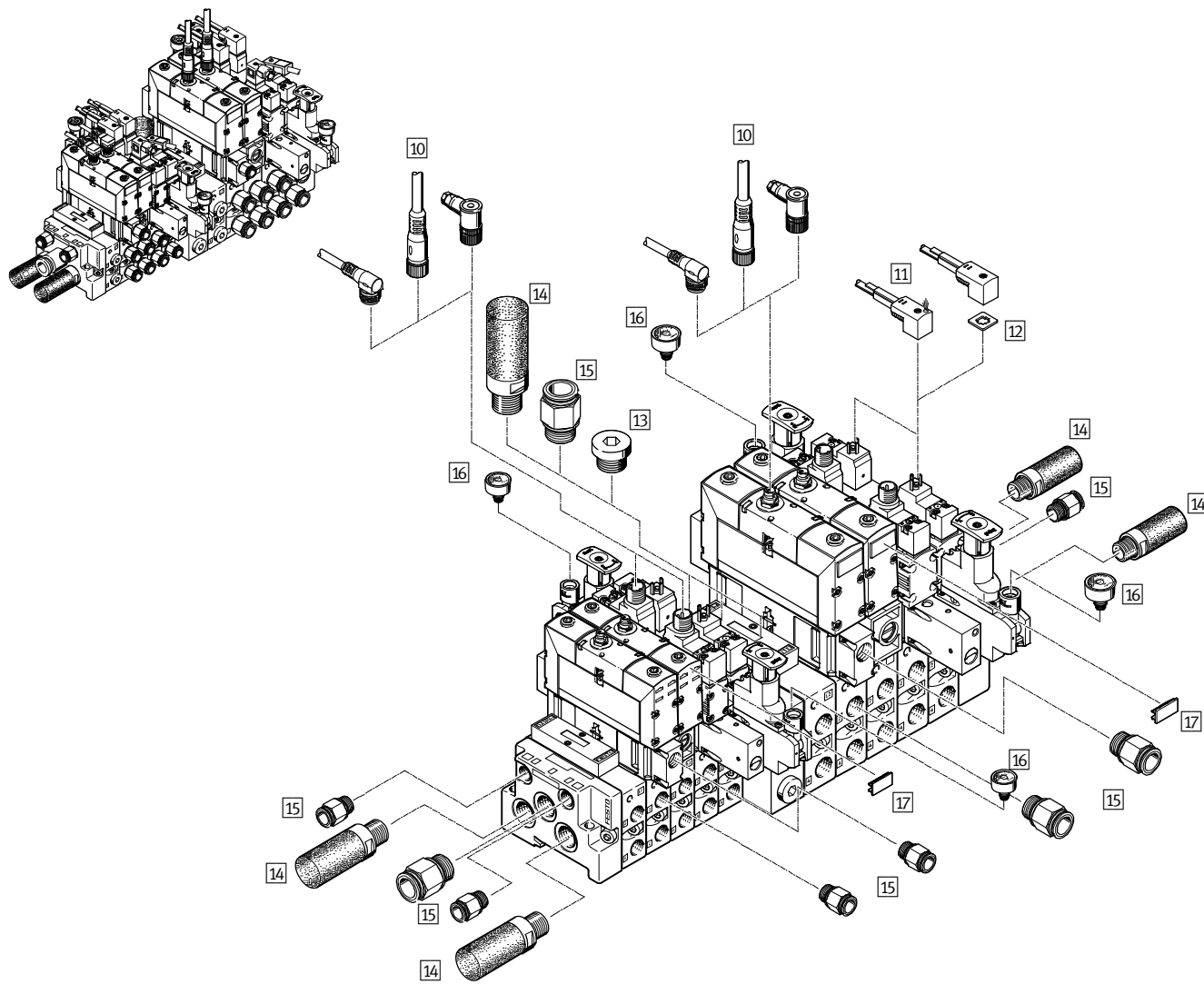
Solenoid/pneumatic valves, ISO 15407-1 ★

Accessories – Manifold assembly of solenoid valves



Variants and accessories		→ Page/online
1	Manifold sub-base NAW with ports 2 and 4 on the side	997
2	End plate kit NEV for sealing the manifold sub-bases	997
3	Intermediate plate NZV for connecting width 18 mm with width 26 mm	997
4	Cover plate NDV for vacant or spare positions	997
5	Vertical supply plate VABF...P1-A3 for intermediate air supply	997
6	Flow control plate VABF...F1-B1 for flow control in ducts 3 and 5	997
7	Vertical pressure shut-off plate VABF...L1-D1 with switch for manual shut-off of duct 1	997
8	Pressure regulator plate VABF...R...-C2	989
9	Solenoid valve VSVA	988
–	Individual sub-base NAS	998

Accessories – Manifold assembly of solenoid valves



Accessories		→ Page/online
10	Round plug connector NEBU/SIE, connecting cable/plug socket M8/M12	997
11	Square plug KMEB/MSSD-EB, type C, connecting cable/plug socket	998
12	Illuminating seal MEB-LD for displaying the signal status	998
13	Blanking plug B for sealing unused ports	998
14	Silencer U for mounting in exhaust ports	998
15	Push-in fitting QS for compressed air tubing with standard O.D.	998
16	Pressure gauge PAGN-26-10-P10 for connection to the pressure regulator plate	998
17	Inscription labels IBS-9x20 for identifying the VSVA valves with round plug	997
–	Individual sub-base NAS	998

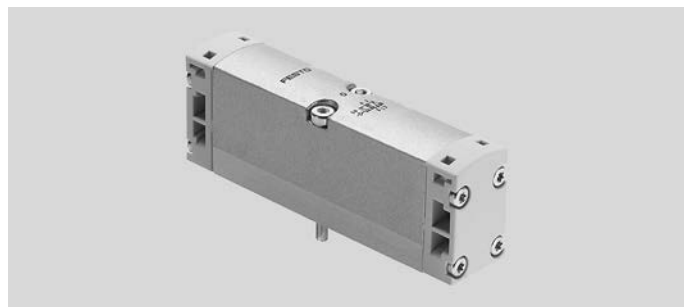
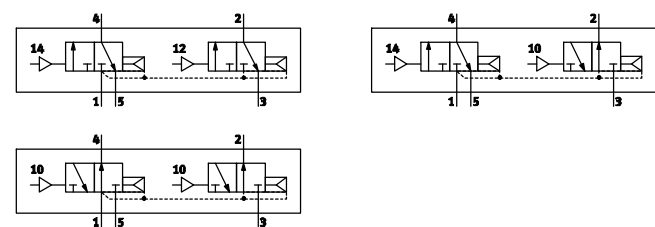
Solenoid/pneumatic valves, ISO 15407-1

Data sheet – Pneumatic valves

Technical data					Download CAD data → www.festo.com				
Width		18 mm				26 mm			
Valve function		2x 3/2 monostable	5/2 monostable	5/2 bistable	5/3-way closed	2x 3/2 monostable	5/2 monostable	5/2 bistable	5/3-way closed
Sub-base 1, 2, 3, 4, 5		G1/8				G1/4			
Pilot air 12, 14		M5				M5			
Type of mounting		Via through-hole on sub-base							
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]							
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)							
Ambient temperature [°C]		−10 ... +60							
Temperature of medium [°C]		−10 ... +60							

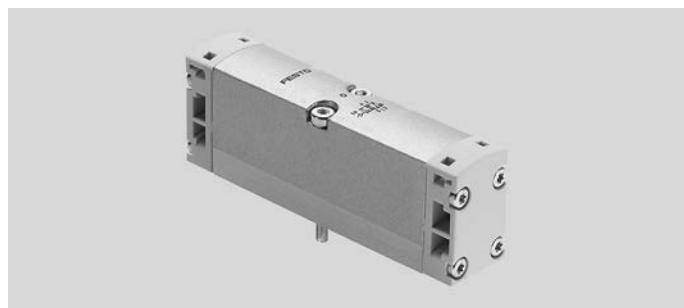
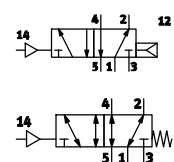
Materials	
Housing	Die-cast aluminium
Seals	NBR
Screws	Galvanised steel

Data sheet – 2x 3/2-way pneumatic valves



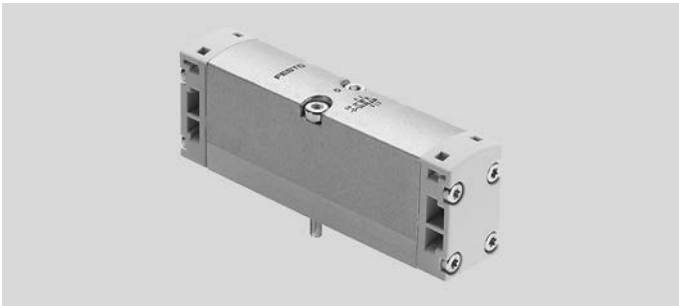
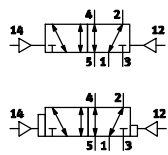
Technical data		Download CAD data → www.festo.com	
Width		18 mm	26 mm
Operating pressure		[bar] 2 ... 10	2 ... 10
Pilot pressure		[bar] 2 ... 10	2 ... 10
Standard nominal flow rate q _{nN}		[l/min] 400	900
Switching time on/off		[ms] 10/15	15/28
Design		Piston spool	
Length/width/height		[mm] 83/18/29	100/26/38

Data sheet – 5/2-way pneumatic valves, monostable



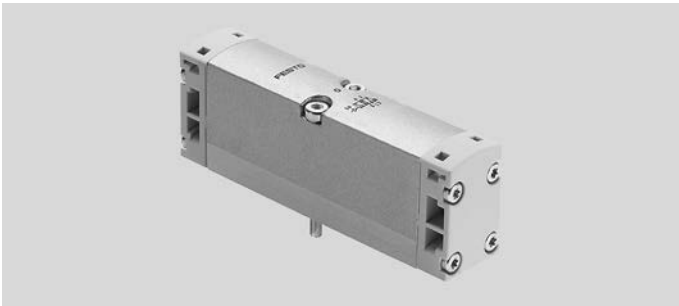
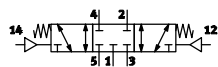
Technical data		Download CAD data → www.festo.com			
Width		18 mm		26 mm	
Reset method		Mechanical	Pneumatic	Mechanical	Pneumatic
Operating pressure		[bar] −0.9 ... +10	2 ... 10	−0.9 ... +16	2 ... 10
Pilot pressure		[bar] 3 ... 10	2 ... 10	3 ... 10	2 ... 10
Standard nominal flow rate q _{nN}		[l/min] 550		1100	
Switching time on/off		[ms] 8/18	11/20	10/35	18/30
Design		Piston spool			
Length/width/height		[mm] 83/18/29		100/26/38	

Data sheet – 5/2-way pneumatic valves, bistable



Technical data		Download CAD data → www.festo.com	
Width		18 mm	26 mm
Operating pressure	[bar]	−0.9 ... +10	−0.9 ... +16
Pilot pressure	[bar]	2 ... 10	2 ... 10
Standard nominal flow rate q _{nN}	[l/min]	550	1100
Changeover time	[ms]	6	10
Design		Piston spool	
Length/width/height	[mm]	83/18/29	100/26/38

Data sheet – 5/3-way pneumatic valves, normally closed



Technical data		Download CAD data → www.festo.com	
Width		18 mm	26 mm
Operating pressure	[bar]	−0.9 ... +10	−0.9 ... +16
Pilot pressure	[bar]	3 ... 10	3 ... 10
Standard nominal flow rate q _{nN}	[l/min]	450	1000
Switching time on/off	[ms]	9/18	13/32
Design		Piston spool	
Length/width/height	[mm]	83/18/29	100/26/38

Standards-based directional control valves >

Solenoid/pneumatic valves, ISO 15407-1 ★

Order code – Pneumatic valve

VSPA

B

Type code	
VSPA	Standards-based valves to ISO 15407-1/-2

Version	
B	Sub-base valve

Valve function	
T32C	2x 3/2-way valve, monostable, normally closed
T32U	2x 3/2-way valve, monostable, normally open
T32H	2x 3/2-way valve, monostable, 1x normally closed, 1x open
M52-A	5/2-way valve, monostable, pneumatic spring return
M52-M	5/2-way valve, monostable, mechanical spring return
B52	5/2-way valve, bistable
P53C	5/3-way valve, normally closed
P53U	5/3-way valve, normally open
P53E	5/3-way valve, normally exhausted

Pneumatic connection	
A1	Port pattern, ISO size 26 mm (01)
A2	Port pattern, ISO size 18 mm (02)

Order example:
VSPA-B-T32C-A2
Standards-based valve VSPA, to ISO 15407-1/-2 – sub-base valve - 2x 3/2-way valve, monostable, normally closed – ISO size 18 mm (02)

Ordering – Product options

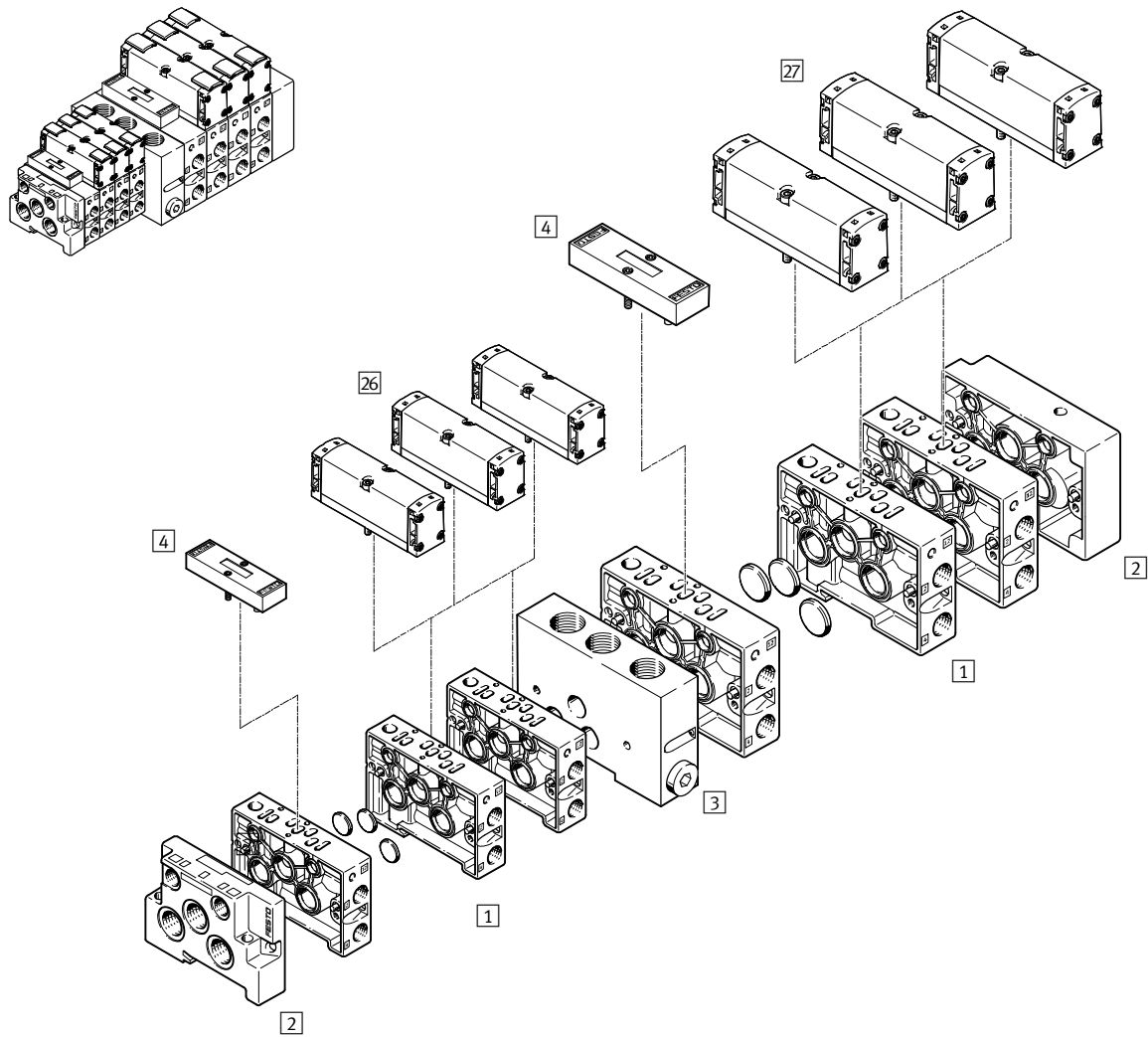
Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

Accessories – Manifold assembly of pneumatic valves

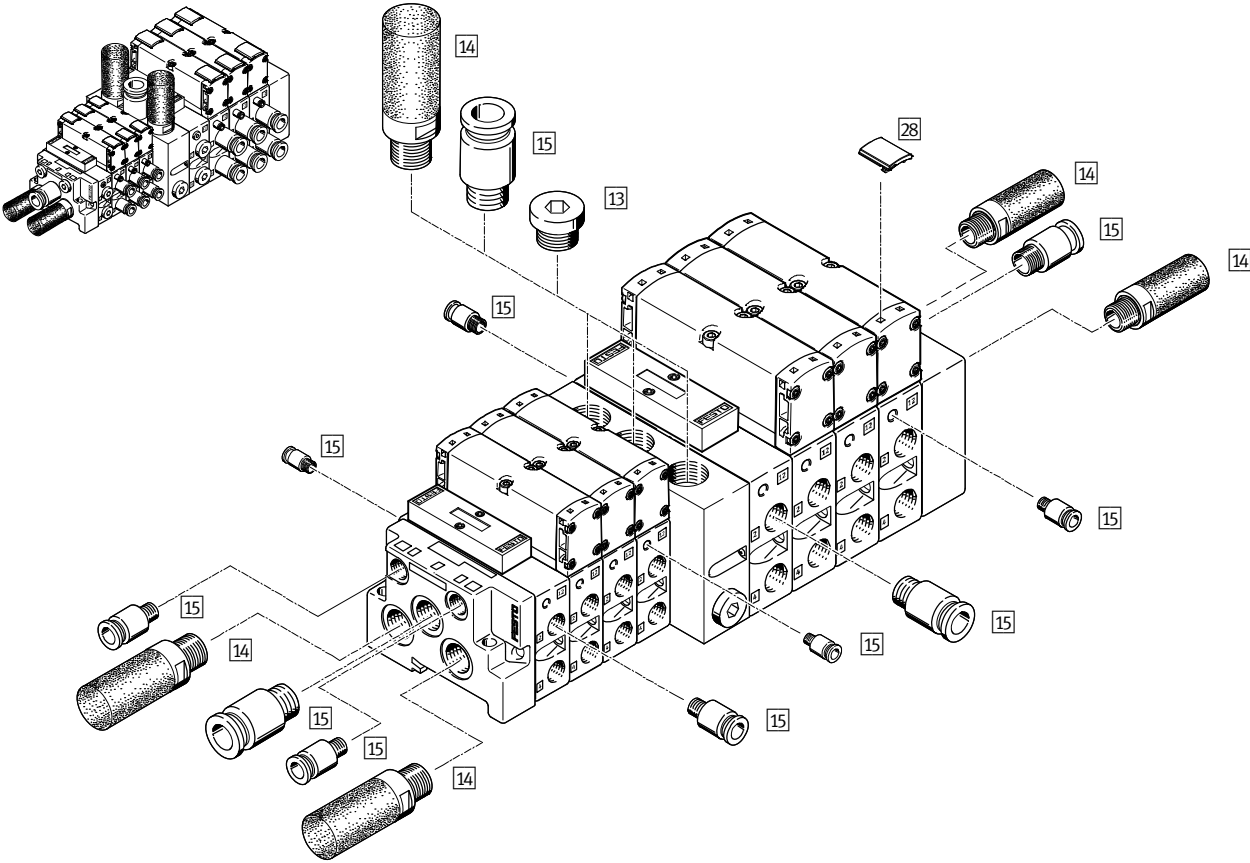


Variants and accessories		→ Page/online
1	Manifold sub-base NAW with ports 2 and 4 on the side	997
2	End plate kit NEV for sealing the manifold sub-bases	997
3	Intermediate plate NZV for connecting width 18 mm with width 26 mm	997
4	Cover plate NDV for vacant or spare positions	997
26	Pneumatic valve VSPA...A2, width 18 mm	994
27	Pneumatic valve VSPA...A1, width 26 mm	994
–	Individual sub-base NAS	998

Standards-based directional control valves >

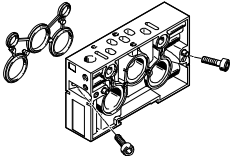
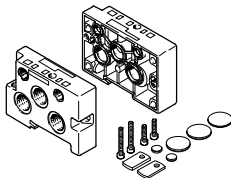
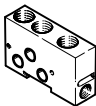
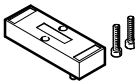
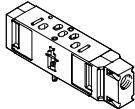
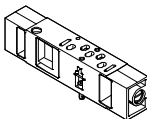
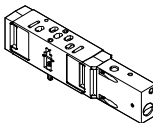
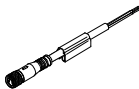
Solenoid/pneumatic valves, ISO 15407-1 ★

Accessories – Manifold assembly of pneumatic valves



Accessories		→ Page/online
13	Blanking plug B for sealing unused ports	998
14	Silencer U for mounting in exhaust ports	998
15	Push-in fitting QS for compressed air tubing with standard O.D.	998
28	Inscription label holder ASCF for identifying the valves	998
–	Individual sub-base NAS	998

Accessories – Ordering data

Description		Part no.	Type code	
1 Manifold sub-base with ports 2 and 4 on the side				
	For solenoid valve	18 mm	★ 161110 NAW-1/8-02-VDMA	
		26 mm	★ 161102 NAW-1/4-01-VDMA	
	For pneumatic valve	18 mm	161111 NAW-1/8-02-VDMA-VL	
		26 mm	161103 NAW-1/4-01-VDMA-VL	
2 End plate kit				
	Width 18 mm		★ 161112 NEV-02-VDMA	
	Width 26 mm		★ 161104 NEV-01-VDMA	
3 Intermediate plate for connecting the sizes 02 and 01				
	Width 18/26 mm		161108 NZV-01/02-VDMA	
4 Cover plate for vacant position				
	Width 18 mm		★ 161114 NDV-02-VDMA	
	Width 26 mm		★ 161107 NDV-01-VDMA	
5 Vertical supply plate				
	Width 18 mm		544435 VABF-S3-2-P1A3-G18	
	Width 26 mm		544434 VABF-S3-1-P1A3-G14	
6 Flow control plate				
	Width 18 mm		543603 VABF-S3-2-F1B1-C	
	Width 26 mm		543604 VABF-S3-1-F1B1-C	
7 Vertical pressure shut-off plate				
	Width 18 mm		543601 VABF-S3-2-L1D1-C	
	Width 26 mm		543602 VABF-S3-1-L1D1-C	
10 Round plug connector				
	Connecting cable M8	Straight socket	2.5 m	541342 NEBU-M8G4-K-2.5-LE4
			5 m	541343 NEBU-M8G4-K-5-LE4
		Angled socket	2.5 m	541344 NEBU-M8W4-K-2.5-LE4
			5 m	541345 NEBU-M8W4-K-5-LE4
	Connecting cable M12	Straight socket	2.5 m	★ 550326 NEBU-M12G5-K-2,5-LE4
			5 m	★ 541328 NEBU-M12G5-K-5-LE4
		Angled socket	5 m	541329 NEBU-M12W5-K-5-LE4
	Socket M12, angled, 4-pin, screw terminal		12956	SIE-WD-TR

Data sheets → Page 1543

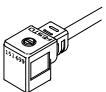
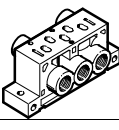
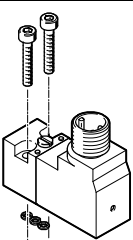
08

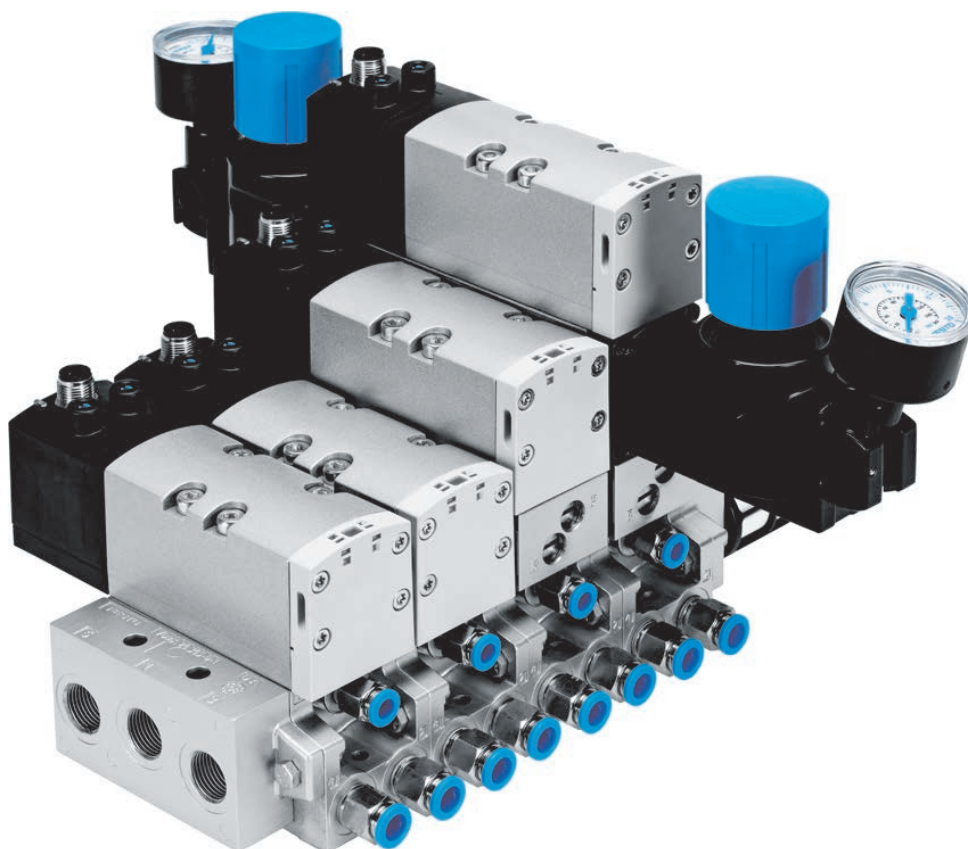
Valves

Standards-based directional control valves >

Solenoid/pneumatic valves, ISO 15407-1 ★

Accessories – Ordering data

Description				Part no.	Type code
11 Square plug type C				Data sheets online: → kmeb	
	Connecting cable	24 V DC, with LED	2.5 m	★ 151688	KMEB-1-24-2,5-LED
			5 m	151689	KMEB-1-24-5-LED
			10 m	193457	KMEB-1-24-10-LED
		Up to 240 V, without LED	2.5 m	151690	KMEB-1-230AC-2,5
	5 m		151691	KMEB-1-230AC-5	
Plug socket	Screw terminal connection			151687	MSSD-EB
	Insulation displacement technology			192745	MSSD-EB-S-M14
12 Illuminating seal for plug type C					
	12 ... 24 V DC			151717	MEB-LD-12-24DC
	230 V AC			151718	MEB-LD-230AC
13 Blanking plug				Data sheets online: → b-1	
	For thread G1/8		★	3568	B-1/8
	For thread G3/8		★	3570	B-3/8
	For thread G1/2		★	3571	B-1/2
14 Silencer				Data sheets → Page 1661	
	For thread G1/8		★	6841	U-1/8-B
	For thread G3/8		★	6843	U-3/8-B
	For thread G1/2		★	6844	U-1/2-B
15 Push-in fitting				Data sheets → Page 1443	
	For thread G1/8		★	186098	QS-G1/8-8
	For thread G3/8		★	186103	QS-G3/8-12
	For thread G1/2		★	186104	QS-G1/2-12
16 Pressure gauge				Data sheets online: → pagn	
	With cartridge connection for regulator, 0 ... 16 bar			543487	PAGN-26-16-P10
17 Inscription label for valves					
	Scope of delivery 24 labels in frame			18182	IBS-9x20
28 Inscription label holder					
	Clip-on for valve cap			540888	ASCF-T-S6
Individual sub-base					
	Width 18 mm		★	161115	NAS-1/8-02-VDMA
	Width 26 mm		★	161109	NAS-1/4-01-VDMA
Pilot valve to ISO 15218				Data sheets online: → vscs	
	Plug, square design, type C		24 V DC	546256	VSCS-B-M32-MH-WA-1C1
	Plug M12		24 V DC	573215	VSCS-B-M32-MD-WA-1R3



Leaving nothing to be desired

- + Manifold assembly
with mixed sizes possible
- + Globally standardised pneumatic
interfaces with ISO size 1, 2, 3 and 4
- + Comprehensive range of valve
functions and accessories

Electrically and pneumatically actuated directional control valves ›
Standards-based directional control valves ›
Solenoid valves, to ISO 5599-1

MN1H
VSVA
MFH

Electrically and pneumatically actuated directional control valves > Standards-based directional control valves >

Solenoid valves, to ISO 5599-1

MN1H, VSVA, MFH



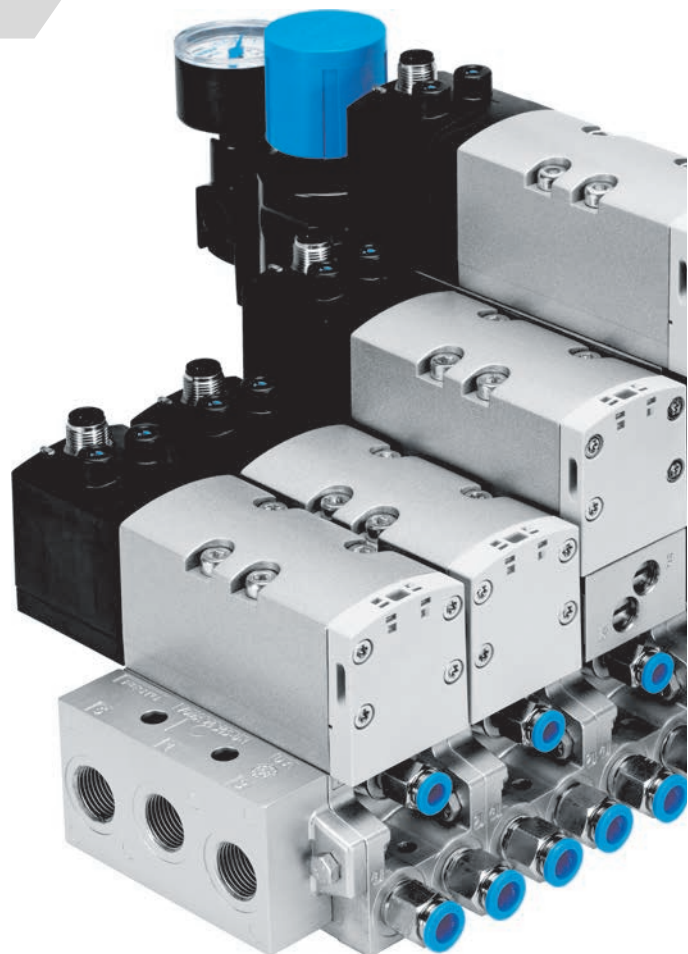
Overview, configuration and ordering

→ www.festo.com/catalogue/5599-1



Additional information, support and user documentation

→ www.festo.com/sp/5599-1



- + Sturdy metal design
- + ISO size 1, 2, 3 and 4
- + Manifold assembly with a mixture of ISO sizes 1, 2 and 3 possible
- + MN1H: N1 solenoid coil
- + VSVA: with central plug
- + MFH: F solenoid coil
- + Wide range of vertical stacking modules: pressure regulator, flow control valve, vertical pressure shut-off plate, etc.
- + Also available as a valve manifold

Product range overview

Type	Actuation type	Valve function	qnN [l/min]				Pilot air supply port	➔ Page/ online	
			Width						
			42 mm	52 mm	65 mm	76 mm			
MN1H-5/2	N1 solenoid coil ¹⁾ 12, 24 V DC 24, 110, 230 V AC	5/2-way valve, single solenoid	1200	2300	4500	–	Internal/ external	1003	
JMN1H-5/2		5/2-way valve, double solenoid			4500			1003	
JMN1DH-5/2		5/2-way valve, double solenoid with dominant signal at 14			4500			5599-1	
MN1H-5/3G		5/3-way valve, normally closed			4100			1003	
MN1H-5/3B		5/3-way valve, normally open			4000			5599-1	
MN1H-5/3E		5/3-way valve, normally exhausted			4600				
MEBH-5/2	EB solenoid coil 24 V DC	5/2-way valve, single solenoid	–	–	4500	–	Internal	5599-1	
JMEBH-5/2		5/2-way valve, double solenoid			4500			5599-1	
JMEBDH-5/2		5/2-way valve, double solenoid with dominant signal at 14			4500			5599-1	
MEBH-5/3G		5/3-way valve, normally closed			4100			5599-1	
MEBH-5/3B		5/3-way valve, normally open			4000			5599-1	
MEBH-5/3E		5/3-way valve, normally exhausted			4600				
VSVA-B-T22C	Solenoid coil with central plug M12 24 V DC	2x 2/2-way valve, 2x normally closed	1300	2800	–	–	Internal/ external	5599-1	
VSVA-B-T32C		2x 3/2-way valve, 2x normally closed	1100	2200	–			1005	
VSVA-B-T32U		2x 3/2-way valve, 2x normally open	1300	2800					
VSVA-B-T32H		2x 3/2-way valve, 1x normally open, 1x normally closed							
VSVA-B-M52		5/2-way valve, single solenoid							1006
VSVA-B-B52		5/2-way valve, double solenoid							
VSVA-B-D52		5/2-way valve, double solenoid with dominant signal at 14							
VSVA-B-P53C		5/3-way valve, normally closed	2700					1007	
VSVA-B-P53U		5/3-way valve, normally open							
VSVA-B-P53E		5/3-way valve, normally exhausted							
MFH-5/2	F solenoid coil 12, 24, 42, 48 V DC 24, 42, 48, 110, 230 V AC	5/2-way valve, single solenoid	1200	2300	4500	–	Internal/ external	1011	
JMFH-5/2		5/2-way valve, double solenoid			4500			1012	
JMFDH-5/2		5/2-way valve, double solenoid with dominant signal at 14			4500			5599-1	
MFH-5/3G		5/3-way valve, normally closed			4100				
MFH-5/3B		5/3-way valve, normally open			4000				
MFH-5/3E		5/3-way valve, normally exhausted			4600			1012	
MDH-5/2...-M12	D solenoid coil 24 V DC	5/2-way valve, single solenoid	1200	2300	4500	–	Internal/ external	5599-1	
JMDH-5/2...-M12		5/2-way valve, double solenoid			4500				Internal
JMDDH-5/2...-M12		5/2-way valve, double solenoid with dominant signal at 14			4500				
MDH-5/3G...-M12		5/3-way valve, normally closed			4100				
MDH-5/3B...-M12		5/3-way valve, normally open			4000				
MDH-5/3E...-M12		5/3-way valve, normally exhausted			4600				
MDH-5/2-3/4	D solenoid coil 24 V DC 42, 110, 230 V AC	5/2-way valve, single solenoid	–	–	–	6000	Internal	5599-1	
JMDH-5/2-3/4		5/2-way valve, double solenoid							
MDH-5/3G-3/4		5/3-way valve, normally closed				4800			
MDH-5/3E-3/4		5/3-way valve, normally exhausted							
VL-5/2	Pneumatic	5/2-way valve, single solenoid	1200	2300	4500	6000	None	5599-1	
J-5/2		5/2-way valve, double solenoid							
JD-5/2		5/2-way valve, double solenoid with dominant signal at 14				–			
VL-5/3G		5/3-way valve, normally closed			4100	4800			
VL-5/3B		5/3-way valve, normally open				–			
VL-5/3E		5/3-way valve, normally exhausted				4800			

1) The solenoid coil must be ordered separately.

Standards-based directional control valves >

Solenoid valves, ISO 5599-1 ★

Data sheet – MN1H/JMN1H

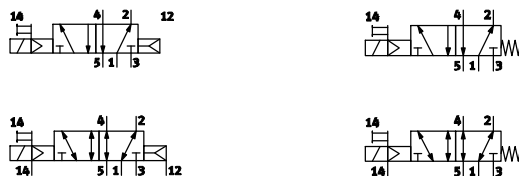
Technical data				Download CAD data → www.festo.com			
Width		42 mm			52 mm		
Valve function		5/2 single solenoid	5/2 double solenoid	5/3 closed	5/2 single solenoid	5/2 double solenoid	5/3 closed
Sub-base		1, 2, 3, 4, 5		G1/4		G3/8	
Pilot air		12, 14		G1/8		G1/8	
Type of mounting		Via through-hole on sub-base					
Electrical data – N1 solenoid coil							
Electrical connection		Plug pins, 3-pin, with connection pattern to EN 175301-803, type A					
Operating voltage		[V DC]	12, 24				
		[V AC]	24, 110, 230 (50 ... 60 Hz)				
Power consumption		DC	[W]	2.5			
		AC	[VA]	Pull: 7.5			
				Hold: 5			
Degree of protection to EN 60529		With plug socket to IP65					

Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
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

Materials	
Housing	Die-cast aluminium
Seals	HNBR, NBR

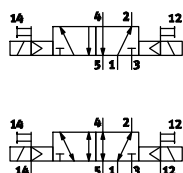


Data sheet – 5/2-way valve MN1H, single solenoid



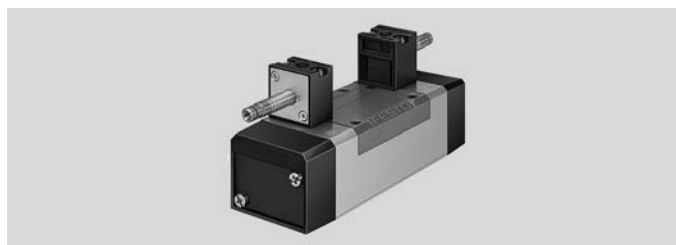
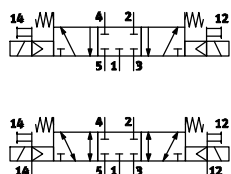
Technical data			Download CAD data → www.festo.com			
Width			42 mm		52 mm	
Reset method			Mechanical	Pneumatic	Mechanical	Pneumatic
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	2 ... 10	3 ... 10	2 ... 10
	External pilot air supply	[bar]	-0.9 ... +16			
Pilot pressure			[bar]	3 ... 10	2 ... 10	3 ... 10
Standard nominal flow rate			qnN	[l/min]	1200	2300
Switching time			On/off	[ms]	17/39	23/32
Design			Piston spool			
Length/width/height			[mm]	128/42/74	118/42/74	162/54/84

Data sheet – 5/2-way valve JMN1H, double solenoid



Technical data			Download CAD data → www.festo.com			
Width			42 mm		52 mm	
Operating pressure	Internal pilot air supply	[bar]	2 ... 10			
	External pilot air supply	[bar]	-0.9 ... +16			
Pilot pressure			[bar]	2 ... 10		
Standard nominal flow rate			qnN	[l/min]	1200	2300
Switching time			Change-over	[ms]	18	21
Design			Piston spool			
Length/width/height			[mm]	148/42/74	165/54/84	

Data sheet – 5/3-way valve MN1H, normally closed



Technical data			Download CAD data → www.festo.com			
Width			42 mm		52 mm	
Operating pressure	Internal pilot air supply	[bar]	3 ... 10			
	External pilot air supply	[bar]	-0.9 ... +16			
Pilot pressure			[bar]	3 ... 10		
Standard nominal flow rate			qnN	[l/min]	1200	2300
Switching time			On/off	[ms]	20/44	33/82
Design			Piston spool			
Length/width/height			[mm]	148/42/74	165/54/84	

Standards-based directional control valves >

Solenoid valves, ISO 5599-1 ★

Order code – MN1H/JMN1H

			D				C
Solenoid valve without coil							
MN1H	5/2-way valve, single solenoid						
	5/3-way valve						
JMN1H	5/2-way valve, double solenoid						
Valve function							
5/2	5/2-way valve						
5/3G	5/3-way valve, normally closed						
Standard identification							
D	Standard identification D						
Size							
1	Width 42 mm						
2	Width 52 mm						
Reset method for 5/2-way valve, single solenoid							
–	Pneumatic spring						
FR	Mechanical spring	1					
Pilot air supply port							
–	Internal						
S	External						
Generation							
C	C series						

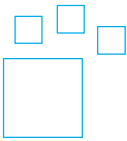
1 Only for 5/2-way valves, single solenoid

Order example:

MN1H-5/2-D-2-FR-S-C

Solenoid valve without coil MN1H - 5/2-way valve, single solenoid - standard identification D - width 52 mm - mechanical spring reset method - external pilot air supply - C series

Ordering – Product options



Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

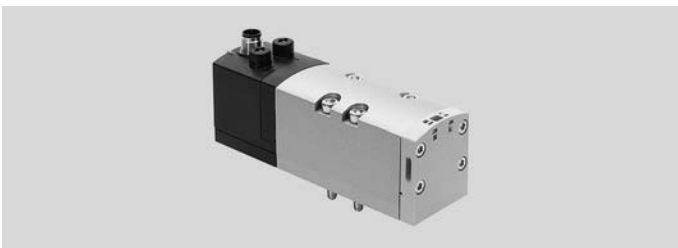
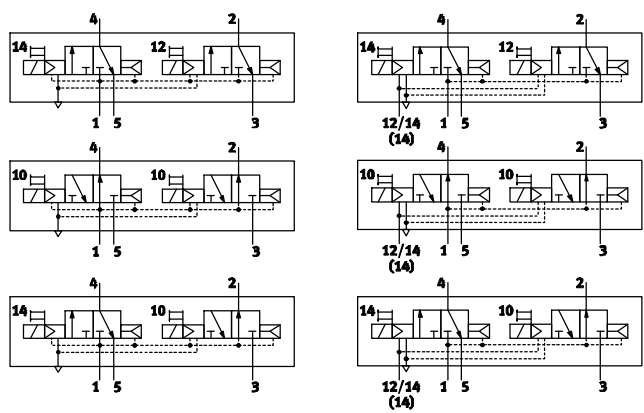
Data sheet – VSVA

Technical data		Download CAD data → www.festo.com			
Width		42 mm			
Valve function		52 mm			
Valve function		2x 3/2-way single solenoid	5/2 single solenoid	5/2 double solenoid	5/3 single solenoid
Sub-base		1, 2, 3, 4, 5	G1/4	G3/8	G1/8
Type of mounting		12, 14	M5	G1/8	
Electrical data – Solenoid coil		On sub-base			
Electrical connection		Central plug, round design M12x1, 3-pin			
Operating voltage		[V DC]	24		
Power consumption		DC	[W]	1.3	1.6
Degree of protection				4.6	
Protective circuit and LED				With plug socket to IP65 (to EN 60529) and NEMA4	
				Integrated in the valve	

Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature	[°C] –5 ... +50

Materials	
Housing	Die-cast aluminium, PA
Screws	Galvanised steel
Seals	FPM, NBR

Data sheet – 2x 3/2-way valve VSVA

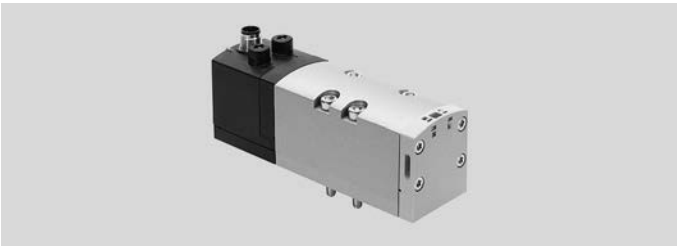
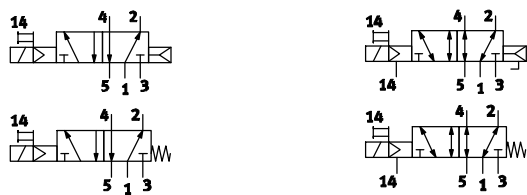


Technical data		Download CAD data → www.festo.com	
Width		42 mm	52 mm
Reset method		Pneumatic	
Operating pressure	Internal pilot air supply	[bar]	3 ... 10
	External pilot air supply	[bar]	3 ... 10
Pilot pressure		[bar]	3 ... 10
Standard nominal flow rate	qnN	[l/min]	1100
Switching time	On/off	[ms]	20/38
Design		Piston spool	
Length/width/height		[mm]	138/42/59
			160/52/60

Standards-based directional control valves >

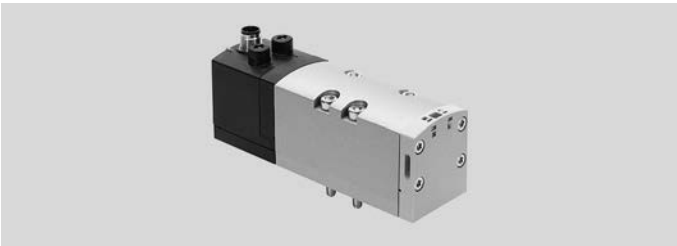
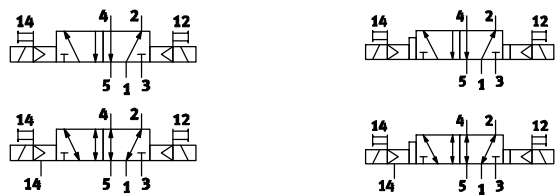
Solenoid valves, ISO 5599-1 ★

Data sheet – 5/2-way valve VSVA, single solenoid



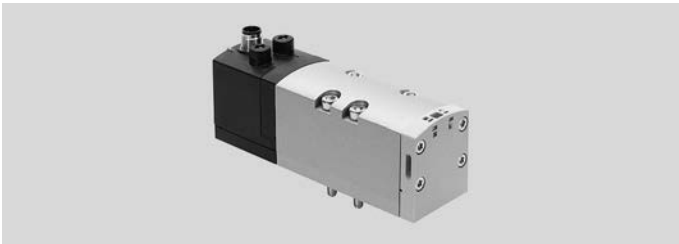
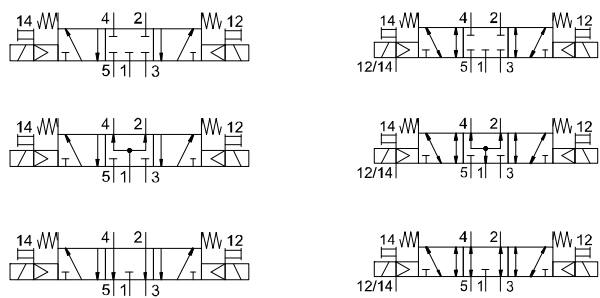
Technical data			Download CAD data → www.festo.com			
Width			42 mm		52 mm	
Reset method			Mechanical	Pneumatic	Mechanical	Pneumatic
Operating pressure	Internal pilot air supply	[bar]	3 ... 10		3 ... 10	
	External pilot air supply	[bar]	-0.9 ... +16		-0.9 ... +16	
Pilot pressure		[bar]	3 ... 10		3 ... 10	
Standard nominal flow rate	qnN	[l/min]	1300		2800	
Switching time	On/off	[ms]	22/60	27/45	20/60	40/45
Design			Piston spool		Piston spool	
Length/width/height			138/42/59		160/52/60	

Data sheet – 5/2-way valve VSVA, double solenoid



Technical data			Download CAD data → www.festo.com			
Width			42 mm		52 mm	
Operating pressure	Internal pilot air supply	[bar]	3 ... 10		3 ... 10	
	External pilot air supply	[bar]	-0.9 ... +16		-0.9 ... +16	
Pilot pressure		[bar]	3 ... 10		3 ... 10	
Standard nominal flow rate	qnN	[l/min]	1300		2800	
Changeover time	Dominant at 1st signal	[ms]	16		18	
	Dominant at 14		19		18	
Design			Piston spool		Piston spool	
Length/width/height			138/42/59		160/52/60	

Data sheet – 5/3-way valve VSVA



Technical data			Download CAD data → www.festo.com	
Width			42 mm	52 mm
Reset method			Mechanical	–
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +16	–0.9 ... +16
Pilot pressure		[bar]	3 ... 10	3 ... 10
Standard nominal flow rate	q _{nN}	[l/min]	1300	2700
Switching time	On/off	[ms]	22/65	23/60
Design			Piston spool	Piston spool
Length/width/height		[mm]	138/42/59	160/52/60

Standards-based directional control valves >

Solenoid valves, ISO 5599-1 ★

Order code – VSVA 2x 3/2-way valves

	VSVA	–	B	–	T	32		–	A		D	–		–	1	R5	L
Valve series																	
VSVA	Standards-based valve to ISO 5599-1																
Valve type																	
B	Sub-base valve																
Valve function																	
T	2 single solenoid valves in one housing																
Connections/switching positions																	
32	3/2-way valve																
Normal position/additional function																	
C	Closed																
U	Open																
H	1x open, 1x closed																
Reset method																	
A	Pneumatic spring																
Pilot air supply port																	
–	Internal																
Z	External																
Manual override																	
D	Non-detenting/detenting																
Standard																	
D1	ISO size 1, width 42 mm																
D2	ISO size 2, width 52 mm																
Operating voltage																	
1	24 V DC																
Electrical connection																	
R5	Central plug M12x1																
Signal status display																	
L	LED (integrated)																

Order example:

VSVA-B-T32C-AZD-D1-1R5L

Standards-based valve VSVA - sub-base valve - 2 single solenoid valves in one housing - 3/2-way valve - normally closed - pneumatic spring reset method - external pilot air supply - non-detenting/detenting manual override - width 42 mm - operating voltage 24 V DC - central plug M12x1 electrical connection - LED signal status display

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
➔ www.festo.com/catalogue/...

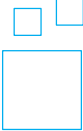
Enter the type code in the search field.

Order code – VSVA 5/2-way valves

VSVA		–	B		–			52	–			D	–			1	R5	L
Valve series																		
VSVA		Standards-based valve to ISO 5599-1																
Valve type																		
B		Sub-base valve																
Valve function																		
M		single solenoid																
B		double solenoid																
D		double solenoid with dominant signal at 14																
Connections/switching positions																		
52		5/2-way valve																
Reset method																		
A		Pneumatic spring																
M		Mechanical spring																
–		double solenoid valve																
Pilot air supply port																		
–		Internal																
Z		External																
Manual override																		
D		Non-detenting/detenting																
Standard																		
D1		ISO size 1, width 42 mm																
D2		ISO size 2, width 52 mm																
Operating voltage																		
1		24 V DC																
Electrical connection																		
R5		Central plug M12x1																
Signal status display																		
L		LED (integrated)																

Order example:
VSVA-B-B52-D-D1-1R5L
Standards-based valve VSVA - sub-base valve - double solenoid - 5/2-way valve - internal pilot air supply - non-detenting/detenting manual override - width 42 mm - operating voltage 24 V DC - central plug M12x1 electrical connection - LED signal status display

Ordering – Product options



Configurable product

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

The configurator can be found under Products on the DVD or

➔ www.festo.com/catalogue/...

Enter the type code in the search field.

 Quick ordering¹⁾

		Part no.	Type
5/2-way valve, single solenoid	Pneumatic spring reset method	561362	VSVA-B-M52-AD-D1-1R5L
	Mechanical spring reset method	561363	VSVA-B-M52-MD-D1-1R5L
5/2-way valve, double solenoid	Dominant at 1st signal	561364	VSVA-B-B52-D-D1-1R5L

1) All products in this table are easy to select and quick to order.

Standards-based directional control valves >

Solenoid valves, ISO 5599-1 ★

Order code – VSVA 5/3-way valves

	VSVA	–	B	–	P	53	–		–	D	–		–	1	R5	L
Valve series																
VSVA	Standards-based valve to ISO 5599-1															
Valve type																
B	Sub-base valve															
Valve function																
P	single solenoid, mid-position															
Connections/switching positions																
53	5/3-way valve															
Normal position/additional function																
C	Closed															
U	Open															
E	Exhausting															
Pilot air supply port																
–	Internal															
Z	External															
Manual override																
D	Non-detenting/detenting															
Standard																
D1	ISO size 1, width 42 mm															
D2	ISO size 2, width 52 mm															
Operating voltage																
1	24 V DC															
Electrical connection																
R5	Central plug M12x1															
Signal status display																
L	LED (integrated)															

Order example:

VSVA-B-P53C-ZD-D1-1R5L

Standards-based valve VSVA - sub-base valve - single solenoid, mid-position - 5/3-way valve - normally closed - external pilot air supply - non-detenting/detenting manual override - width 42 mm - operating voltage 24 V DC - central plug M12x1 electrical connection - LED signal status display

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
➔ www.festo.com/catalogue/...

Enter the type code in the search field.

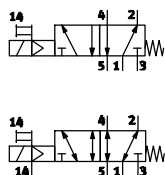
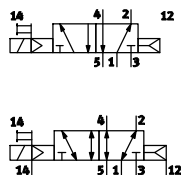
Data sheet – MFH/JMFH

Technical data				Download CAD data ➔ www.festo.com			
Width		42 mm			52 mm		
Valve function		5/2 single solenoid	5/2 double solenoid	5/3 exhausting	5/2 single solenoid	5/2 double solenoid	5/3 exhausting
Sub-base		1, 2, 3, 4, 5			G1/4		
Type of mounting		G3/8					
Via through-hole on sub-base							
Electrical data – F solenoid coil							
Electrical connection		Plug pins, 3-pin, with connection pattern to Festo standard for MSSD-F					
Operating voltage	DC voltage	[V DC]	12, 24, 42, 48				
	AC voltage	[V AC]	24, 42, 48, 110, 230, 240 (50 ... 60 Hz)				
Coil characteristics	DC voltage	[W]	4.5				
	AC voltage	[VA]	Pull: 9 Hold: 7				
Degree of protection to EN 60529		With plug socket to IP65					

Operating conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature	[°C]	−5 ... +40
Temperature of medium	[°C]	−10 ... +60

Materials	
Housing	Die-cast aluminium
Seals	HNBR, NBR

Data sheet – 5/2-way valve MFH, single solenoid

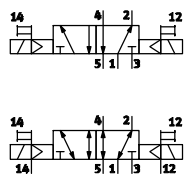


Technical data				Download CAD data → www.festo.com				
Width			42 mm		52 mm			
Reset method			Mechanical	Pneumatic	Mechanical	Pneumatic		
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	2 ... 10	3 ... 10	2 ... 10		
	External pilot air supply	[bar]	−0.9 ... +16	−0.9 ... +16	−0.9 ... +16	−0.9 ... +16		
Pilot pressure			[bar]		2 ... 10			
Standard nominal flow rate			qnN	[l/min]	1200	2300		
Switching time			On/off	[ms]	16/45	23/35	27/73	48/71
Design			Piston spool					
Length/width/height			[mm]	126/42/70	115/42/70	160/54/80	142/54/80	

Standards-based directional control valves >

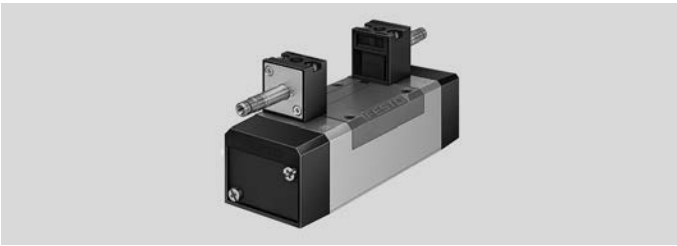
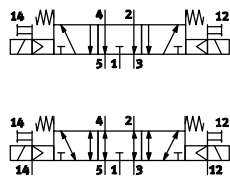
Solenoid valves, ISO 5599-1 ★

Data sheet – 5/2-way valve JMFH, double solenoid



Technical data			Download CAD data → www.festo.com	
Width		42 mm	52 mm	
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	
	External pilot air supply	[bar]	-0.9 ... +16	
Pilot pressure		[bar]	2 ... 10	
Standard nominal flow rate	qnN	[l/min]	1200	2300
Switching time	Change-over	[ms]	16	18
Design			Piston spool	
Length/width/height		[mm]	143/42/70	160/54/80

Data sheet – 5/3-way valve MFH, normally exhausted



Technical data			Download CAD data → www.festo.com	
Width		42 mm	52 mm	
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	
	External pilot air supply	[bar]	-0.9 ... +16	
Pilot pressure		[bar]	2 ... 10	
Standard nominal flow rate	qnN	[l/min]	1200	2300
Switching time	On/off	[ms]	18/36	35/67
Design			Piston spool	
Length/width/height		[mm]	143/42/70	160/54/80

Order code – MFH/JMFH

			D					C
Solenoid valve								
MFH	Single solenoid, for F solenoid coil							
JMFH	Double solenoid, for F solenoid coil							
Valve function								
5/2	5/2-way valve							
5/3E	5/3-way valve, normally exhausted							
Standard identification								
D	Standard identification D							
Size								
1	Width 42 mm							
2	Width 52 mm							
Reset method for 5/2-way valve, single solenoid								
–	Pneumatic spring							
FR	Mechanical spring 1							
Pilot air supply port								
–	Internal							
S	External							
Generation								
C	C series							

1 Only for 5/2-way valves,
single solenoid

Order example:
JMFH-5/2-D-1-C
Double solenoid valve without solenoid coil JMFH - 5/2-way valve - standard identification D - width 42 mm - C series

Ordering – Product options

Configurable product

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

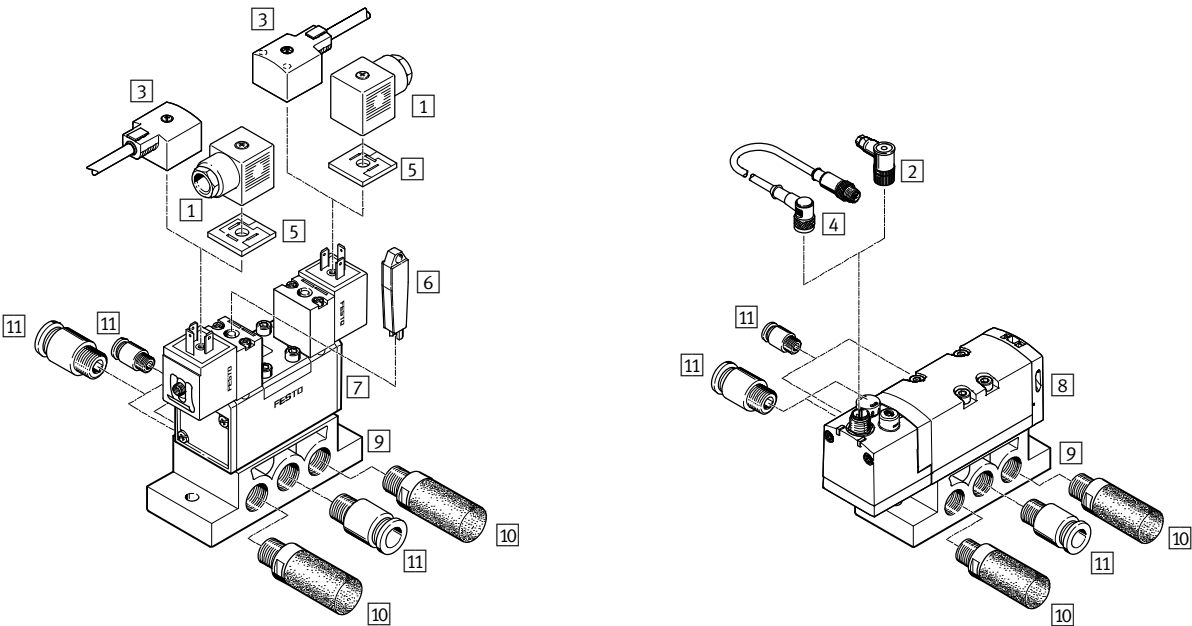
The configurator can be found under Products on the DVD or
www.festo.com/catalogue/...

Enter the type code in the search field.

Standards-based directional control valves >

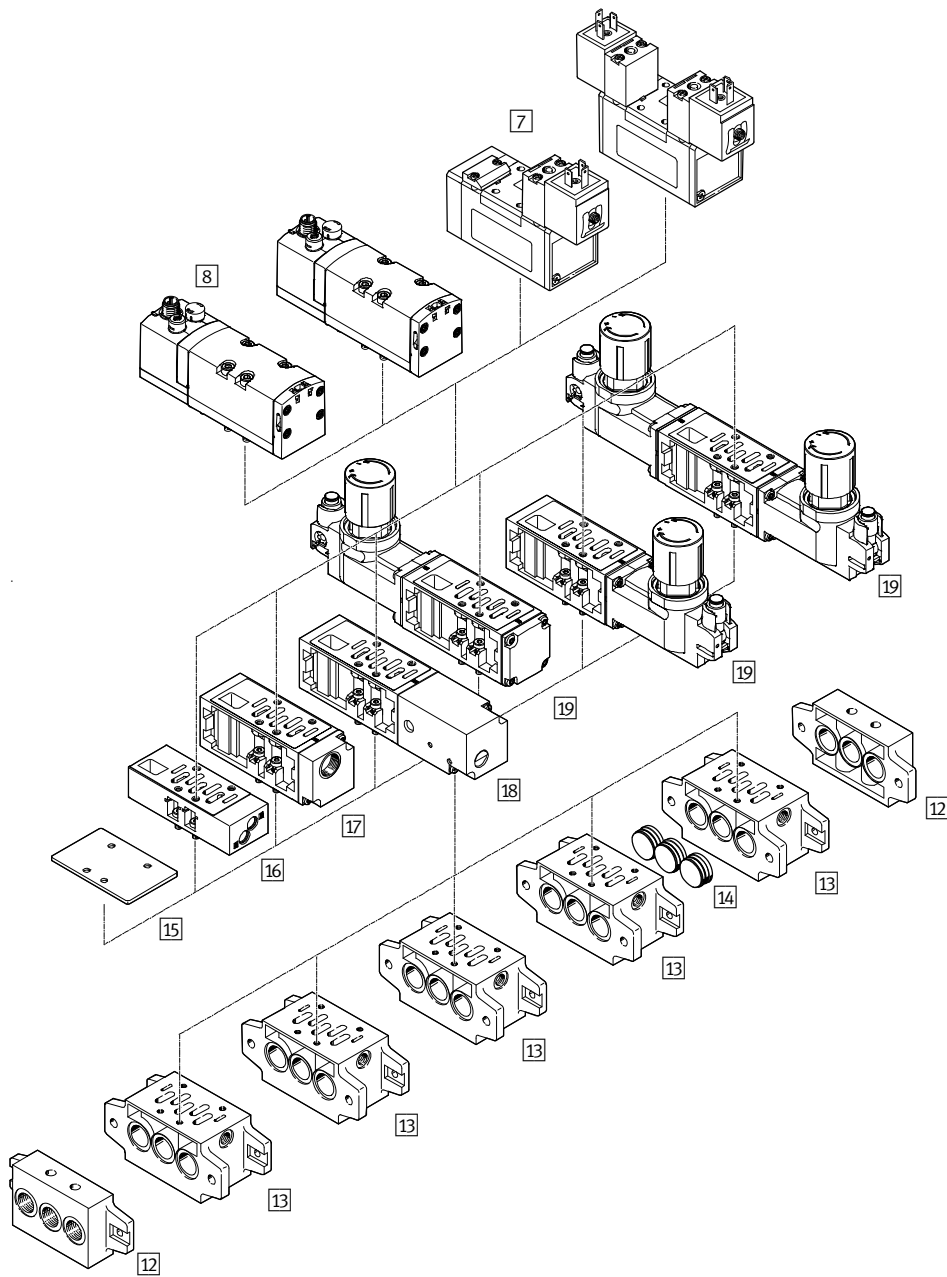
Solenoid valves, ISO 5599-1 ★

Accessories – Individual mounting



	→ Page/online
1 Angled plug socket MSSD, square design	1017
2 Plug socket SIE for plug M12x1	1017
3 Connecting cable KMC for plug type A	1017
4 Connecting cable NEBU-M12 for plug M12x1	1017
5 Illuminating seal MC-LD for N1 solenoid coil	1017
6 Manual override AHB	1017
7 Solenoid valve MN1H	1003
8 Solenoid valve VSVA	1005
9 Individual sub-base NAS (pneumatic connections on the side), NAU (pneumatic connections underneath)	1017
10 Silencer U	1017
11 Push-in fitting QS	1018
– N1 solenoid coil	1019
– F solenoid coil	1019
– Inscription label IBS-9x17	1019

Accessories – Manifold assembly

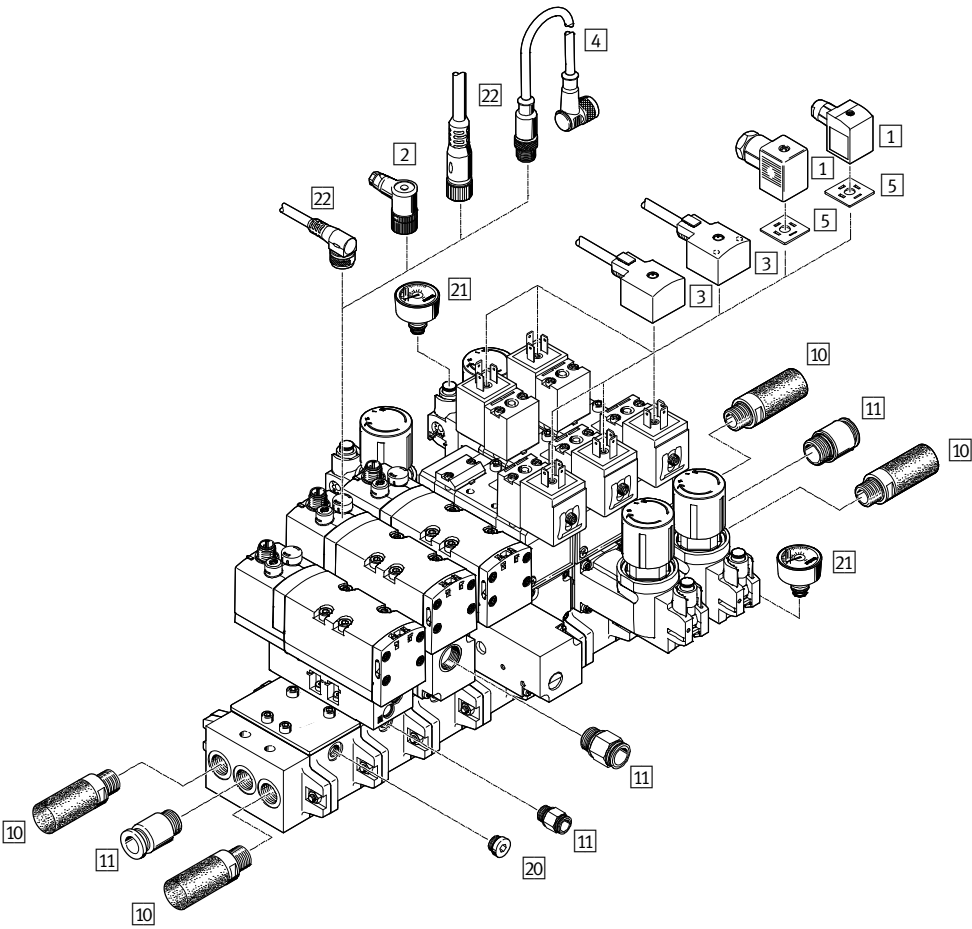


		→ Page/online
7	Solenoid valve MN1H	1003
8	Solenoid valve VSVA	1005
12	End plate kit NEV	1018
13	Manifold sub-base NAV	1018
14	Isolating disc NSC	1018
15	Cover plate NDV	1018
16	Throttle plate VABF-S1-1-F1B1	1018
17	Vertical pressure supply plate VABF-S1-1-P1A3	1018
18	Vertical pressure shut-off plate VABF-S1-1-L1D1	1018
19	Regulator plate VABF-S1-1-R	1019
–	N1 solenoid coil	1019
–	F solenoid coil	1019
–	Inscription label IBS-9x17	1019

Standards-based directional control valves >

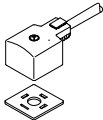
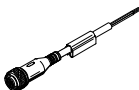
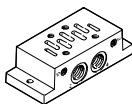
Solenoid valves, ISO 5599-1

Accessories



	→ Page/online
1 Angled plug socket MSSD, square design	1017
2 Plug socket SIE for plug M12x1	1017
3 Connecting cable KMC for plug type A	1017
4 Connecting cable NEBU-M12 for plug M12x1	1017
5 Illuminating seal MC-LD for N1 solenoid coil	1017
10 Silencer U	1017
11 Push-in fitting QS	1018
20 Blanking plug B	1019
21 Pressure gauge PAGN-26-10-P10	1019
– N1 solenoid coil	1019
– F solenoid coil	1019
– Inscription label IBS-9x17	1019

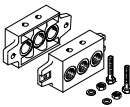
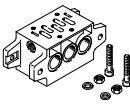
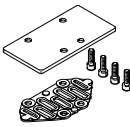
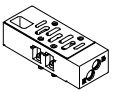
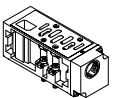
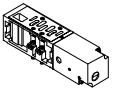
Accessories – Ordering data

Description				Part no.	Type
1 Angled plug socket					
	For plug type A	Cable fitting Pg9	Screw terminal	34583	MSSD-C
		Cable fitting M16	Screw terminal	539709	MSSD-C-M16
		—	Insulation displacement technology	192748	MSSD-C-S-M16
	For F solenoid coil	Cable fitting Pg9	Screw terminal	★ 34431	MSSD-F
2 Plug socket for plug M12x1					
	Angled socket, M12, 4-pin		Screw terminal	12956	SIE-WD-TR
3 Connecting cable for plug type A					
	24 V DC	With LED	2.5 m	30931	KMC-1-24DC-2,5-LED
			5 m	30933	KMC-1-24DC-5-LED
			10 m	193459	KMC-1-24DC-10-LED
	Up to 230 V	Without LED	2.5 m	30932	KMC-1-230AC-2,5
			5 m	30934	KMC-1-230AC-5
4 Connecting cable for plug M12x1					
	Open cable end, 4-wire	Straight socket, 5-pin	2.5 m	★ 550326	NEBU-M12G5-K-2.5-LE4
			5 m	★ 541328	NEBU-M12G5-K-5-LE4
		Angled plug socket, 5-pin	5 m	541329	NEBU-M12W5-K-5-LE4
5 Illuminating seal for N1 solenoid coil					
	Illuminating seal	For N1 solenoid coils	12 ... 24 V DC	19145	MC-LD-12-24DC
			230 V DC/V AC	19146	MC-LD-230AC
6 Manual override					
	Tool for manual override		Valves MN1H/MFH	157651	AHB-MD/MF/MV
9 Individual sub-base					
	For valve width 42 mm	Connections on the side	★	9484	NAS-1/4-1A-ISO
		Connections underneath	★	9485	NAU-1/4-1B-ISO
	For valve width 52 mm	Connections on the side		11310	NAS-3/8-2A-ISO
		Connections underneath		11416	NAU-3/8-2B-ISO
10 Silencer					
	Silencer for noise reduction at exhaust ports	For thread G1/4	★	6842	U-1/4-B
		For thread G3/8	★	6843	U-3/8-B
		For thread G1/2	★	6844	U-1/2-B

Standards-based directional control valves >

Solenoid valves, ISO 5599-1 ★

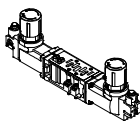
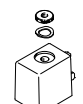
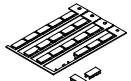
Accessories – Ordering data

Description				Part no.	Type
11 Push-in fitting				Data sheets → Page 1443	
	Connecting thread G1/8	Tubing O.D. Ø 8 mm	10 pieces	★	186098 QS-G1/8-8
	Connecting thread G1/4	Tubing O.D. Ø 8 mm	10 pieces	★	186099 QS-G1/4-8
	Connecting thread G3/8, plastic releasing ring	Tubing O.D. Ø 10 mm	10 pieces	★	186102 QS-G3/8-10
	Connecting thread G1/2	Tubing O.D. Ø 12 mm	1 piece	★	186104 QS-G1/2-12
12 End plate kit					
	Right and left end plate	For valve width 42 mm		★	10174 NEV-1DA/DB-ISO
		For valve width 52 mm			11306 NEV-2DA/DB-ISO
13 Manifold sub-base					
	One valve position	For valve width 42 mm	Connections underneath	★	10173 NAV-1/4-1C-ISO
			Connections on the side and underneath	★	152789 NAVW-1/4-1-ISO
		For valve width 52 mm	Connections underneath		11305 NAV-3/8-2C-ISO
14 Isolating disc					
	For pressure zone separation	For valve width 42 mm		★	11550 NSC-1/4-1-ISO
		For valve width 52 mm			11908 NSC-3/8-2-ISO
15 Cover plate					
	With seal and mounting screws	For valve width 42 mm		★	9489 NDV-1-ISO
		For valve width 52 mm			11308 NDV-2-ISO
16 Throttle plate					
	For exhaust air flow control in connections 3 and 5 of the valve	For valve width 52 mm			555788 VABF-S1-2-F1B1-C
17 Vertical pressure supply plate					
	For independently supplying working air to a valve	For valve width 52 mm			555785 VABF-S1-2-P1A3-G12
18 Vertical pressure shut-off plate					
	For shutting off a valve from the supply pressure	For valve width 52 mm			555790 VABF-S1-2-L1D1-C

08

Valves

Accessories – Ordering data

Description				Part no.	Type
19 Regulator plate, for valve width 52 mm					
	For port 1	P	0.5 ... 10 bar	555758	VABF-S1-2-R1C2-C-10
			0.5 ... 6 bar	555757	VABF-S1-2-R1C2-C-6
	For port 2	B	0.5 ... 10 bar	555760	VABF-S1-2-R2C2-C-10
			0.5 ... 6 bar	555759	VABF-S1-2-R2C2-C-6
	For port 4	A	0.5 ... 10 bar	555762	VABF-S1-2-R3C2-C-10
			0.5 ... 6 bar	555761	VABF-S1-2-R3C2-C-6
	For port 2 and 4	AB	0.5 ... 10 bar	555764	VABF-S1-2-R4C2-C-10
			0.5 ... 6 bar	555763	VABF-S1-2-R4C2-C-6
	For port 2 and 4, reversible	AB	0.5 ... 10 bar	555766	VABF-S1-2-R5C2-C-10
			0.5 ... 6 bar	555765	VABF-S1-2-R5C2-C-6
	For port 2, reversible	B	0.5 ... 10 bar	555768	VABF-S1-2-R6C2-C-10
			0.5 ... 6 bar	555767	VABF-S1-2-R6C2-C-6
	For port 4, reversible	A	0.5 ... 10 bar	555770	VABF-S1-2-R7C2-C-10
			0.5 ... 6 bar	555769	VABF-S1-2-R7C2-C-6
20 Blanking plug					
				Data sheets online: → b-1	
	For sealing connections	Connecting thread G1/4	10 pieces	★ 3569	B-1/4
		Connecting thread G3/8	10 pieces	★ 3570	B-3/8
21 Pressure gauge					
				Data sheets online: → pagn	
	With cartridge fitting connection for regulator plate		0 ... 10 bar	543488	PAGN-26-10-P10
N1 solenoid coil for valves MN1H, JMN1H					
	24 V DC			123060	MSN1G-24DC-OD
	12 V DC and 24 V AC, 50 ... 60 Hz			170152	MSN1W-24AC/12DC
	110 V AC, 50 ... 60 Hz			123061	MSN1W-110AC-OD
	230 V AC, 50 ... 60 Hz			123062	MSN1W-230AC-OD
F solenoid coil for valves MFH, JMFH					
	12 V DC			34410	MSFG-12DC-OD
	24 V DC and 42 V AC, 50 ... 60 Hz, plug pins with connection pattern to Festo standard for MSSD-F			4527	MSFG-24/42-50/60
				34411	MSFG-24/42-50/60-OD
	42 V DC			34413	MSFG-42DC-OD
	24 V AC			34415	MSFG-24AC-OD
	48 V AC, 50 ... 60 Hz			34418	MSFW-48AC-OD
	110 V AC, 50 ... 60 Hz and 120 V AC, 60 Hz			34420	MSFW-110AC-OD
	230 V AC, 50 ... 60 Hz and 240 V AC, 60 Hz			34422	MSFW-230AC-OD
	240 V AC, 50 ... 60 Hz			34424	MSFW-240AC-OD
Inscription label					
	Inscription label for valves		24 pieces in frame	161937	IBS-9x17

Standards-based directional control valves >



Safely control the exhaust of your cylinders

- + Fast, controllable non-return function
- + Prevents pneumatic drives from dropping down in the event of a loss of compressed air

Shut-off valves › Check valves and quick exhaust valves ›
Check, hand slide and shut-off valves

HGL ★
VBOH
HE
QH, QHS

Shut-off valves > Check valves and quick exhaust valves >

Check, hand slide and shut-off valves

HGL★, VBOH, HE, QH, QHS



Overview, configuration and ordering

→ www.festo.com/catalogue/hgl



Additional information, support and user documentation

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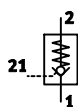
Quick ordering of basic designs

→ page 1023



- + Thread at both ends, push-in connector at both ends, thread/push-in connector

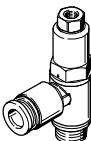
Data sheet



Operating conditions						
Pneumatic connection 2		M5	G1/8	G1/4	G3/8	G1/2
Operating/pilot medium		Compressed air to ISO 8573-1:2010 [7:4:4]				
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)				
Operating pressure for entire temperature range	[bar]	0.5 ... 10				
Pilot pressure	[bar]	2 ... 10			1 ... 10	
Ambient temperature	[°C]	−10 ... +60				

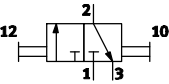
Materials		
Type	HGL-...-B with threaded connection at both ends	HGL-...-QS with push-in/threaded connection
Housing	Anodised wrought aluminium alloy	
Swivel connection	Die-cast zinc	
Releasing ring	–	POM
Non-return collar	NBR	
Seals	NBR	

Ordering data

	Pneumatic connection		Pilot air connection	Standard nominal flow rate q _N in flow direction at 6 bar → 5 bar [l/min]	Standard flow rate q _n in flow direction at 6 bar → 0 bar [l/min]		Part no.	Type
	2	1						
Threaded connection at both ends								
	M5	M5	M5	130	200	★	530029	HGL-M5-B
	G ¹ / ₈	G ¹ / ₈	M5	300	430	★	530030	HGL-1/8-B
		G ¹ / ₈	G ¹ / ₈	300	430		543253	HGL-1/8-1/8-B
	G ¹ / ₄	G ¹ / ₄	G ¹ / ₈	550	680	★	530031	HGL-1/4-B
	G ³ / ₈	G ³ / ₈	G ¹ / ₄	1100	1500	★	530032	HGL-3/8-B
	G ¹ / ₂	G ¹ / ₂	G ³ / ₈	1600	2100	★	530033	HGL-1/2-B
Push-in/threaded connection								
	M5	QS-4	QS-4	130	200	★	530038	HGL-M5-QS-4
	G ¹ / ₈	QS-4	M5	200	300	★	530039	HGL-1/8-QS-4
		QS-6	M5	270	400	★	530040	HGL-1/8-QS-6
	G ¹ / ₄	QS-8	G ¹ / ₈	390	640	★	530041	HGL-1/4-QS-8
		QS-10	G ¹ / ₈	400	670	★	530042	HGL-1/4-QS-10
	G ³ / ₈	QS-8	G ¹ / ₄	830	1200	★	530043	HGL-3/8-QS-8
		QS-10	G ¹ / ₄	890	1300	★	530044	HGL-3/8-QS-10
	G ¹ / ₂	QS-12	G ³ / ₈	1400	2100	★	530045	HGL-1/2-QS-12

Hand slide valves VBOH

Data sheet



Technical data	
Design	Sleeve valve
Valve function	3/2-way, bistable
Type of control	Direct

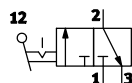
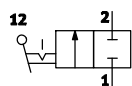
Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure [bar]	−0.95 ... +12
Ambient temperature [°C]	−10 ... +80

Materials	
Housing	Anodised wrought aluminium alloy
Threaded plug	Anodised wrought aluminium alloy
Grip ring	PBT
Seals	NBR

Ordering data

	Pneumatic connection		Valve function	Nominal width [mm]	Standard nominal flow rate qnN [l/min]	Part no.	Type
	1	2					
	M5	M5	3/2-way, bistable	3.6	236	1609969	VBOH-32-M5
	G1/8	G1/8	3/2-way, bistable	5.7	777	1558073	VBOH-32-G18
	G1/4	G1/4	3/2-way, bistable	8.4	1675	1302994	VBOH-32-G14
	G3/8	G3/8	3/2-way, bistable	9.9	2201	1482679	VBOH-32-G38
	G1/2	G1/2	3/2-way, bistable	12.1	3420	1587988	VBOH-32-G12
	G3/4	G3/4	3/2-way, bistable	19.3	7691	1629664	VBOH-32-G34

Data sheet

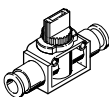
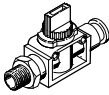


Technical data		
Valve function	2/2-way, bistable	3/2-way, bistable
Design	Piston spool	
Type of control	Direct	
Flow direction	Non-reversible	
Exhaust air function	–	Without flow control option

Operating conditions		
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]	
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)	
Operating pressure [bar]	–0.95 ... +10	
Ambient temperature [°C]	0 ... +60	

Materials		
Housing	PBT reinforced	

Ordering data

	Pneumatic connection			Valve function	Nominal size [mm]	Standard nominal flow rate q _{nN} [l/min]	Part no.	Type
	1	2	3					
Push-in connector at both ends								
	QS-6	QS-6	–	2/2-way, bistable	5	278	153467	HE-2-QS-6
			Not ducted	3/2-way, bistable	5	279	153475	HE-3-QS-6
	QS-8	QS-8	–	2/2-way, bistable	5	388	153468	HE-2-QS-8
			Not ducted	3/2-way, bistable	5	390	153476	HE-3-QS-8
	QS-10	QS-10	–	2/2-way, bistable	7	761	153469	HE-2-QS-10
			Not ducted	3/2-way, bistable	7	780	153477	HE-3-QS-10
	QS-12	QS-12	–	2/2-way, bistable	7	831	153470	HE-2-QS-12
			Not ducted	3/2-way, bistable	7	840	153478	HE-3-QS-12
Threaded/push-in connector								
	R1/8	QS-6	–	2/2-way, bistable	5	307	153471	HE-2-1/8-QS-6
			Not ducted	3/2-way, bistable	5	301	153479	HE-3-1/8-QS-6
	R1/4	QS-8	–	2/2-way, bistable	5	396	153472	HE-2-1/4-QS-8
			Not ducted	3/2-way, bistable	5	380	153480	HE-3-1/4-QS-8
	R3/8	QS-10	–	2/2-way, bistable	7	728	153473	HE-2-3/8-QS-10
			Not ducted	3/2-way, bistable	7	733	153481	HE-3-3/8-QS-10
	R1/2	QS-12	–	2/2-way, bistable	7	776	153474	HE-2-1/2-QS-12
			Not ducted	3/2-way, bistable	7	796	153482	HE-3-1/2-QS-12
Threaded connection at both ends								
	R1/8	R1/8	Not ducted	3/2-way, bistable	5	301	153296	HE-3-1/8-1/8
	R1/4	R1/4	Not ducted	3/2-way, bistable	7	380	153297	HE-3-1/4-1/4
	R3/8	R3/8	Not ducted	3/2-way, bistable	7	733	153298	HE-3-3/8-3/8

08

Valves

Ball valves QH/QHS

Product range overview

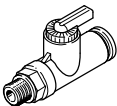
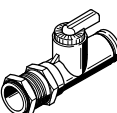
Type	Version	Pneumatic connection 1	Pneumatic connection 2	→ Page/ online
QH	Push-in connector at both ends	QS-4	QS-4	1026
		QS-6	QS-6	
	Threaded/push-in connector	R1/8	QS-4	
			QS-6	
QHS	Push-in connector at both ends, bulkhead fitting	QS-6	QS-6	
QH	Female thread at both ends, with hand lever	G1/4	G1/4	1027
		G3/8	G3/8	
		G1/2	G1/2	
		G3/4	G3/4	
		G1	G1	
		G1 1/2	G1 1/2	

Data sheet

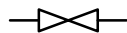


Technical data	
Design	Ball valve
Valve function	2/2-way, bistable
Actuation type	Manual
Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure [bar]	-1 ... +10
Ambient temperature [°C]	0 ... +60
Materials	
Housing	PBT

Ordering data

	Pneumatic connection		Valve function	Nominal width [mm]	Standard nominal flow rate qnN [l/min]	Part no.	Type
	1	2					
Push-in connector at both ends							
	QS-4	QS-4	2/2-way, bistable	2.5	148	153483	QH-QS-4
	QS-6	QS-6	2/2-way, bistable	4	533	153484	QH-QS-6
Threaded/push-in connector							
	R1/8	QS-4	2/2-way, bistable	2.5	235	153486	QH-QS-4-1/8
		QS-6	2/2-way, bistable	2.5	560	153487	QH-QS-6-1/8
Bulkhead fitting, push-in connector at both ends							
	QS-6	QS-6	2/2-way, bistable	4	528	153485	QHS-QS-6

Data sheet – With hand lever



Technical data	
Design	Ball valve
Valve function	2/2-way, bistable
Actuation type	Manual

Operating conditions	
Operating medium ¹⁾	Compressed air to ISO 8573-1:2010 [7:-:-]
	Water
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature	[°C] -20 ... +180

1) Other media on request.
Not permitted for toxic gases such as natural gas, mains gas, etc.

Materials	
Housing	Brass
Lever	Aluminium

Ordering data

	Pneumatic connection		Valve function	Nominal width [mm]	Standard nominal flow rate qnN [l/min]	Part no.	Type
	1	2					
Female thread at both ends							
	G1/4	G1/4	2/2-way, bistable	10	3400	9541	QH-1/4
	G3/8	G3/8	2/2-way, bistable	10	7500	9542	QH-3/8
	G1/2	G1/2	2/2-way, bistable	15	11,500	9543	QH-1/2
	G3/4	G3/4	2/2-way, bistable	20	21,000	9544	QH-3/4
	G1	G1	2/2-way, bistable	25	33,000	9545	QH-1
	G1 1/2	G1 1/2	2/2-way, bistable	40	84,000	6837	QH-1 1/2



Innovative control elements for your pneumatic drive solutions

- + Space-saving design with up to three valve functions integrated in a single housing
- + Flexible connection options
- + Material suitable for the application

Flow control valves > One-way flow control valves >

One-way flow control valves and silencers

GRLA★ / GRLZ★
VFOC
VFOF
GR, GRA
VFFK

Flow control valves > One-way flow control valves >

One-way flow control valves and silencers

GRL...★/VF.../GR



Overview, configuration and ordering

→ www.festo.com/catalogue/grla



Additional information, support and user documentation

→ www.festo.com/sp/grla



Quick ordering of basic designs

→ page 1034



- + GR...: flow control valves, flow control at one end
- + Standard, mini, in-line variants with different flow rates and minimal height
- + Polymer, metal or stainless steel design
- + Connections: thread at both ends, push-in connector at both ends, thread/push-in connector
- + VFOF: functional combination with one-way flow control valve and piloted check valve
- + VFFK: flow control/silencers can be screwed into the exhaust port

One-way flow control valves

Product range overview

	Valve function	Type code	Connection outlet direction	Pneumatic connection 1	Pneumatic connection 2	qnN ¹⁾ [l/min]	Adjusting element	→ Page/ online
Standard								
Metal	Exhaust air one-way flow control function	GRLA	Elbow outlet	QS-3, QS-4, QS-6, QS-8, QS-10, QS-12	M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	100 ... 1580	Slotted head screw	1033
						Knurled screw		
				M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	95 ... 4320	Slotted head screw	grla
				M5, G ¹ / ₈ , G ¹ / ₄	M5, G ¹ / ₈ , G ¹ / ₄	95 ... 610	Knurled screw	
	PK-3, PK-4, PK-6	M5, G ¹ / ₈ , G ¹ / ₄	83 ... 540	Slotted head screw	grla			
		GRLSA	Elbow outlet	QS-6, QS-8	G ¹ / ₈ , G ¹ / ₄	0 ... 450	Rotary knob with scale, internal hex	grlsa
	Supply air one-way flow control function	GRLZ	Elbow outlet	QS-3, QS-4, QS-6, QS-8	M5, G ¹ / ₈	100 ... 215	Slotted head screw	1033
				M5, G ¹ / ₈ , G ¹ / ₄	M5, G ¹ / ₈ , G ¹ / ₄	95 ... 610	Slotted head screw	grlz
						Knurled screw		
				PK-3, PK-4, PK-6	M5, G ¹ / ₈ , G ¹ / ₄	83 ... 540	Slotted head screw	grlz
	VFOC	Elbow outlet	QS-4, QS-6	Push-in sleeve ²⁾ QS-4, QS-6	0 ... 270	Slotted head screw	1035	
Nickel-plated metal	Exhaust air one-way flow control function	VFOH	Elbow outlet	QS-4, QS-6, QS-8, QS-10	G ¹ / ₈ , G ¹ / ₄	180 ... 530	External hex	vfoh
Polymer	Exhaust air one-way flow control function	GRLA	Elbow outlet	QS-6, QS-8	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	520 ... 650	Knurled screw	grla
Flat								
Polymer	Exhaust air one-way flow control function	VFOF	Elbow outlet	QS-6, QS-8	G ¹ / ₈ , G ¹ / ₄	250 ... 650	Internal hex	1036

1) Standard nominal flow rate in flow control direction at 6 bar → 5 bar.

2) Only suitable for push-in connector QS.

One-way flow control valves

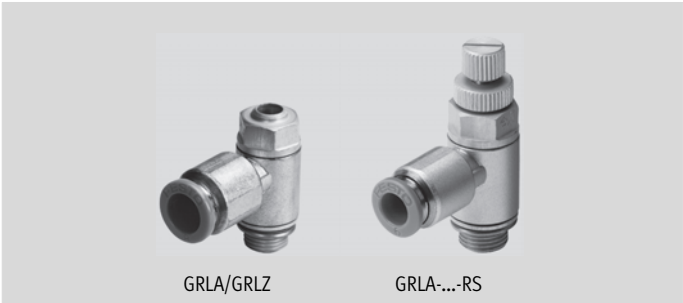
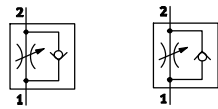
Product range overview

Type code	Valve function	Type code	Connection outlet direction	Pneumatic connection 1	Pneumatic connection 2	q _N ¹⁾ [l/min]	Adjusting element	→ Page/online
Mini								
Metal	Exhaust air one-way flow control function	GRLA	Elbow outlet	QS-3, QS-4	M3, M5	40 ... 41	Slotted head screw	grla
				M3	M3	0 ... 18	Slotted head screw	grla
	Supply air one-way flow control function	GRLZ	Elbow outlet	QS-3, QS-4	M3, M5	41 ... 48	Slotted head screw	grlz
				M3	M3	0 ... 18	Slotted head screw	grlz
In-line installation								
Polymer	One-way flow control function	GR	Straight	QS-3, QS-4, QS-6, QS-8	QS-3, QS-4, QS-6, QS-8	85 ... 265	Knurled screw	1037
Metal		GR/GRA		M3, M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	M3, M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	29.5 ... 3300	Knurled screw	1038
Corrosion-resistant								
Stainless steel	Exhaust air one-way flow control function	CRGRLA	Elbow outlet	M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	95 ... 2100	Slotted head screw	crgrla
Precision one-way flow control valve								
Metal	One-way flow control function	GRP	–	G ¹ / ₈	G ¹ / ₈	40.7 ... 75.8	Rotary knob with scale	grp
				PK-3, PK-4	PK-3, PK-4	3.8 ... 75.8	Rotary knob with scale	grp
M5 compact system								
Metal	One-way flow control function	GRF	–	PK-3	PK-3	45	Knurled screw	grf
Function combination								
Metal	Exhaust air one-way flow control function	GRXA	Elbow outlet	QS-4, QS-6, QS-8,	G ¹ / ₈ , G ¹ / ₄	130 ... 280	Slotted head screw	grxa
Polymer	Exhaust air one-way flow control function	VFOF	Elbow outlet	QS-6, QS-8,	G ¹ / ₈ , G ¹ / ₄	240 ... 590	Internal hex	1039

1) Standard nominal flow rate in flow control direction at 6 bar → 5 bar.

One-way flow control valves GRLA/GRLZ

Data sheet



Technical data – GRLA					
Pneumatic connection 2	M5	G1/8	G1/4	G3/8	G1/2
Pneumatic connection 1	QS-3, QS-4, QS-6	QS-3, QS-4, QS-6, QS-8	QS-6, QS-8, QS-10	QS-6, QS-8, QS-10	QS-12
Valve function	Exhaust air one-way flow control function				
Adjusting element	Slotted head screw				
	Knurled screw				

Technical data – GRLZ		
Pneumatic connection 2	M5	G1/8
Pneumatic connection 1	QS-3, QS-4, QS-6	QS-3, QS-4, QS-6, QS-8
Valve function	Supply air one-way flow control function	
Adjusting element	Slotted head screw	

Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure for entire temperature range [bar]	0.2 ... 10
Ambient temperature [°C]	−10 ... +60

Materials		
Type code	GRLA/GRLZ with slotted head screw	GRLA-...-RS with knurled screw
Threaded plug, hollow bolt	Wrought aluminium alloy (GRLA/GRLZ-M5: brass)	
Swivel connection	Chromated die-cast zinc	
Knurled head	–	Anodised wrought aluminium alloy
Releasing ring	POM	
Adjustment screw	Brass	
Seals	NBR	

Flow control valves > One-way flow control valves >

One-way flow control valves GRLA/GRLZ ★

★ Quick ordering ¹⁾

Quick ordering

			Pneumatic connection		Standard nominal flow rate q _n N		Standard flow rate q _n		Part no.	Type code
					at 6 bar → 5 bar		at 6 bar → 0 bar			
					In direction of flow control	In non-return direction	In direction of flow control	In non-return direction		
	2	1	[l/min]	[l/min]	[l/min]	[l/min]				

Exhaust air one-way flow control function

GRLA with slotted head screw

	M5	QS-3	100	60 ... 100	145	150 ... 170	193137	GRLA-M5-QS-3-D
		QS-4	110	65 ... 110	165	140 ... 160	193138	GRLA-M5-QS-4-D
		QS-6	115	70 ... 110	185	145 ... 170	193139	GRLA-M5-QS-6-D
	G1/8	QS-3	130	100 ... 130	180	200 ... 220	193142	GRLA-1/8-QS-3-D
		QS-4	160	120 ... 190	250	270 ... 300	193143	GRLA-1/8-QS-4-D
		QS-6	185	160 ... 240	370	330 ... 390	193144	GRLA-1/8-QS-6-D
			400	290 ... 420	600	570 ... 680	537075	GRLA-1/8-QS-6-MF-D
		QS-8	215	175 ... 250	400	330 ... 410	193145	GRLA-1/8-QS-8-D
			475	325 ... 500	720	610 ... 760	537076	GRLA-1/8-QS-8-MF-D
	G1/4	QS-6	400	290 ... 420	600	570 ... 680	193146	GRLA-1/4-QS-6-D
		QS-8	475	325 ... 500	720	610 ... 760	193147	GRLA-1/4-QS-8-D
		QS-10	480	345 ... 500	760	630 ... 790	193148	GRLA-1/4-QS-10-D
	G3/8	QS-6	495	320 ... 495	740	840 ... 890	193149	GRLA-3/8-QS-6-D
		QS-8	820	450 ... 850	1300	1080 ... 1420	193150	GRLA-3/8-QS-8-D
		QS-10	900	540 ... 975	1400	1160 ... 1620	193151	GRLA-3/8-QS-10-D
	G1/2	QS-12	1580	925 ... 1605	2220	1910 ... 2500	193152	GRLA-1/2-QS-12-D

GRLA with knurled screw

	M5	QS-3	100	60 ... 100	145	150 ... 170	197576	GRLA-M5-QS-3-RS-D
		QS-4	110	65 ... 110	165	140 ... 160	197577	GRLA-M5-QS-4-RS-D
		QS-6	115	70 ... 110	185	145 ... 170	197578	GRLA-M5-QS-6-RS-D
	G1/8	QS-3	130	100 ... 130	180	200 ... 220	197579	GRLA-1/8-QS-3-RS-D
		QS-4	160	120 ... 190	250	270 ... 300	197580	GRLA-1/8-QS-4-RS-D
		QS-6	185	160 ... 240	370	330 ... 390	197581	GRLA-1/8-QS-6-RS-D
		QS-8	215	175 ... 250	400	330 ... 410	534337	GRLA-1/8-QS-8-RS-D
	G1/4	QS-6	400	290 ... 420	600	570 ... 680	534338	GRLA-1/4-QS-6-RS-D
		QS-8	475	325 ... 500	720	610 ... 760	534339	GRLA-1/4-QS-8-RS-D
		QS-10	480	345 ... 500	760	630 ... 790	534340	GRLA-1/4-QS-10-RS-D
	G3/8	QS-6	495	320 ... 495	740	840 ... 890	534341	GRLA-3/8-QS-6-RS-D
		QS-8	820	450 ... 850	1300	1080 ... 1420	534342	GRLA-3/8-QS-8-RS-D
		QS-10	900	540 ... 975	1400	1160 ... 1620	534343	GRLA-3/8-QS-10-RS-D
	G1/2	QS-12	1580	925 ... 1605	2220	1910 ... 2500	534344	GRLA-1/2-QS-12-RS-D

Supply air one-way flow control function

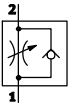
GRLZ with slotted head screw

	M5	QS-3	100	60 ... 100	135	130 ... 160	193153	GRLZ-M5-QS-3-D
		QS-4	110	65 ... 110	160	150 ... 180	193154	GRLZ-M5-QS-4-D
		QS-6	115	70 ... 110	170	160 ... 200	193155	GRLZ-M5-QS-6-D
	G1/8	QS-3	130	100 ... 130	200	180 ... 200	193156	GRLZ-1/8-QS-3-D
		QS-4	160	120 ... 190	300	260 ... 290	193157	GRLZ-1/8-QS-4-D
		QS-6	185	160 ... 240	340	390 ... 460	193158	GRLZ-1/8-QS-6-D
		QS-8	215	175 ... 250	370	390 ... 470	193159	GRLZ-1/8-QS-8-D

1) All products in this table are easy to select and quick to order.

One-way flow control valves VFOC

Data sheet



Technical data		
Pneumatic connection 2	Push-in sleeve QS-4 ¹⁾	Push-in sleeve QS-6 ¹⁾
Pneumatic connection 1	QS-4	QS-6
Valve function	Supply air one-way flow control function	
Adjusting element	Slotted head screw	

1) Only suitable for push-in connector QS.

Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure [bar]	0.2 ... 10
Ambient temperature [°C]	−10 ... +60

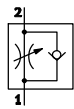
Materials	
Hollow bolt	Black anodised wrought aluminium alloy
Swivel connection	Die-cast zinc
Releasing ring	POM
Adjustment screw	High-alloy stainless steel
Seals	NBR

Ordering data

	Pneumatic connection		Standard nominal flow rate qnN at 6 bar → 5 bar		Standard flow rate qn at 6 bar → 0 bar		Part no.	Type code
			In direction of flow control	In non-return direction	In direction of flow control	In non-return direction		
	2	1	[l/min]	[l/min]	[l/min]	[l/min]		
	Push-in sleeve QS-4	QS-4	0 ... 100	60 ... 100	0 ... 170	130 ... 160	559723	VFOC-S-S4-Q4
	Push-in sleeve QS-6	QS-6	0 ... 270	170 ... 260	0 ... 430	330 ... 400	559724	VFOC-S-S6-Q6

One-way flow control valves VFOF

Data sheet



Technical data		
Pneumatic connection 2	G1/8	G1/4
Pneumatic connection 1	QS-6	QS-8
Valve function	Exhaust air one-way flow control function	
Adjusting element	Internal hex	

Operating conditions		
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)	
Operating pressure [bar]	0.2 ... 10	
Ambient temperature [°C]	-10 ... +60	

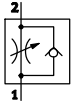
Materials	
Housing	PBT
Hollow bolt	Wrought aluminium alloy
Sleeve	Wrought aluminium alloy
Releasing ring	POM
Adjustment screw	Brass
Seals	NBR

Ordering data

	Pneumatic connection		Standard nominal flow rate qnN at 6 bar → 5 bar		Standard flow rate qn at 6 bar → 0 bar		Part no.	Type code
			In direction of flow control	In non-return direction	In direction of flow control	In non-return direction		
	2	1	[l/min]	[l/min]	[l/min]	[l/min]		
	G1/8	QS-6	250	150 ... 260	420	460 ... 540	1526931	VFOF-LE-H-G18-Q6
	G1/4	QS-8	650	300 ... 650	1100	840 ... 1100	1505391	VFOF-LE-H-G14-Q8

One-way flow control valves GR, in-line installation

Data sheet – Push-in connector



Technical data				
Pneumatic connection 2	QS-3	QS-4	QS-6	QS-8
Pneumatic connection 1	QS-3	QS-4	QS-6	QS-8
Valve function	One-way flow control function			
Adjusting element	Knurled screw			

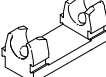
Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure [bar]	0.2 ... 10
Ambient temperature [°C]	–10 ... +60

Materials	
Housing	PA reinforced
Releasing ring	POM
Adjustment screw	High-alloy steel
Seals	NBR

Ordering data

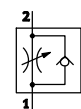
	Pneumatic connection		Standard nominal flow rate q _N at 6 bar → 5 bar		Part no.	Type code
	2	1	In direction of flow control	In non-return direction		
			[l/min]	[l/min]		
	QS-3	QS-3	85	120	193965	GR-QS-3
	QS-4	QS-4	110	165	193967	GR-QS-4
	QS-6	QS-6	245	430	193969	GR-QS-6
	QS-8	QS-8	265	500	193970	GR-QS-8

Accessories – Ordering data

	For type	Description	Part no.	Type code
Retainer GR-H				
	GR-QS-3, GR-QS-4	For mounting on a flat surface via M3 screws. The one-way flow control valve is snapped into the retainer. Linking of multiple retainers via dovetail slot.	195495	GR-H-QS-3-4
	GR-QS-6, GR-QS-8		195496	GR-H-QS-6-8
Hex nut GRM for front panel mounting				
	GR-QS-3, GR-QS-4	M10x1 thread	6444	GRM-M5
	GR-QS-6, GR-QS-8	M12x1 thread	2107	GRM-1/8
Cover cap GRK				
	GR-QS-3, GR-QS-4	M10x1 thread	6436	GRK-M5
	GR-QS-6, GR-QS-8	M12x1 thread	2105	GRK-1/8

One-way flow control valves GR/GRA, in-line installation

Data sheet – Female thread



Technical data							
Pneumatic connection 2	M3	M5	G1/8	G1/4	G3/8	G1/2	G3/4
Pneumatic connection 1	M3	M5	G1/8	G1/4	G3/8	G1/2	G3/4
Valve function	One-way flow control function						
Adjusting element	Knurled screw						

Operating conditions							
Pneumatic connection 2	M3	M5	G1/8	G1/4	G3/8	G1/2	G3/4
Operating medium	Compressed air to ISO 8573-1: 2010 [6:4:4]	Compressed air to ISO 8573-1:2010 [7:4:4]				Compressed air to ISO 8573-1:2010 [7:-:-]	
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)						
Operating pressure [bar]	0.3 ... 8	0.5 ... 10		0.1 ... 10			0.3 ... 15
Ambient temperature [°C]	-10 ... +60	-20 ... +60		-20 ... +75			-10 ... +60

Materials							
Pneumatic connection 2	M3	M5	G1/8	G1/4	G3/8	G1/2	G3/4
Housing	Wrought aluminium alloy			Die-cast zinc			Wrought aluminium alloy
Adjustment screw	Brass	High-alloy steel		Brass			
Seals	NBR						

Ordering data

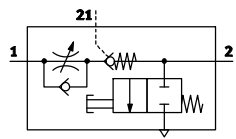
	Pneumatic connection		Standard nominal flow rate qnN at 6 bar → 5 bar		Part no.	Type code
			In direction of flow control	In non-return direction		
	2	1	[l/min]	[l/min]		
	M3	M3	29.5	26 ... 27.5	15899	GR-M3
	M5	M5	115	130 ... 137	151213	GR-M5-B
	G1/8	G1/8	210	180 ... 275	151215	GR-1/8-B
	G1/4	G1/4	420	780	6509	GRA-1/4-B
	G3/8	G3/8	1010	1150	6308	GR-3/8-B
	G1/2	G1/2	1620	2760	3720	GR-1/2
	G3/4	G3/4	3300	4800	2103	GR-3/4

Accessories – Ordering data

	For type	Description	Part no.	Type code
Hex nut GRM for front panel mounting				
	GR-M5-B	M10x1 thread	6444	GRM-M5
	GR-1/8-B	M12x1 thread	2107	GRM-1/8
	GRA-1/4-B, GR-3/8-B	M20x1.5 thread	204596	GRM-3/8
Cover cap GRK				
	GR-M5-B	M10x1 thread	6436	GRK-M5
	GR-1/8-B	M12x1 thread	2105	GRK-1/8
	GRA-1/4-B, GR-3/8-B	M20x1.5 thread	6309	GRK-3/8-B

One-way flow control valves VFOF, function combination

Data sheet



Technical data		
Pneumatic connection 2	G1/8	G1/4
Pneumatic connection 1	QS-6	QS-8
Pilot air port 21	QS-6	QS-8
Valve function	Exhaust air one-way flow control function	
Adjusting element	Internal hex	
Actuation type	Manual	
Actuation type, piloted non-return function	Pneumatic	
Manual exhaust function	Non-detenting	

Operating conditions	
Operating/pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure for entire temperature range [bar]	0.2 ... 10
Pilot pressure [bar]	2 ... 10
Ambient temperature [°C]	−10 ... +60

Materials	
Housing	PBT
End cap	PBT
Hollow bolt	Wrought aluminium alloy
Sleeve	Wrought aluminium alloy
Releasing ring	POM
Adjustment screw	Brass
Cover	ES-BE
Seals	NBR

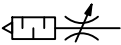
Ordering data

	Pneumatic connection		Pilot air connection	Standard nominal flow rate qnN at 6 bar → 5 bar		Standard flow rate qn at 6 bar → 0 bar		Part no.	Type code
				In direction of flow control	In non-return direction	In direction of flow control	In non-return direction		
	2	1	21	[l/min]	[l/min]	[l/min]	[l/min]		
	G1/8	QS-6	QS-6	240	150 ... 230 120 ... 220 ¹⁾	420	400 ... 460 400 ... 460 ¹⁾	8001459	VFOF-LE-BAH-G18-Q6
	G1/4	QS-8	QS-8	590	315 ... 540 310 ... 540 ¹⁾	940	830 ... 1000 840 ... 1000 ¹⁾	1927030	VFOF-LE-BAH-G14-Q8

1) Unactuated.

Flow control/silencers VFFK

Data sheet



Technical data				
Pneumatic connection 1	M5	M7	R1/8	R1/4
Valve function	Flow control/silencer function			
Adjusting element	Knurled screw			
Type of seal on threaded plug	Sealing ring		Coating	

Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium	Operation with lubricated medium possible
Operating pressure [bar]	0 ... 10
Ambient temperature [°C]	0 ... +60

Materials				
Pneumatic connection 1	M5	M7	R1/8	R1/4
Silencer insert	PE			
Threaded plug	Nickel-plated brass			
Adjustment screw	Nickel-plated brass			
Knurled nut	Aluminium			
Seals	NBR		-	

Ordering data

	Pneumatic connection 1	Standard flow rate qn at 6 bar → 0 bar [l/min]	Part no.	Type code
	M5	0 ... 80	133140	VFFK-C-K-M5-P
	M7	0 ... 100	133141	VFFK-C-K-M7-P
	R1/8	0 ... 270	133142	VFFK-C-K-R18-P
	R1/4	0 ... 420	133143	VFFK-C-K-R14-P



High-precision control

- + Long service life thanks to piezo technology
- + Large pressure regulation range: 0.01 ... 10 bar
- + Optimal performance due to short response times
- + Environmentally friendly due to soundless operation

Proportional valves ›

Proportional pressure regulators

VEAA

Proportional valves >

Proportional pressure regulators

VEAA



Overview, configuration and ordering

→ www.festo.com/catalogue/veaa



Additional information, support and user documentation

→ www.festo.com/sp/veaa



- + High control precision
- + High repetition accuracy
- + Completely soundless – ideal for laboratory use
- + Large pressure regulation range: 0.01 ... 10 bar

Proportional pressure regulators VEAA

Product range overview

Type code	Valve function	Pneumatic connection	Pressure regulation range [bar]	Setpoint input		→ Page/ online
				Voltage type 0 ... 10 V	Current type 4 ... 20 mA	
Pressure regulator	In-line valve					
	3-way valve, normally closed	QS-4	0.01 ... 2	■	■	1044
			0.03 ... 6			
			0.05 ... 10			
	Sub-base valve					
	3-way valve, normally closed	Flange	0.01 ... 2	■	■	1044
			0.03 ... 6			
			0.05 ... 10			

Proportional valves >

Proportional pressure regulators VEAA

Data sheet – VEAA

Flow rate
7 ... 13 l/min

Voltage
24 V DC

Pressure regulation ranges
0.01 ... 2 bar
0.03 ... 6 bar
0.05 ... 10 bar



Technical data		Download CAD data → www.festo.com
Valve function	3-way valve	
Type of mounting	Via through-hole, via accessories	

Electrical data		
Operating voltage range	[V DC]	19 ... 29
Max. electrical power consumption	[W]	1
Degree of protection to EN 60529		IP65

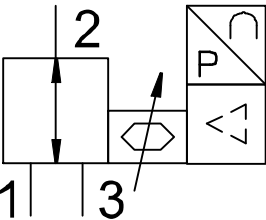
Operating conditions		
Input pressure 1 ¹⁾	[bar]	0 ... 11
FS (full scale) hysteresis	[%]	0.25
FS (full scale) linearity error	[%]	± 0.5
FS (full scale) repetition accuracy	[%]	± 0.4
Ambient temperature	[°C]	0 ... +50
Temperature of medium	[°C]	+5 ... +50

1) Input pressure 1 should always be 1 bar greater than the maximum regulated output pressure.

Materials	
Housing	PA reinforced
Seals	NBR

Pin allocation, electrical connection		
	Pin	Function
	1	+24 V DC supply voltage
	2	+ Setpoint value
	3	GND
	4	+ Actual value

Function



An integrated pressure sensor records the pressure at the working port and compares this value with the setpoint value.

The pressure is automatically readjusted in the event of deviations.

Proportional pressure regulators VEAA

Order code – VEAA

VEAA

–

–

3

–

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1

R1

Type	
VEAA	Proportional pressure regulator
Valve type	
L	In-line valve
B	Sub-base valve
Valve function	
3	3-way valve, normally closed
Pressure range	
D2	0 ... 2 bar
D9	0 ... 6 bar
D11	0 ... 10 bar
Pneumatic connection	
Q4	Push-in connector 4 mm
F	Flange/sub-base
Setpoint input	
V1	Voltage variant 0 ... 10 V
A4	Current variant 4 ... 20 mA
Operating voltage	
1	24 V DC
Electrical connection	
R1	Plug connector M8, 4-pin

1

 Only for valve type: in-line valve L

2

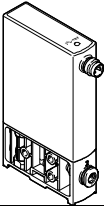
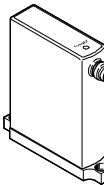
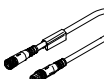
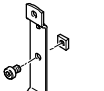
 Only for valve type: sub-base valve B

Order example:
VEAA-L-3-D11-Q4-V1-1R1:
Proportional pressure regulator - in-line valve - 3-way valve, normally closed - pressure range 0 ... 10 bar - pneumatic connection: push-in connector 4 mm - setpoint input 0 ... 10 V - operating voltage 24 V DC - electrical connection: plug M8, 4-pin

Proportional valves >

Proportional pressure regulators VEAA

Accessories – Ordering data

	Description	Pressure regulation range [bar]	Part no.	Type code
In-line valve				
	Voltage type, 0 ... 10 V	0.05 ... 10	8046905	VEAA-L-3-D11-Q4-V1-1R1
		0.01 ... 2	8046901	VEAA-L-3-D2-Q4-V1-1R1
		0.03 ... 6	8046903	VEAA-L-3-D9-Q4-V1-1R1
	Current type, 4 ... 20 mA	0.05 ... 10	8046906	VEAA-L-3-D11-Q4-A4-1R1
		0.01 ... 2	8046902	VEAA-L-3-D2-Q4-A4-1R1
		0.03 ... 6	8046904	VEAA-L-3-D9-Q4-A4-1R1
Sub-base valve				
	Voltage type, 0 ... 10 V	0.05 ... 10	8046896	VEAA-B-3-D11-F-V1-1R1
		0.01 ... 2	8046892	VEAA-B-3-D2-F-V1-1R1
		0.03 ... 6	8046894	VEAA-B-3-D9-F-V1-1R1
	Current type, 4 ... 20 mA	0.05 ... 10	8046897	VEAA-B-3-D11-F-A4-1R1
		0.01 ... 2	8046893	VEAA-B-3-D2-F-A4-1R1
		0.03 ... 6	8046895	VEAA-B-3-D9-F-A4-1R1
Connecting cable			Data sheets → Page 1544	
	Straight socket, M8x1, 4-pin Open end, 4-wire	Cable length 2.5 m	541342	NEBU-M8G4-K-2.5-LE4
		Cable length 5 m	541343	NEBU-M8G4-K-5-LE4
	Angled socket, M8x1, 4-pin Open end, 4-wire	Cable length 2.5 m	541344	NEBU-M8W4-K-2.5-LE4
		Cable length 5 m	541345	NEBU-M8W4-K-5-LE4
	Straight socket, M8x1, 4-pin Straight plug connector, M8x1, 4-pin	Cable length 2.5 m	554035	NEBU-M8G4-K-2.5-M8G4
Mounting plate				
	For in-line valve		4054655	VAME-P6-Y

08

Valves



High-precision control

- + Long service life thanks to piezo technology
- + Large pressure regulation range: –1 ... 6 bar
- + Optimal performance due to short response times
- + Environmentally friendly due to soundless operation

Proportional valves ›

Proportional pressure regulators

VEAB

Proportional valves >

Proportional pressure regulators

VEAB



Overview, configuration and ordering

→ www.festo.com/catalogue/



Additional information, support and user documentation

→ www.festo.com/sp/



- + High control precision
- + High repetition accuracy
- + Completely soundless – ideal for laboratory use
- + Large pressure regulation range: –1 ... 6 bar

Proportional pressure regulators VEAB

Product range overview

Type code	Valve function	Pneumatic connection	Pressure regulation range [bar]	Setpoint input		→ Page/online
				Voltage type 0 ... 10 V	Current type 4 ... 20 mA	
Pressure regulator	In-line valve					
	3-way valve	QS-4	-1 ... -0.005	■	■	1050
			0.001 ... 0.2			
			0.005 ... 1			
			0.01 ... 2			
			0.03 ... 6			
	Sub-base valve					
	3-way valve	Flange	-1 ... -0.005	■	■	1050
			0.001 ... 0.2			
			0.005 ... 1			
			0.01 ... 2			
			0.03 ... 6			

Proportional valves >

Proportional pressure regulators VEAB

Data sheet – VEAB

Flow rate	Pressure regulation ranges
5 ... 20 l/min	–1 ... –0.005 bar
	0.001 ... 0.2 bar
Voltage	0.005 ... 1 bar
24 V DC	0.01 ... 2 bar
	0.03 ... 6 bar



Technical data	
Valve function	3-way valve
Type of mounting	Via through-hole, via accessories

Electrical data		
Operating voltage range	[V DC]	19 ... 29
Max. electrical power consumption	[W]	1
Degree of protection to EN 60529		IP65

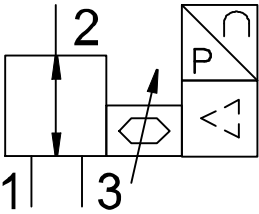
Operating conditions						
Pressure regulation range		–1 ... –0.005	0.001 ... 0.2	0.005 ... 1	0.01 ... 2	0.03 ... 6
Input pressure connection 1 ¹⁾	[bar]	–	0 ... 1	0... 3	0 ... 4	0 ... 6.5
Input pressure connection 3	[bar]	–1	–	–	–	–
FS (full scale) hysteresis	[%]	0.25	0.5	0.25		
FS (full scale) linearity error	[%]	± 0.5	± 0.8	± 0.5		
FS (full scale) repetition accuracy	[%]	± 0.4				
Ambient temperature	[°C]	0 ... +50				
Temperature of medium	[°C]	+5 ... +50				

1) Input pressure 1 should always be 1 bar greater than the maximum regulated output pressure.

Materials	
Housing	PA reinforced
Seals	NBR

Pin allocation, electrical connection		
	Pin	Function
	1	+24 V DC supply voltage
	2	+ Setpoint value
	3	GND
	4	+ Actual value

Function



An integrated pressure sensor records the pressure at the working port and compares this value with the setpoint value.

The pressure is automatically readjusted in the event of deviations.

Proportional pressure regulators VEAB

Order code – VEAB

VEAB

–

–

26

–

–

–

–

1

R1

Type

VEAB

Proportional pressure regulator

Valve type

L

In-line valve

B

Sub-base valve

Valve function

26

3-way valve, normally closed

Pressure range

D14

–1 ... –0.005 bar

D12

0.001 ... 0.2 bar

D7

0.005 ... 1 bar

D2

0.01 ... 2 bar

D9

0.03 ... 6 bar

Pneumatic connection

Q4

Push-in connector 4 mm

1

F

Flange/sub-base

2

Setpoint input

V1

Voltage variant 0 ... 10 V

A4

Current variant 4 ... 20 mA

Operating voltage

1

24 V DC

Electrical connection

R1

Plug connector M8, 4-pin

1 Only for valve type: in-line valve L

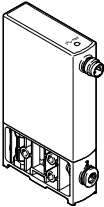
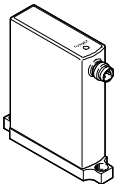
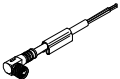
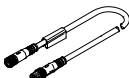
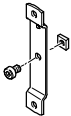
2 Only for valve type: sub-base valve B

Order example:
VEAB-L-26-D9-Q4-V1-1R1:
Proportional pressure regulator - in-line valve - 3-way valve, normally closed - pressure range 0.03 ... 6 bar - pneumatic connection: push-in connector 4 mm - setpoint input 0 ... 10 V - operating voltage 24 V DC - electrical connection: plug M8, 4-pin

Proportional valves >

Proportional pressure regulators VEAB

Accessories – Ordering data

	Description	Pressure regulation range [bar]	Part no.	Type code
In-line valve				
	Voltage type, 0 ... 10 V	–1 ... –0.005	8046307	VEAB-L-26-D14-Q4-V1-1R1
		0.001 ... 2	8046301	VEAB-L-26-D12-Q4-V1-1R1
		0.005 ... 1	8046303	VEAB-L-26-D7-Q4-V1-1R1
		0.01 ... 2	8046305	VEAB-L-26-D2-Q4-V1-1R1
		0.03 ... 6	8046299	VEAB-L-26-D9-Q4-V1-1R1
	Current type, 4 ... 20 mA	0.05 ... 10	8046308	VEAB-L-26-D14-Q4-A4-1R1
		0.01 ... 2	8046302	VEAB-L-26-D12-Q4-A4-1R1
		0.005 ... 1	8046304	VEAB-L-26-D7-Q4-A4-1R1
		0.01 ... 2	8046306	VEAB-L-26-D2-Q4-A4-1R1
		0.03 ... 6	8046300	VEAB-L-26-D9-Q4-A4-1R1
Sub-base valve				
	Voltage type, 0 ... 10 V	–1 ... –0.005	8046271	VEAB-B-26-D14-F-V1-1R1
		0.001 ... 2	8046265	VEAB-B-26-D12-F-V1-1R1
		0.005 ... 1	8046265	VEAB-B-26-D7-F-V1-1R1
		0.01 ... 2	8046269	VEAB-B-26-D2-F-V1-1R1
		0.03 ... 6	8046263	VEAB-B-26-D9-F-V1-1R1
	Current type, 4 ... 20 mA	0.05 ... 10	8046272	VEAB-B-26-D14-F-A4-1R1
		0.001 ... 2	8046266	VEAB-B-26-D12-F-A4-1R1
		0.005 ... 1	8046268	VEAB-B-26-D7-F-A4-1R1
		0.01 ... 2	8046270	VEAB-B-26-D2-F-A4-1R1
		0.03 ... 6	8046264	VEAB-B-26-D9-F-A4-1R1
	Description		Part No.	Type code
Connecting cable				
	Straight socket, M8x1, 4-pin Open end, 4-wire	Cable length 2.5 m	541342	NEBU-M8G4-K-2.5-LE4
		Cable length 5 m	541343	NEBU-M8G4-K-5-LE4
	Angled socket, M8x1, 4-pin Open end, 4-wire	Cable length 2.5 m	541344	NEBU-M8W4-K-2.5-LE4
		Cable length 5 m	541345	NEBU-M8W4-K-5-LE4
	Straight socket, M8x1, 4-pin Straight plug, M8x1, 4-pin	Cable length 2.5 m	554035	NEBU-M8G4-K-2.5-M8G4
Mounting plate				
	For in-line valve		4054656	VAME-P7-Y



Reduced complexity

- + Default controller presets reduce commissioning times
- + Direct mounting on a valve terminal means less wiring
- + Cascade control for precise control behaviour

Proportional valves >

Proportional pressure regulators

VP30-10

Proportional valves >

Proportional pressure regulators

VPPM



Overview, configuration and ordering

→ www.festo.com/catalogue/vppm



Additional information, support and user documentation

→ www.festo.com/sp/vppm



- + A modular function system as the basis for many variants:
from basic performance to high-tech device
- + Also available in a terminal version on the valve terminal MPA:
lower costs thanks to function integration and multiplexing
- + Three default controller presets for fast commissioning
- + Multi-sensor control and cascade control for stable control
and maximum precision

Proportional pressure regulators VPPM

Product range overview

Type code	Pressure regulation range	Operator unit	Pneumatic connection	Nominal width Pressurisation/ exhausting [mm]	Setpoint input			➔ Page/ online
					Voltage type 0 ... 10 V	Current type 4 ... 20 mA	Digital	
Proportional pressure regulator with analogue interface								
VPPM	Q02 ... 2 bar Q06 ... 6 bar Q1 ... 10 bar	Operator unit with LED	G1/8	6/4.5	■	■	–	1056
			Sub-base	6/4.5; 8/7	■	■	–	
			G1/4	8/7	■	■	–	
			G1/2	12/12	■	■	–	
		Operator unit with LCD, pressure unit variable	G1/8	6/4.5	■	■	–	1056
			Sub-base	6/4.5	■	■	–	
			G1/4	8/7	■	■	–	
			G1/2	12/12	■	■	–	
Proportional pressure regulator with IO-Link® interface								
VPPM	Q02 ... 2 bar Q06 ... 6 bar Q1 ... 10 bar	Operator unit with LED with IO-Link®	G1/8	6/4.5	–	–	■	1058
			Sub-base	6/4.5; 8/7	–	–	■	
			G1/4	8/7	–	–	■	
			G1/2	12/12	–	–	■	
Flanged valve for valve terminal MPA-S								
VPPM	Q02 ... 2 bar Q06 ... 6 bar Q1 ... 10 bar	Operator unit with LED	Sub-base MPA	6/4.5, 8/7	–	–	■	mpas

Product options

- ...L

Alternative lower pressure regulation range
- ...H

Alternative upper pressure regulation range

Proportional valves >

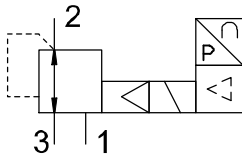
Proportional pressure regulators VPPM

Data sheet – VPPM with analogue interface

Flow rate
380 ... 7000 l/min

Voltage
21.6... 26.4 V DC

Pressure regulation range
0.02 ... 10 bar



Technical data		Download CAD data  www.festo.com
Design	Piloted diaphragm regulator	
Type of mounting	Via through-hole, via accessories	

Electrical data		VPPM-6	VPPM-8	VPPM-12
Type code				
Operating voltage range	[V DC]	21.6 ... 26.4		
Max. electrical power consumption	[W]	7	7	12
Degree of protection to EN 60529		IP65 (with plug socket)		

Operating conditions				
Pressure regulation range	[bar]	0.02 ... 2	0.06 ... 6	0.1 ... 10
Input pressure 1 ¹⁾	[bar]	0 ... 4	0 ... 8	0 ... 11
Max. pressure hysteresis	[mbar]	10	30	50
FS (full scale) linearity error	[%]	± 0.5		
FS (full scale) repetition accuracy	[%]	0.5		
Ambient temperature	Operator unit with LED	0 ... +60		
	Operator unit with LCD	0 ... +50		
Temperature of medium	°C	+10 ... +50		

1) Input pressure 1 should always be 1 bar greater than the maximum regulated outlet pressure.

Materials	
Housing	Wrought aluminium alloy
Diaphragm	NBR

Pin allocation M12, electrical connection		
	Pin	Function
	1	Digital input D1
	2	+24 V DC supply voltage
	3	Analogue input W-
	4	Analogue input W+
	5	Digital input D2
	6	Analogue output X
	7	0 V DC or GND
	8	Digital output D3

Proportional pressure regulators VPPM

Order code – VPPM with analogue interface

VPPM – – L – 1 – – – – –

Type	
VPPM	Modular proportional pressure regulator
Nominal width	
6	6 mm
8	8 mm
12	12 mm
Design	
L	In-line valve
F	Flanged valve
Dynamic response class	
L	Low
Valve function	
1	3/2-way valve, normally closed
Pneumatic connection	
G18	Thread G1/8
G14	Thread G1/4
G12	Thread G1/2
F	Flange/sub-base
Pressure regulation range	
0L2H	0.02 ... 2 bar
0L6H	0.06 ... 6 bar
0L10H	0.1 ... 10 bar
Setpoint specification for individual valve	
V1	0 ... 10 V
A4	4 ... 20 mA
Switching output	
N	NPN switching
P	PNP switching
Accuracy	
–	2% (standard)
S1	1%
Operator unit	
–	LED (standard)
C1	With LCD, pressure unit variable

- 1

Only for in-line valve design L and nominal width 6
- 2

Only for in-line valve design L and nominal width 8
- 3

Only for in-line valve design L and nominal width 12
- 4

Only for flanged valve design F
- 5

Not with nominal width 12

Order example:
VPPM-6L-L-1-G18-0L2H-V1P
Modular proportional pressure regulator - nominal width: 6 mm - design: in-line valve - dynamic response class: low - 3/2-way valve, normally closed - pneumatic connection: G1/8 thread - pressure regulation range: 0.02 ... 2 bar - setpoint specification: 0 ... 10 V, PNP switching - 2% accuracy - operator unit with LED

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or [www.festo.com/catalogue/...](#)

Enter the type code in the search field.

2018/11 – Subject to change

★ Generally ready for shipping ex works in 24 hours

➔ [www.festo.com/catalogue/...](#)

1057

Proportional valves >

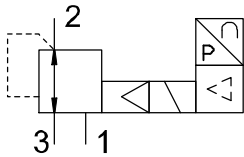
Proportional pressure regulators VPPM

Data sheet – VPPM with IO-Link® interface

Flow rate
380 ... 7000 l/min

Voltage
18 ... 30 V DC

Pressure regulation range
0.02 ... 10 bar



Technical data				Download CAD data → www.festo.com
Design		Piloted diaphragm regulator		
Type of mounting		Via through-hole, via accessories		
IO-Link®	Protocol	IO-Link®, I-Port		
	Protocol version	Device V1.1		
	Port type	A		
	Process data width OUT	[byte]	2	
	Process data width IN	[byte]	2	
Communication mode	COM1	[kBaud]	4.8	
	COM2	[kBaud]	38.4	
	COM3	[kBaud]	230.4	
IO-Link®	Minimum cycle time	[ms]	0.5	

Electrical data				
Type code		VPPM-6	VPPM-8	VPPM-12
Operating voltage range	[V DC]	18 ... 30		
Max. electrical power consumption	[W]	7	7	12
Degree of protection to EN 60529		IP65 (with plug socket)		

Operating conditions				
Pressure regulation range	[bar]	0.02 ... 2	0.06 ... 6	0.1 ... 10
Input pressure 1 ¹⁾	[bar]	0 ... 4	0 ... 8	0 ... 11
Max. pressure hysteresis	[mbar]	10	30	50
FS (full scale) linearity error	[%]	± 0.5		
FS (full scale) repetition accuracy	[%]	0.5		
Ambient temperature	[°C]	0 ... +60		
Temperature of medium	[°C]	+10 ... +50		

1) Input pressure 1 should always be 1 bar greater than the maximum regulated outlet pressure.

Materials	
Housing	Wrought aluminium alloy

Pin allocation – IO-Link® interface			
	Pin	Allocation	Function
	1	24 V DC (U _{EL} /SEN)	Operating voltage supply (PS)
	2	n.c.	Not connected
	3	0 V DC (U _{EL} /SEN)	Operating voltage supply (PS)
	4	C/Q I-Port	Data communication
	5	n.c.	Not connected
	–	FE	Functional earth

Proportional pressure regulators VPPM

Order code – VPPM with IO-Link® interface

VPPM

L

1

LK

S1

Type		
VPPM	Modular proportional pressure regulator	
Nominal width		
6	6 mm	
8	8 mm	
12	12 mm	
Design		
L	In-line valve	
F	Flanged valve	
Dynamic response class		
L	Low	
Valve function		
1	3/2-way valve, normally closed	
Pneumatic connection		
G18	Thread G1/8	1
G14	Thread G1/4	2
G12	Thread G1/2	3
F	Flange/sub-base	4
Pressure regulation range		
0L2H	0.02 ... 2 bar	
0L6H	0.06 ... 6 bar	
0L10H	0.1 ... 10 bar	
Setpoint specification for individual valve		
LK	IO-Link®	
Accuracy		
S1	1%	

- 1 Only for in-line valve design L and nominal width 6
- 2 Only for in-line valve design L and nominal width 8
- 3 Only for in-line valve design L and nominal width 12
- 4 Only for flanged valve design F

Order example:
VPPM-8F-L-1-F-0L10H-LK-S1
Modular proportional pressure regulator - nominal width: 8 mm - design: flanged valve - dynamic response class: low - 3/2-way valve, normally closed - pneumatic connection: flange/sub-base - pressure regulation range: 0.1 ... 10 bar - setpoint specification: IO-Link® - 1% accuracy

Ordering – Product options

Configurable product

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

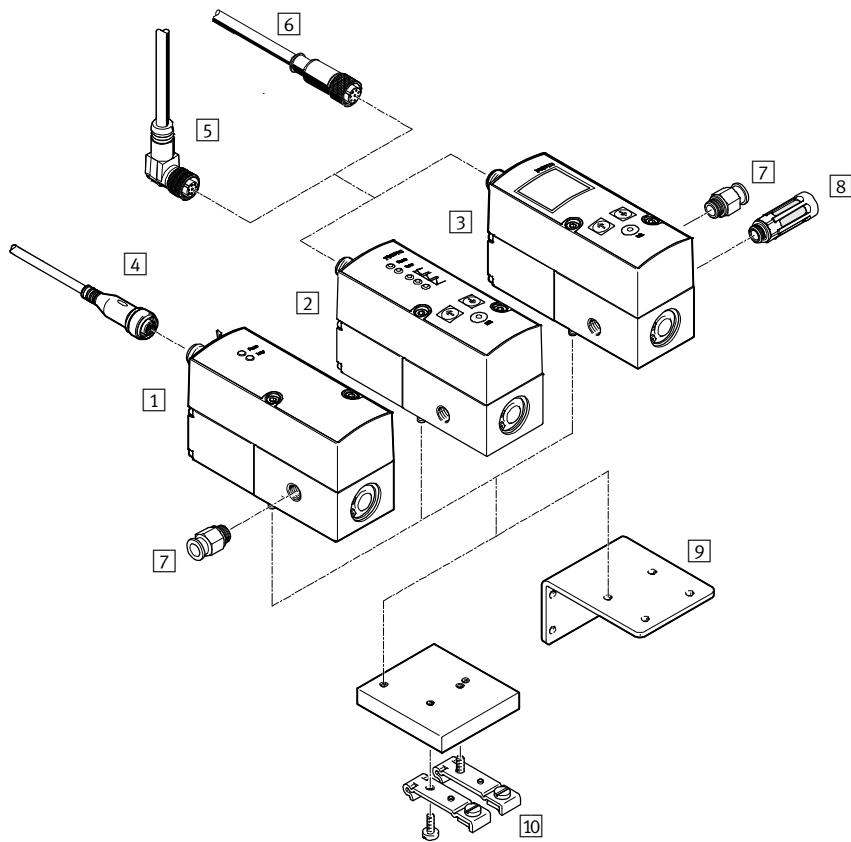
The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

Proportional valves >

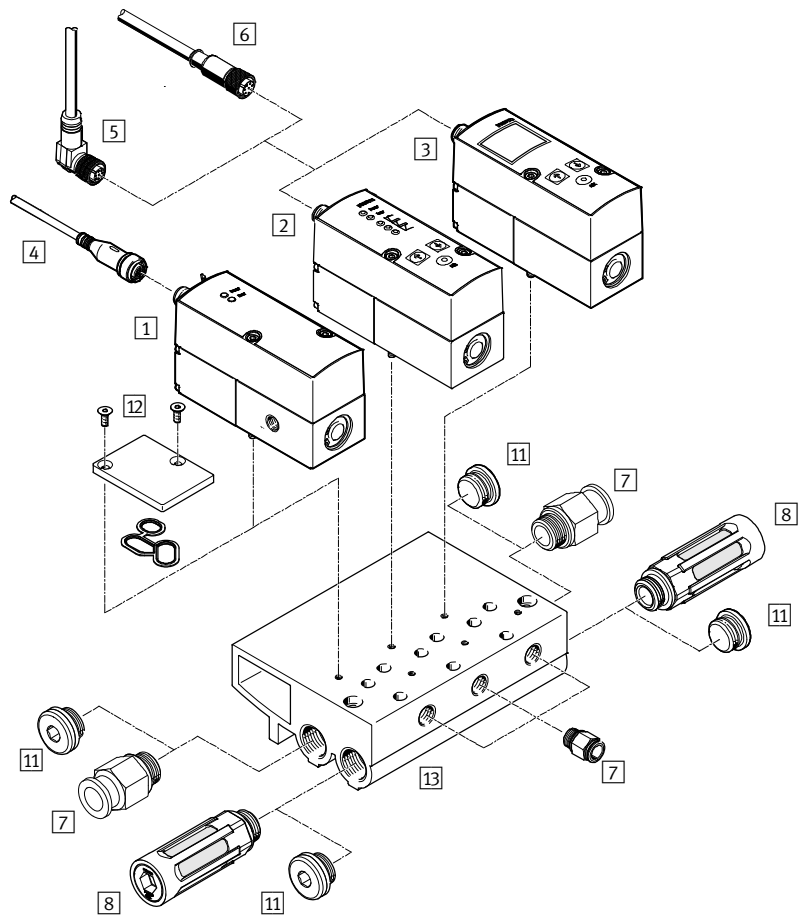
Proportional pressure regulators VPPM

Peripherals overview – Individual mounting



Accessories		→ Page/online
1	Proportional pressure regulator VPPM, operator unit with LED, IO-Link®	1058
2	Proportional pressure regulator VPPM, operator unit with LED	1056
3	Proportional pressure regulator VPPM, operator unit with LCD	1056
4	Connecting cable NEBU-M12G5	1062
5	Plug socket with cable, angled NEBU-M12W8	1062
6	Plug socket with cable, straight SIM-M12-8GD	1062
7	Push-in fitting QS for connecting compressed air tubing with standard O.D.	1062
8	Silencer U for mounting in exhaust ports	1062
9	Bracket VAME-P1-A for mounting the valve	1062
10	H-rail mounting VAME-P1-T for mounting on an H-rail	1062
–	Setpoint module MPZ	1063

Peripherals overview – Manifold assembly

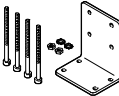
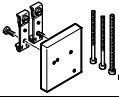
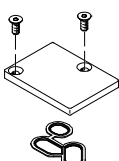


Accessories		➔ Page/online
1	Proportional pressure regulator VPPM, operator unit with LED, IO-Link®	1058
2	Proportional pressure regulator VPPM, operator unit with LED	1056
3	Proportional pressure regulator VPPM, operator unit with LCD	1056
4	Connecting cable NEBU-M12G5	1062
5	Plug socket with cable, angled NEBU-M12W8	1062
6	Plug socket with cable, straight SIM-M12-8GD	1062
7	Push-in fitting QS for connecting compressed air tubing with standard O.D.	1062
8	Silencer U for mounting in exhaust ports	1062
11	Blanking plug B	1062
12	Blanking plate VABB-P1, for vacant position, seal and countersunk screws included in the scope of delivery	1062
13	Manifold block VABM	1063
–	Setpoint module MPZ	1063

Proportional valves >

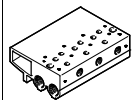
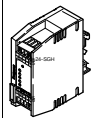
Proportional pressure regulators VPPM

Accessories – Ordering data

Description		Part no.	Type code
[4] Connecting cable for IO-Link®		Data sheets online: ➔ nebu	
	Straight socket, M12x1, 5-pin, degree of protection IP65, IP68, IP69K	Cable length 5 m	574321 NEBU-M12G5-E-5-Q8N-M12G5
		Cable length 7.5 m	574322 NEBU-M12G5-E-7.5-Q8N-M12G5
		Cable length 10 m	574323 NEBU-M12G5-E-10-Q8N-M12G5
[5] Plug socket with cable, angled socket		Data sheets online: ➔ nebu	
	M12, 8-pin	Cable length 2 m	542256 NEBU-M12W8-K-2-N-LE8
		Cable length 5 m	542257 NEBU-M12W8-K-5-N-LE8
		Cable length 10 m	570007 NEBU-M12W8-K-10-N-LE8
[6] Plug socket with cable, straight socket		Data sheets online: ➔ sim	
	M12, 8-pin	Cable length 2 m	525616 SIM-M12-8GD-2-PU
		Cable length 5 m	525618 SIM-M12-8GD-5-PU
		Cable length 10 m	570008 SIM-M12-8GD-10-PU
Connecting cable		Data sheets online: ➔ nebv	
	Straight socket, 8-pin, and 1 straight plug, 4-pin	Cable length 2 m	553575 NEBV-M12G8-K-2-M12G4
		Cable length 5 m	553576 NEBV-M12G8-K-5-M12G4
	Straight socket, 8-pin, and 2 straight plugs, 4-pin	Cable length 3 m	547888 NEBV-M12G8-KD-3-M12G4
[7] Push-in fitting		Data sheets ➔ Page 1443	
	For thread	G1/8	★ 186098 QS-G1/8-8
		G1/4	★ 186099 QS-G1/4-8
		G1/2	★ 186104 QS-G1/2-12
[8] Silencer		Data sheets ➔ Page 1661	
	For thread	G1/8	★ 6841 U-1/8-B
		G1/4	★ 6842 U-1/4-B
		G1/2	★ 6844 U-1/2-B
[9] Bracket			
	For valve mounting	542251	VAME-P1-A
[10] H-rail mounting			
	For individual valve	542255	VAME-P1-T
[11] Blanking plug		Data sheets online: ➔ b-1	
	For thread	G1/8	★ 3568 B-1/8
		G1/4	★ 3569 B-1/4
		G1/2	★ 3571 B-1/2
[12] Blanking plate			
	For one valve position	558350	VABB-P1

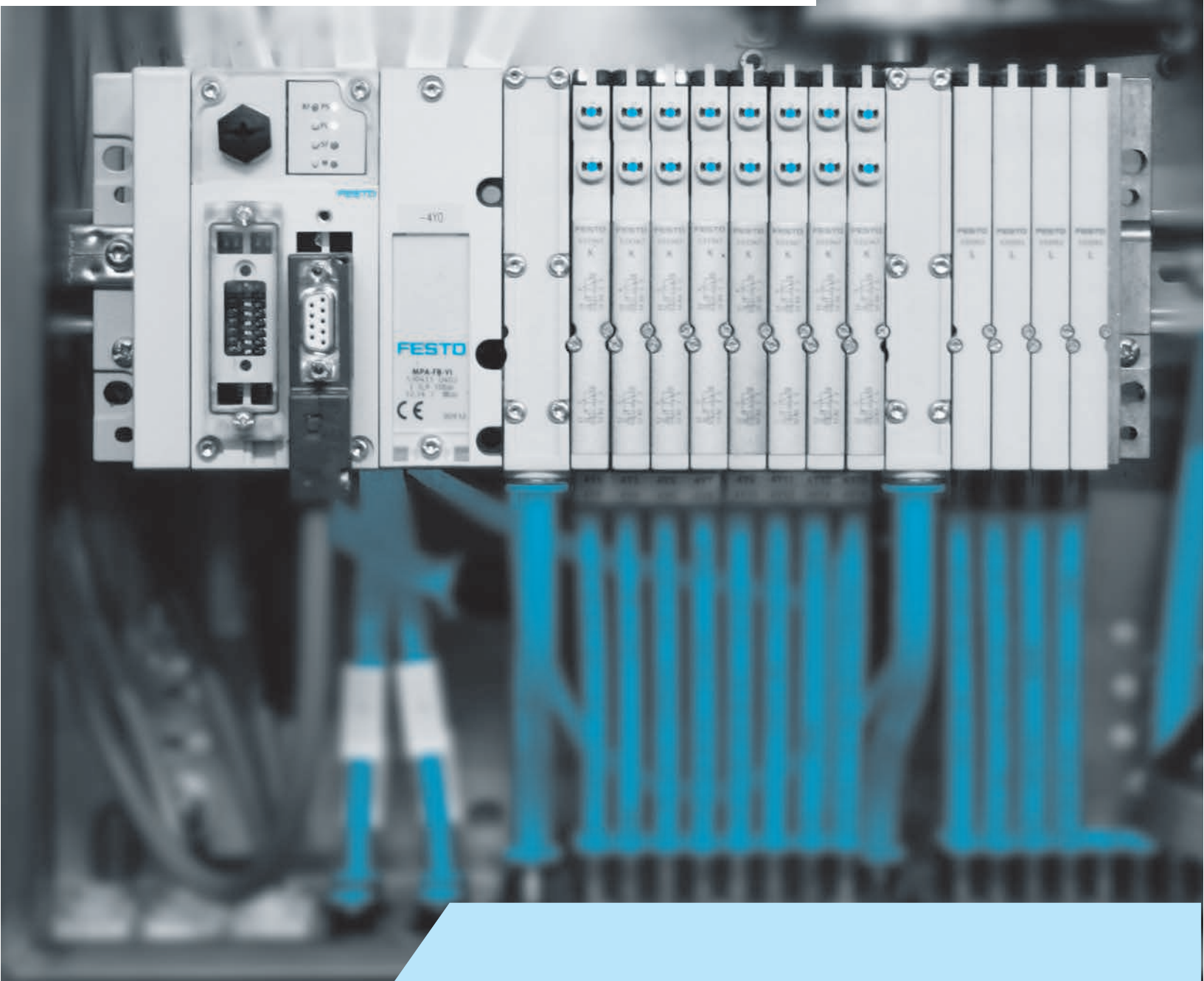
Proportional pressure regulators VPPM

Accessories – Ordering data

	Description	Part no.	Type code
13 Manifold block		Data sheets online: → vppm	
	2 valve positions	542252	VABM-P1-SF-G14-2-P3
	3 valve positions	542253	VABM-P1-SF-G14-3-P3
	4 valve positions	542254	VABM-P1-SF-G14-4-P3
Setpoint module		Data sheets online: → mpz	
	Setpoint module for generating 6 + 1 analogue voltage signals	546224	MPZ-1-24DC-SGH-6-SW

9 Valve terminals

- + Standards-based valve terminals: valve modules to ISO 15407-2 and ISO 5599-2 for standards-based valves with versatile valve functions and as plug-in or individual connection
- + Universal valve terminals: sturdy and modular valve modules on sub-bases for all standard tasks
- + Application-specific valve terminals: space-saving and compact valve modules for special requirements
- + Electrical peripherals: electric components for valve terminals and AS-Interface components
- + Accessories



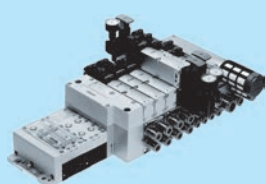


MPA-S

Valve terminals

- + Highly flexible
- + Open to PROFIBUS-DP, INTERBUS®, CANopen, DeviceNet®, CC-LINK®

→ page 1129



VTSA

Valve terminals, to ISO 15407-2, ISO 5599-2

- + Multi-pin plug connection or fieldbus connection via CPX system
- + Five valve sizes can be combined on one valve terminal

→ page 1139



CPX

Terminal

- + Automation platform
- + Open to all common fieldbus protocols and Ethernet

→ page 1595

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NEW New series	
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NEW New series	

Product overview

Software tool

Product Finder for valve terminals		Find the right valve terminal quickly with the help of the Product Finder. Start the Product Finder via the blue icons in the product tree. Select the technical features on the left-hand side step-by-step; the selection of suitable products on the right-hand side is automatically updated to reflect the chosen technical features.	The use of logic checks ensures that only correct configurations are available for selection. The Product Finder for valve terminals is part of the electronic catalogue and is not available as a separate software program. This tool can be found - on the Internet at www.festo.com/catalogue by clicking on the blue "Product Finder" button - or on the DVD under "Product Finder"
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Universal valve terminals

			
Type	Valve terminals with individual electrical connection VUVG-S	★ Valve terminals with multi-pin plug or fieldbus connection VTUG	Valve manifolds VTUS
Width	10 mm, 14 mm, 18 mm	10 mm, 14 mm, 18 mm	21 mm, 26.5 mm, 30 mm
Standard nominal flow rate	1380 l/min at 18 mm, 380 l/min at 10 mm, 780 l/min at 14 mm	1200 l/min at 18 mm, 330 l/min at 10 mm, 630 l/min at 14 mm	600... 2300 l/min
Max. no. of valve positions	16	24	16
Electrical actuation	Individual connection	Multi-pin plug, I-Port interface, IO-Link, fieldbus	Individual connection
Valve terminal design	Fixed grid	Fixed grid	Fixed grid
Description	- Compact with small valves VUVG - Connection technology easy to change via the electrical connection box - Wide range of valve functions - Also with semi in-line valves	- Low-cost fixed grid - Extremely easy assembly - Exchangeable electrical actuation - IO-Link capable - Valves VUVG with individual electrical connection can be integrated - Also available with pneumatic multi-pin plug	- Robust valves VUVS with long service life - Individual electrical connection - Pilot air supply in the manifold rail - Comprehensive range of accessories
→ Page/online	923	1071	1091

Product overview

Universal valve terminals

				
Type	Valve terminals MPA-L	Valve terminals MPA-S	Valve terminals VTSA-F	Valve terminals, Compact Performance CPV
Width	10 mm, 14 mm, 20 mm	10 mm, 20 mm	18 mm, 26 mm, 42 mm, 52 mm, 65 mm	10 mm, 14 mm, 18 mm
Standard nominal flow rate	360 l/min at 10 mm, 670 l/min at 14 mm, 870 l/min at 20 mm	360 l/min at 10 mm, 700 l/min at 20 mm	700 l/min at 18 mm, 1350 l/min at 26 mm, 1860 l/min at 42 mm, 2900 l/min at 52 mm, 4000 l/min at 65 mm	400 l/min at 10 mm, 800 l/min at 14 mm, 1600 l/min at 18 mm
Max. no. of valve positions	32	64	32	8
Electrical actuation	Fieldbus, multi-pin plug, electrical terminal CPX, IO-Link, I-Port	Fieldbus, multi-pin plug, electrical terminal CPX, AS-Interface®, CP install- ation system	Ethernet, fieldbus, multi-pin plug, electrical terminal CPX, integrated controller, AS-Interface® connection	AS-Interface, CP installation system, individual connection, fieldbus, multi-pin plug, IO-Link®
Valve terminal design	Modular, valve sizes can be mixed	Modular, valve sizes can be mixed	Modular, valve sizes can be mixed	Fixed grid
Description	• Maximum modularity • Single granular • Polymer sub-base • Three valve sizes • Max. 32 valves • Fieldbus connection via CPX • IO-Link capable	• Valve terminals for universal applica- tions • High-performance valves in a sturdy metal housing • Metal linking • Two valve sizes can be combined • Excellent communication thanks to serial linking • Fieldbus connection via CPX	• Flow rate-optimised VTSA valve terminal • Linking with increased flow rates • Functions as per VTSA	• Maximum performance in the smallest of spaces • Three sizes • Wide range of connection and mounting options • Multi-pin or fieldbus control • IO-Link capable
→ Page/online	1117	1129	vtsa	cpv

09

Universal valve terminals

			
Type	Valve terminals, Smart Cubic CPV-SC	Valve manifolds, Compact Performance CPV10-EX-VI	Valve terminals VTUB-12
Width	10 mm	10 mm	12 mm, 24 mm
Standard nominal flow rate	170 l/min	400 l/min	400 l/min
Max. no. of valve positions	16	8	35
Electrical actuation	CP installation system, individual connection, fieldbus, multi-pin plug	Individual connection	Multi-pin plug, IO-Link, fieldbus
Valve terminal design	Fixed grid	Fixed grid	Fixed grid
Description	• Small and compact • High flow rate even with compact design • Suitable for vacuum • Multi-pin or fieldbus control	• Intrinsically safe valve manifold design to ATEX Category 2 (Zone 1) • Optimised for control cabinet assembly • Optimal for pilot control of process valves	• Compact dimensions • Poppet valves in polymer technology • Multi-pin or fieldbus control • IO-Link capable
→ Page/online	cpv-sc	cpv10-ex	vtub-12

Valve terminals

Product overview

Standards-based valve terminals

		
Type	Valve terminals, ISO 15407-2/ISO 5599-2 VTSA	Valve manifolds, ISO 15407-1 VTIA
Width	18 mm, 26 mm, 42 mm, 52 mm, 65 mm	18 mm, 26 mm
Max. standard nominal flow rate	1100 l/min at 26 mm, 1300 l/min at 42 mm, 2900 l/min at 52 mm, 4000 l/min at 65 mm, 550 l/min at 18 mm	1100 l/min at 26 mm, 550 l/min at 18 mm
Max. no. of valve positions	32	16
Electrical actuation	Ethernet, fieldbus, multi-pin plug, integrated controller	Individual connection
Valve terminal design	Modular, valve sizes can be mixed	Modular, valve sizes can be mixed
Description	- Conforms to ISO 15407-2/ISO 5599-2 - Multi-pin plug connection or fieldbus connection via the CPX system - Five valve sizes can be combined on one valve terminal - Integratable safety functions	- Conforms to ISO 15407-1 - Wide range of individual electrical connections - Two valve sizes can be combined
→ Page/online	1139	vtia

Application-specific valve terminals

				
Type	Dispense heads VT0E	Valve terminals MPA-C	Valve terminals VT0C	Valve terminals MH1
Width		14 mm	10 mm	10 mm
Nominal width DN	0.8 mm			
Standard nominal flow rate		780 l/min	10 l/min	10 l/min
Operating pressure	0 ... 0.5 bar	-0.9 ... 8 bar	0 ... 8 bar	-0.9 ... 8 bar
Electrical connection	Cable, plug, open end, Sub-D, 9-pin, 2-wire			
Electrical actuation		Multi-pin plug, IO-Link, I-Port	Multi-pin plug, I-Port interface, IO-Link	Individual connection, multi-pin plug
Nominal operating voltage DC	24	24	24	5, 12, 24
Max. no. of valve positions		32	24	24
Valve terminal design		Modular and expandable	Fixed grid	Fixed grid
NEW	• New series			
Description	- This ready-to-install dosing solution saves time and costs - Compact 9 mm grid dimensions - Maximum dosing precision down to the microlitre range - Ideally suited to contactless dispensing and jetting of liquid media - Small internal volume makes it easy to rinse	- Valve terminals in clean design - Easy-to-clean design - Excellent corrosion resistance - IP69K degree of protection - FDA-compliant materials - Redundant sealing system	- Compact pilot valves - Compact assembly - Greater safety thanks to interlock function - Multi-pin or fieldbus control - IO-Link capable	- Miniaturised poppet valves - Multi-pin or electrical individual connection
→ Page/online	vtoe	mpa-c	vtoc	mh1

Product overview

Electrical peripherals

Type	 Terminal CPX	 Fieldbus modules CTEU Installation system CTEL	 CPI installation system CTEC	 Automation systems CPX-E
Protocol	INTERBUS, DeviceNet, PROFIBUS, CANopen, CC-Link, Ether-Net/IP, PROFINET, EtherCAT, ModbusTCP	AS-Interface®, CANopen, CC-Link, DeviceNet, EtherCAT, PROFINET, PROFIBUS DP, CPI-B	INTERBUS, DeviceNet, PROFIBUS, CANopen, CC-Link, Ether-Net/IP, PROFINET, EtherCAT, ModbusTCP	
Max. address volume for inputs	64 bytes	2 ... 64 bytes	16 bytes	64 bytes
Max. address volume for outputs	64 bytes	2 ... 64 bytes	16 bytes	64 bytes
Parameterisation	Diagnostic behaviour, failsafe response, forcing of channels, signal setup	Activate diagnostics, diagnostic behaviour, failsafe and idle response, failsafe response, watchdog disable, watchdog enable		
Degree of protection	IP65, IP67	IP65, IP67	IP65, IP67	IP20
Nominal operating voltage DC	24 V	24 ... 30 V	24 V	24 V
Operating voltage range DC	18 ... 30 V	18 ... 31.6 V	18 ... 30 V	
NEW				• New series
Description	- Automation platform - Open to all common fieldbus protocols and Ethernet - Integrated diagnostic and maintenance functions - Can be used as stand-alone as remote I/O or with valve terminals MPA-S, MPA-L, VTSA/VTSA-F - Choice of polymer or metal housing with individual linking	- For valve terminals VTUB-12, VTUG, MPA-L, CPV, VTOC - Can be expanded into installation system CTEL - Fieldbus-typical LEDs, interfaces and switching elements available - Isolated power supply for electronics and valves	- CPX master module for four CPI strings - Combination of centralised and decentralised installation possible - Decentralised pneumatic components and sensors for fast processes - Can be connected to valve terminal CPV, MPA-S, CPV-SC	- Modern control system with high performance - Fieldbus master interfaces, EtherCAT master, fieldbus slave interfaces, PROFINET, EtherNet/IP, PROFIBUS, EtherCAT - Digital input modules (16DI), digital output modules (8DO/0.5 A) - Analogue input modules (current, voltage), analogue output modules (current, voltage) - Modern programming system CODESYS V3 to IEC 61131-3 - Integration of motion functions (SoftMotion) - High I/O component density - Easy mounting of the control system on an H-rail
→ Page/online	1595	1581	ctec	1639

Product overview

Electrical peripherals

				
Type	Terminal CPX-P	AS-Interface® components ASI, CACC	Electrical interfaces CPX-CTEL	AS-Interface® modules CESA
Protocol	DeviceNet, PROFIBUS, EtherNet/IP, PROFINET, ModbusTCP		I-Port, IO-Link	AS-Interface®, CANopen, PROFIBUS
Max. address volume for inputs	64 bytes		32	
Max. address volume for outputs	64 bytes		32	
Parameterisation	Diagnostic behaviour, failsafe response, forcing of channels, signal setup		Diagnostic behaviour, fail-safe mode per channel, force mode per channel, idle mode per channel, module parameter, tool changeover mode	
Degree of protection	IP20, IP65	IP65	IP65, IP67	IP20
Nominal operating voltage DC	24 V	24 V	24 V	AS-Interface® voltage 30 V DC
Operating voltage range DC	18 ... 30 V	26.5 ... 31.6 V	18 ... 30 V	
Description	• Use of harmonised remote I/O and valve terminals in a control cabinet • Combination with modules of the electrical terminal CPX, which enables use for hybrid applications • Unique modular structure • Comprehensive integrated diagnostic and maintenance functions	• Accessories for the AS-Interface® installation system • Modules for actuating individual valves ASI-EVA • Cable distributor ASI-KVT • Addressing device ASI-PRG-ADR • Compact I/O modules (IP65, IP67) • AS-Interface® power supply unit CACN	• CPX-CTEL master module with 4 I-Port connections • Decentralised pneumatic components and sensors for fast processes • Standardised M12 connections	• AS-Interface® master gateway • Duplicate address recognition • Direct operation via pushbuttons • Graphic display • Comprehensive diagnostics via LED and display • Specification 3.0
→ Page/online	cpx-p	as-interface	cpx-ctel	cesa

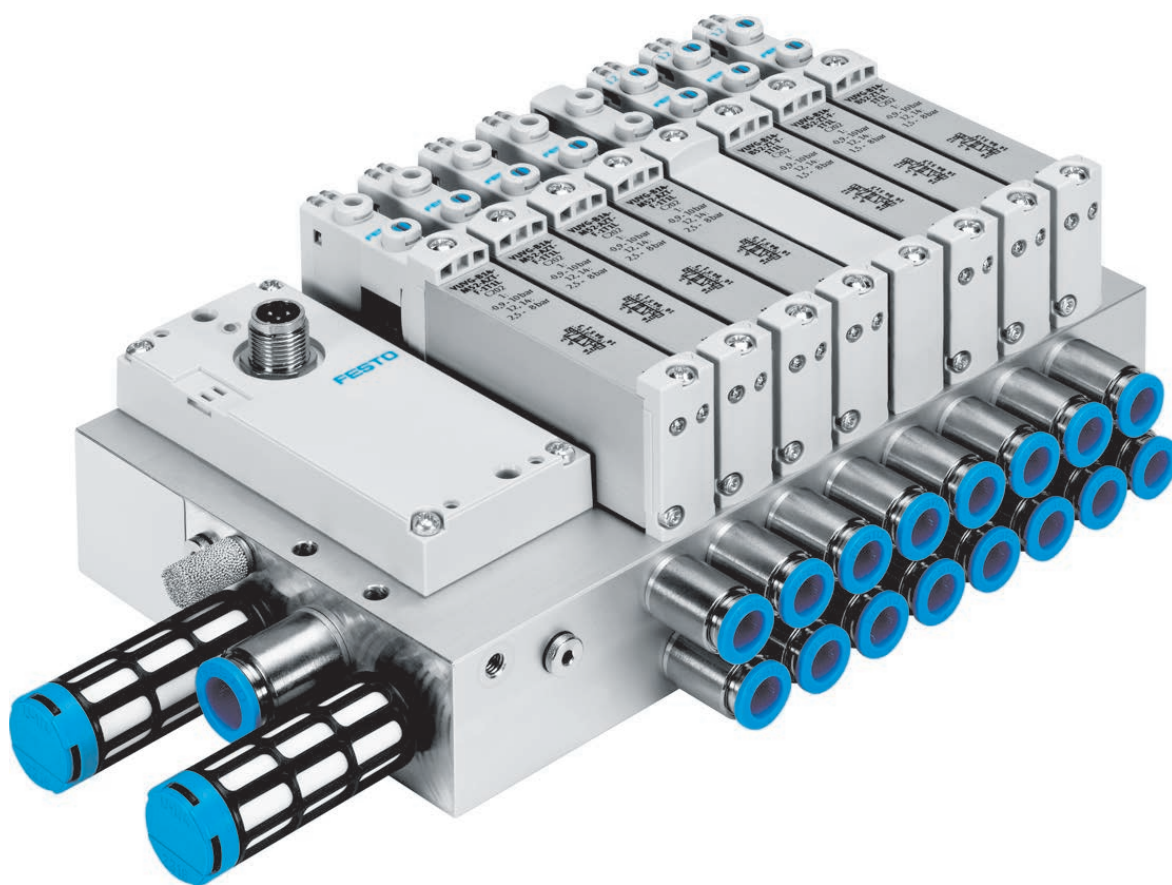
Customised components – for your specific requirements



Valve terminals with customised designs
 Can't find the valve terminal you need in our catalogue?
 We can offer you customised components that are tailored to your specific requirements.

- Common product modifications:
- Coatings for special ambient conditions
 - Customised cables: length, pin allocation, pre-assembled with plug
 - Modified actuating elements
 - Modified connecting thread
 - Modified valve sub-bases

Many additional variants are possible. Ask your Festo sales engineer, who will be happy to help.
 → www.festo.com/contact



Cost-optimised and highly communicative

- + Excellent price/performance ratio thanks to fixed grid manifold
- + Universal interface for CTEU fieldbus nodes or IO-Link®
- + Up to 24 valve positions

Universal valve terminals ›
Valve terminals

VTUG

Individual connection
Multi-pin plug
Fieldbus
IO-Link
I-Port

Universal valve terminals >

Valve terminals

VTUG



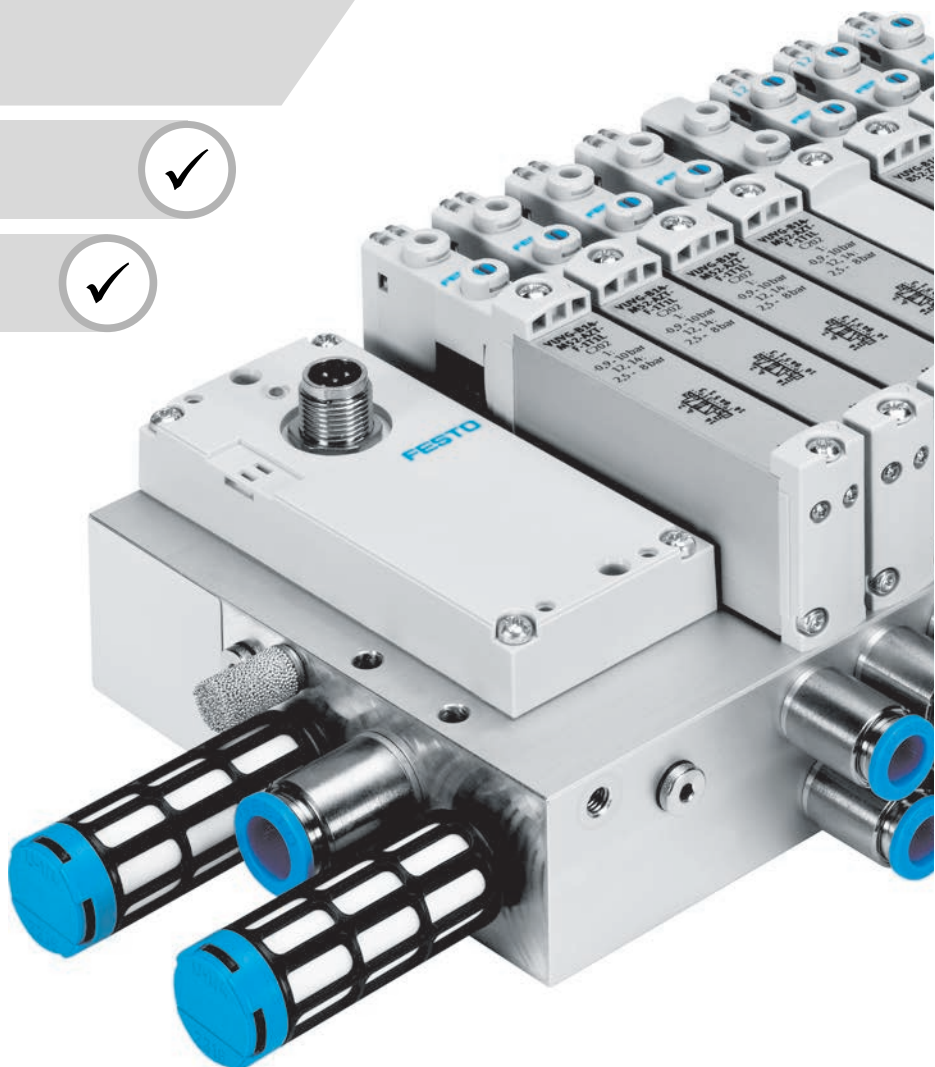
Overview, configuration and ordering

→ www.festo.com/catalogue/vtug



Additional information, support and user documentation

→ www.festo.com/sp/vtug



- + Variable multi-pin plug connection
- + I-Port interface for CTEU bus node
- + IO-Link mode for direct connection to an IO-Link master
- + Sturdy and durable metal components
- + Excellent price/performance ratio
- + Connection M5, M7, G1/8
- + Push-in connector 3, 4, 6, 8 mm
- + Degree of protection IP40/IP67

Valve terminals VTUG with multi-pin plug and fieldbus connection

Product range overview

Function	Version	Code	Size			→ Page/online
			10 mm	14 mm	18 mm	
Position function 0-23	5/2-way valve, single solenoid, mechanical spring	A	■	■	■	1076, 1078, 1080, 1082
	5/2-way valve, single solenoid, pneumatic/mechanical spring	P	■	–	■	1076, 1078, 1080, 1082
	5/3-way valve, mid-position pressurised	B	■	■	■	1076, 1078, 1080, 1082
	5/3-way valve, mid-position exhausted	E	■	■	■	1076, 1078, 1080, 1082
	5/3-way valve, mid-position closed	G	■	■	■	1076, 1078, 1080, 1082
	3/2-way valve, pneumatic/mechanical spring, normally closed	VX	■	–	–	vtug
	3/2-way valve, pneumatic spring, normally closed	VX	–	■	–	vtug
	3/2-way valve, pneumatic/mechanical spring, normally open	VW	■	–	–	vtug
	3/2-way valve, pneumatic spring, normally open	VW	–	■	–	vtug
	2x 3/2-way valve, 1x normally closed, 1x normally open, pneumatic spring	H	■	■	■	1076, 1078, 1080, 1082
	5/2-way double solenoid valve	J	■	■	■	1076, 1078, 1080, 1082
	2x 3/2-way valve, normally closed, pneumatic spring	K	■	■	■	1076, 1078, 1080, 1082
	5/2-way valve, single solenoid, pneumatic spring	M	–	■	–	1076, 1078, 1080, 1082
	2x 3/2-way valve, normally open, pneumatic spring	N	■	■	■	1076, 1078, 1080, 1082
	2x 3/2-way valve, 1x normally closed, 1x normally open, mechanical spring	VH	■	■	■	1076, 1078, 1080, 1082
	2x 3/2-way valve, normally closed, mechanical spring	VK	■	■	■	1076, 1078, 1080, 1082
	2x 3/2-way valve, normally open, mechanical spring	VN	■	■	■	1076, 1078, 1080, 1082
	Additional power supply	S	■	■	■	1076, 1078, 1080, 1082
	Vacant position	L	■	■	■	1076, 1078, 1080, 1082

Note

Valve terminals can be ordered quickly and easily online.
The convenient product configurator can be found at:

→ www.festo.com/catalogue/vtug

Universal valve terminals >

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features

Innovative

- Festo-specific I-Port interface for bus nodes (CTEU)
- IO-Link® mode for direct connection to a higher-order IO-Link® master
- Festo-specific I-Port interface with interlock
- Variable multi-pin plug connection using 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 plug connectors
- Multiple pressure zones possible
- Sub-D variant and fieldbus connection rated to IP67
- Internal or external pilot air with the same manifold rail possible through the use of blanking plugs
- Sub-base valves with working ports underneath for installation in control cabinets

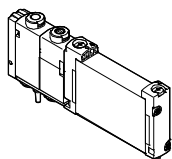
Reliable

- Sturdy and durable metal components
 - Valves
 - Manifold rails
- Fast troubleshooting thanks to LED display
- Choice of manual override: non-detenting, detenting or covered

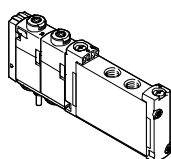
Easy to install

- Easy mounting thanks to captive screws and seal
- Connection technology easy to change
- Inscription label holder for labelling

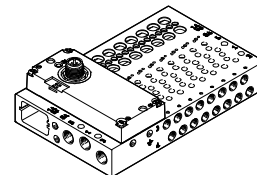
Sub-base and semi in-line valves



Sub-base valve
VUVG-B...1T1

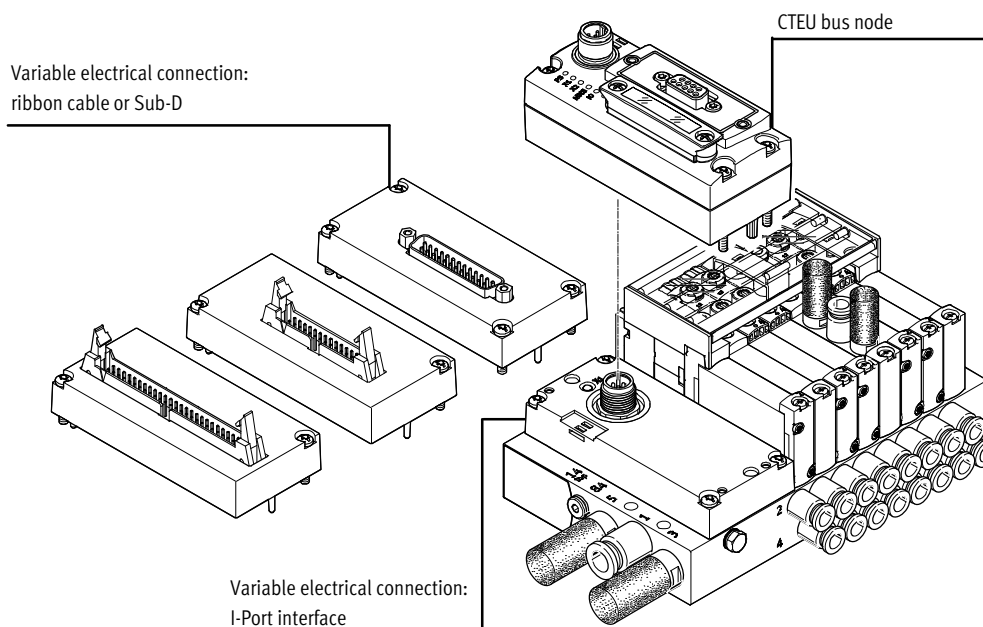


Semi in-line valve
VUVG-S...1T1



Valve terminal VTUG
with variable electrical connection

Overview



Equipment options

Valve functions

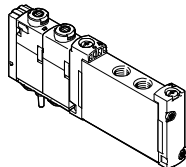
- 2x 3/2-way, 5/2-way, 5/3-way valves
- Reversible piston spool valves, up to 24 valve positions

- IO-Link® mode for direct connection to a higher-order IO-Link® master
- Festo-specific I-Port interface for bus nodes (CTEU)
- Variable multi-pin plug connection using Sub-D or ribbon cable
- Festo-specific I-Port interface with interlock (for valves of size 10 mm)

Valve terminals VTUG with multi-pin plug and fieldbus connection

Key features

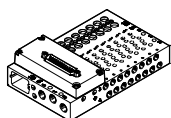
Basic valves VUVG



- Size 10 and 14 mm
- Semi in-line valves
- Sub-base valves
- 2x 3/2-way, 5/2-way and 5/3-way valves

Electrical connection

Multi-pin plug connection



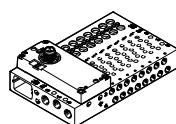
The signals are transmitted from the controller to the valve terminal via a pre-assembled or self-assembled multi-wire cable to the multi-pin plug connection,

which substantially reduces installation time. The valve terminal can be equipped with max. 48 solenoid coils.

Versions:

- Sub-D connection
- Ribbon cable

I-Port interface



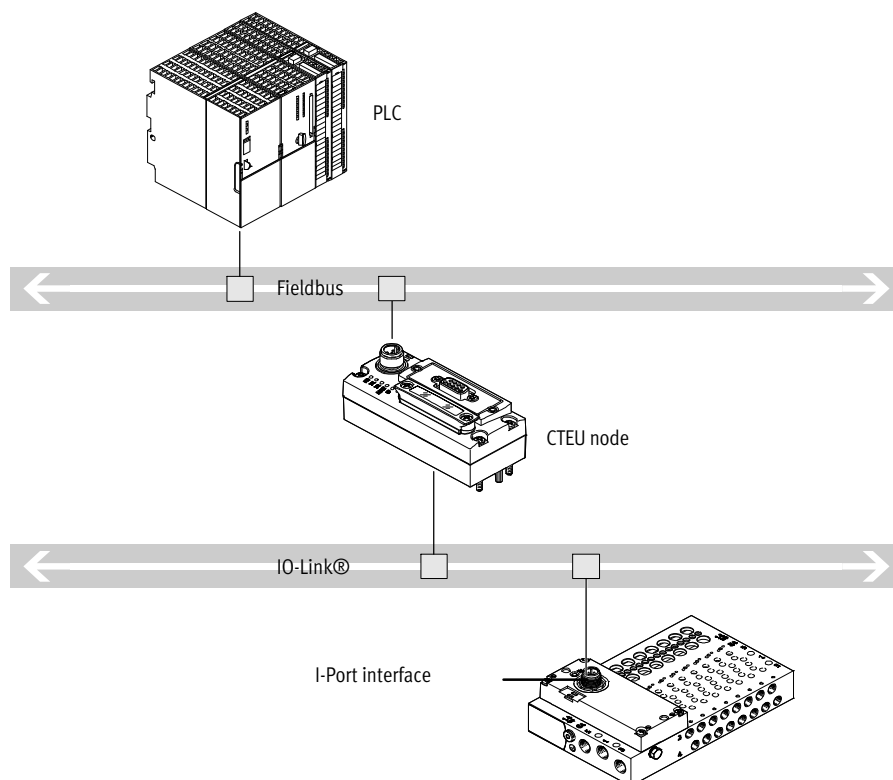
Festo-specific interface as a basis for bus nodes (CTEU) or in IO-Link® mode for direct connection to a higher-level IO-Link® master.

Communication and power supply take place via a common M12 interface on the terminal.

Connection options:

- As I-Port interface for bus nodes (CTEU)
- In IO-Link® mode for direct connection to an IO-Link® master

System overview – IO-Link®



- Communication with the higher-order controller via fieldbus
- Use a bus node CTEU compatible with the fieldbus protocol

- Up to 64 inputs/outputs (solenoid coils), depending on the valve terminal
- No preprocessing

Universal valve terminals >

Valve terminals VTUG with multi-pin plug and fieldbus connection

Data sheet – Semi in-line valve M5/M7

Size 10 mm

Flow rate
130 ... 330 l/min

Voltage
24 V DC



Technical data				Download CAD data → www.festo.com											
Valve function				T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position				C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾
Pneumatic spring reset method				Yes			No			Yes ⁵⁾	–	No	–		
Mechanical spring reset method				No			Yes			Yes ⁵⁾	–	Yes	Yes		
Stable position				Monostable							Bistable		Monostable		
Port 1, 3, 5				On manifold rail											
Port 2, 4		VUVG-S10-...-M5		M5											
		VUVG-S10-...-M7		M7											
Port 12, 14				On manifold rail											
Flow rate on manifold rail M5		[l/min]		150			130			230	230	230	210		
Flow rate on manifold rail M7		[l/min]		160			140			330	330	290	280		
Vacuum operation at port 1				No			With external pilot air supply								
Design				Piston spool											
Type of mounting				On manifold rail											
Electrical connection				Via sub-base											
Manual override				Choice of non-detenting, covered, non-detenting/detenting or detenting											
Degree of protection to EN 60529		Individual valve		IP67/IP65											
		Valve terminal		IP40, IP67/IP65											

- 1) C=Normally closed.
- 2) U=Normally open/mid-position pressurised.
- 3) E=Normally exhausted.
- 4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.
- 5) Combined reset method.

Operating conditions										
Valve function				T32-A ⁶⁾	T32-M ⁷⁾	M52-R ⁸⁾	B52	M52-M ⁷⁾	P53	
Operating medium				Compressed air to ISO 8573-1:2010 [7:4:4]						
Operating pressure	Internal pilot air supply	[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8		
	External pilot air supply	[bar]	1.5 ... 10	−0.9 ... 10	−0.9 ... 10	−0.9 ... 10	−0.9 ... 8	−0.9 ... 10		
Pilot pressure ⁹⁾			1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8		
Ambient temperature			[°C]	−5 ... +60						
Temperature of medium			[°C]	−5 ... +60						

- 6) Pneumatic spring.
- 7) Mechanical spring.
- 8) Pneumatic/mechanical spring.
- 9) Minimum pilot pressure 50% of operating pressure.

Materials			
Housing		Wrought aluminium alloy	
Seals		HNBR, NBR	

Valve terminals VTUG with multi-pin plug and fieldbus connection

Order code – Semi in-line valve M5/M7

VUVG	-	S	10	-	-	-	Z	-	-	1	T1	L
Valve design												Display
Semi in-line valve		S										L LED
Size												Electrical connection
10 mm			10								T1	Plug-in
Valve function												Nominal operating voltage
5/2-way valve, single solenoid											1	24 V DC
5/2-way valve, double solenoid												Pneumatic connection
5/3-way valve, mid-position closed												M5 M5
5/3-way valve, mid-position pressurised												M7 M7
5/3-way valve, mid-position exhausted												Q3 Push-in connector 3 mm
2x 3/2-way valve, normally closed												Q4 Push-in connector 4 mm
2x 3/2-way valve, 1x normally open, 1x normally closed												Q4H Push-in connector 4 mm
2x 3/2-way valve, normally open												Q6 Push-in connector 6 mm
												Q6H Push-in connector 6 mm
												T14 Push-in connector 1/4"
												T14H Push-in connector 1/4"
												T18 Push-in connector 1/8"
												T316 Push-in connector 3/16"
												T316H Push-in connector 3/16"
												T532 Push-in connector 5/32"
												Manual override
												H Non-detenting
												S Covered
												T Non-detenting, detenting
												Y Detenting, without accessories
												Pilot air
												Z External
												Reset method
												A Pneumatic spring with T32
												M Mechanical spring with T32 and M52
												R Pneumatic/mechanical spring with M52
												- With B52 and P53

Order example:
VUVG-S10-T32C-MZT-M5-1T1L
Universal solenoid valve VUVG - semi in-line valve, size 10 mm - 2x 3/2-way valve, normally closed - mechanical spring reset method, external pilot air supply, non-detenting/detenting manual override - pneumatic connection M5 - nominal operating voltage 24 V DC, plug-in electrical connection, LED display

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

Universal valve terminals >

Valve terminals VTUG with multi-pin plug and fieldbus connection

Data sheet – Semi in-line valve G1/8

Size 14 mm

Flow rate
520 ... 630 l/min

Voltage
24 V DC



Technical data				Download CAD data → www.festo.com											
Valve function				T32-A			T32-M			M52-A	B52	M52-M	P53		
Normal position				C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾
Pneumatic spring reset method				Yes			No			Yes	–	No	–		
Mechanical spring reset method				No			Yes			No	–	Yes	Yes		
Stable position				Monostable							Bistable		Monostable		
Port 1, 3, 5				On manifold rail											
Port 2, 4				G1/8											
Port 12, 14				On manifold rail											
Flow rate on manifold rail G1/8				[l/min]	610		520		620	630	620	590			
Vacuum operation at port 1				No			Only with external pilot air supply								
Design				Piston spool											
Type of mounting				On manifold rail											
Electrical connection				Via sub-base											
Manual override				Choice of non-detenting, covered, non-detenting/detenting or detenting											
Degree of protection to EN 60529		Individual valve		IP67/IP65											
		Valve terminal		IP40, IP67/IP65											

- 1) C=Normally closed.
2) U=Normally open/mid-position pressurised.
3) E=Normally exhausted.
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.

Operating conditions									
Valve function				T32-A ⁵⁾	T32-M ⁶⁾	M52-A ⁵⁾	B52	M52-M ⁶⁾	P53
Operating medium				Compressed air to ISO 8573-1:2010 [7:4:4]					
Operating pressure	Internal pilot air supply		[bar]	1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
	External pilot air supply		[bar]	1.5 ... 10	−0.9 ... 10	−0.9 ... 10	−0.9 ... 10	−0.9 ... 8	−0.9 ... 10
Pilot pressure ⁷⁾				1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
Ambient temperature				[°C] −5 ... +60					
Temperature of medium				[°C] −5 ... +60					

- 5) Pneumatic spring.
6) Mechanical spring.
7) Minimum pilot pressure 50% of operating pressure.

Materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR

Valve terminals VTUG with multi-pin plug and fieldbus connection

Order code – Semi in-line valve Gx

VUVG	-	S	14	-	-	-	Z	-	-	-	1	T1	L
Valve design													Display
Semi in-line valve		S											L LED
Size													Electrical connection
14 mm			14									T1	Plug-in
Valve function													Nominal operating voltage
5/2-way valve, single solenoid												1	24 V DC
5/2-way valve, double solenoid													Pneumatic connection
5/3-way valve, mid-position closed													G18
5/3-way valve, mid-position pressurised													T14
5/3-way valve, mid-position exhausted													T516
2x 3/2-way valve, normally closed													Q4
2x 3/2-way valve, 1x normally open, 1x normally closed													Q6
2x 3/2-way valve, normally open													Q8
													Manual override
													H
													S
													T
													Y
													Pilot air
													Z
													Reset method
													A
													M
													-

Order example:
VUVG-S14-T32U-AZT-G18-1T1L
Universal solenoid valve VUVG - semi in-line valve, size 14 mm - 2x 3/2-way valve, normally open - pneumatic spring reset method, external pilot air supply, non-detenting/ detenting manual override - pneumatic connection G1/8 - nominal operating voltage 24 V DC, plug-in electrical connection, LED display

Ordering – Product options

Configurable product

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

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Universal valve terminals >

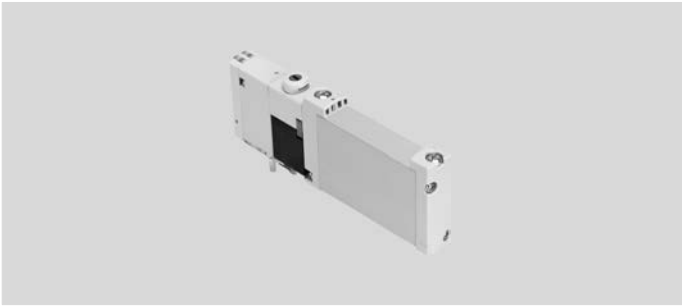
Valve terminals VTUG with multi-pin plug and fieldbus connection

Data sheet – Sub-base valve M5/M7

Size 10 mm

Flow rate
130 ... 300 l/min

Voltage
24 V DC



Technical data				Download CAD data → www.festo.com											
Valve function				T32-A			T32-M			M52-R	B52	M52-M	P53		
Normal position				C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾
Pneumatic spring reset method				Yes			No			Yes ⁵⁾	–	No	–		
Mechanical spring reset method				No			Yes			Yes ⁵⁾	–	Yes	Yes		
Stable position				Monostable							Bistable		Monostable		
Port 1, 3, 5				On manifold rail											
Port 2, 4				On manifold rail											
Port 12, 14				On manifold rail											
Standard nominal flow rate M5/M7				[l/min]	160			140			300	300	260	260	
Flow rate on manifold rail M5, front				[l/min]	150			130			220	220	220	200	
Flow rate on manifold rail M7, front				[l/min]	160			140			270	270	240	250	
Flow rate on manifold rail M7, underneath				[l/min]	160			140			300	300	260	260	
Vacuum operation at port 1				No			Only with external pilot air supply								
Design				Piston spool											
Type of mounting				On manifold rail											
Electrical connection				Via sub-base											
Manual override				Choice of non-detenting, covered, non-detenting/detenting or detenting											
Degree of protection to EN 60529		Individual valve		IP67/IP65											
		Valve terminal		IP40, IP67/IP65											

- 1) C=Normally closed.
- 2) U=Normally open/mid-position pressurised.
- 3) E=Normally exhausted.
- 4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.
- 5) Combined reset method.

Operating conditions										
Valve function				T32-A ⁶⁾	T32-M ⁷⁾	M52-R ⁸⁾	B52	M52-M ⁷⁾	P53	
Operating medium				Compressed air to ISO 8573-1:2010 [7:4:4]						
Operating pressure	Internal pilot air supply	[bar]		1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8	
	External pilot air supply	[bar]		1.5 ... 10	–0.9 ... 10	–0.9 ... 10	–0.9 ... 10	–0.9 ... 8	–0.9 ... 10	
Pilot pressure ⁹⁾				1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8	
Ambient temperature			[°C]	–5 ... +60						
Temperature of medium			[°C]	–5 ... +60						

- 6) Pneumatic spring.
- 7) Mechanical spring.
- 8) Pneumatic/mechanical spring.
- 9) Minimum pilot pressure 50% of operating pressure.

Materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR

Valve terminals VTUG with multi-pin plug and fieldbus connection

Order code – Sub-base valve M5/M7

VUVG	-	B	10	-	-	-	Z	-	F	-	1	T1	L
Valve design													Display
Sub-base valve		B											L LED
Size													Electrical connection
10 mm			10									T1	Plug-in
Valve function													Nominal operating voltage
5/2-way valve, single solenoid												1	24 V DC
5/2-way valve, double solenoid													
5/3-way valve, mid-position closed													Pneumatic connection
5/3-way valve, mid-position pressurised													F Flange/sub-base
5/3-way valve, mid-position exhausted													
2x 3/2-way valve, normally closed													Manual override
2x 3/2-way valve, 1x normally open, 1x normally closed													H Non-detenting
2x 3/2-way valve, normally open													S Covered
													T Non-detenting, detenting
													Y Detenting, without accessories
													Pilot air
													Z External
													Reset method
													A Pneumatic spring with T32
													M Mechanical spring with M52 and T32
													R Pneumatic/mechanical spring with M52
													- With B52 and P53

Order example:
VUVG-B10-T32U-MZT-F-1T1L
Universal solenoid valve VUVG - sub-base valve, size 10 mm - 2x 3/2-way valve, normally open - mechanical spring reset method, external pilot air supply, non-detenting/ detenting manual override - pneumatic connection flange/sub-base - nominal operating voltage 24 V DC, plug-in electrical connection, LED display

Ordering – Product options

Configurable product

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Universal valve terminals >

Valve terminals VTUG with multi-pin plug and fieldbus connection

Data sheet – Sub-base valve G1/8

Size 14 mm

Flow rate
440 ... 560 l/min

Voltage
24 V DC



Technical data				Download CAD data → www.festo.com											
Valve function				T32-A			T32-M			M52-A	B52	M52-M	P53		
Normal position				C ¹⁾	U ²⁾	H ⁴⁾	C ¹⁾	U ²⁾	H ⁴⁾	–	–	–	C ¹⁾	U ²⁾	E ³⁾
Pneumatic spring reset method				Yes			No			Yes	–	No	–		
Mechanical spring reset method				No			Yes			No	–	Yes	Yes		
Stable position				Monostable							Bistable		Monostable		
Port 1, 3, 5				On manifold rail											
Port 2, 4				On manifold rail											
Port 12, 14				On manifold rail											
Standard nominal flow rate G18				[l/min]	530			470		550	560	550	510		
Flow rate on manifold rail G18, front				[l/min]	490			440		500	510	500	470		
Flow rate on manifold rail G18, underneath				[l/min]	530			470		550	560	550	510		
Vacuum operation at port 1				No			Only with external pilot air supply								
Design				Piston spool											
Type of mounting				On manifold rail											
Electrical connection				Via sub-base											
Manual override				Choice of non-detenting, covered, non-detenting/detenting or detenting											
Degree of protection to EN 60529		Individual valve		IP67/IP65											
		Valve terminal		IP40, IP67/IP65											

- 1) C=Normally closed.
2) U=Normally open/mid-position pressurised.
3) E=Normally exhausted.
4) H=2x 3/2-way valve in one housing with 1x normally closed and 1x normally open.

Operating conditions								
Valve function		T32-A ⁵⁾	T32-M ⁶⁾	M52-A ⁵⁾	B52	M52-M ⁶⁾	P53	
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]						
Operating pressure	Internal pilot air supply	[bar]	1.5 ... 8	3.5 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
	External pilot air supply	[bar]	1.5 ... 10	–0.9 ... 10	–0.9 ... 10	–0.9 ... 10	–0.9 ... 8	–0.9 ... 10
Pilot pressure ⁷⁾			1.5 ... 8	2 ... 8	2.5 ... 8	1.5 ... 8	3 ... 8	3 ... 8
Ambient temperature		[°C]	–5 ... +60					
Temperature of medium		[°C]	–5 ... +60					

- 5) Pneumatic spring.
6) Mechanical spring.
7) Minimum pilot pressure 50% of operating pressure.

Materials		
Housing		Wrought aluminium alloy
Seals		HNBR, NBR

Valve terminals VTUG with multi-pin plug and fieldbus connection

Order code – Sub-base valve G1/8

VUVG	-	B	14	-	-	-	Z	-	F	-	1	T1	L
Valve design													Display
Sub-base valve		B											L LED
Size													Electrical connection
14 mm			14									T1	Plug-in
Valve function													Nominal operating voltage
5/2-way valve, single solenoid												1	24 V DC
5/2-way valve, double solenoid													
5/3-way valve, mid-position closed													Pneumatic connection
5/3-way valve, mid-position pressurised													F Flange/sub-base
5/3-way valve, mid-position exhausted													
2x 3/2-way valve, normally closed													Manual override
2x 3/2-way valve, normally open													H Non-detenting
2x 3/2-way valve, 1x normally open, 1x normally closed													S Covered
2x 3/2-way valve, normally open													T Non-detenting, detenting
													Y Detenting, without accessories
													Pilot air
													Z External
													Reset method
													A Pneumatic spring with M52 and T32
													M Mechanical spring with M52 and T32
													- With B52 and P53

Order example:
VUVG-B14-M52-AZT-F-1T1L
Universal solenoid valve VUVG - sub-base valve, size 14 mm - 5/2-way valve, single solenoid - pneumatic spring reset method, external pilot air supply, non-detenting/detenting manual override - pneumatic connection flange/sub-base - nominal operating voltage 24 V DC, plug-in electrical connection, LED display

Ordering – Product options

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Universal valve terminals >

Valve terminals VTUG with multi-pin plug and fieldbus connection

Data sheet – Manifold rail VABM

Technical data		Download CAD data → www.festo.com	
Type		VABM-L1-10	VABM-L1-14
Port	12/14	M5	
	82/84	M5	
	2, 4	M5 or M7	G1/8
	1, 3, 5	G1/8	G1/4
Max. no. of valve positions		24	

Materials		Download CAD data → www.festo.com	
Housing		Wrought aluminium alloy	

Data sheet – Multi-pin plug connection VAEM

The following multi-pin plug connections are available for the valve terminal VTUG:

- Sub-D (25-pin)
- Sub-D (44-pin)
- Ribbon cable (26-pin)
- Ribbon cable (50-pin)



Technical data		Download CAD data → www.festo.com	
Type		VAEM-L1-S-M1-25	VAEM-L1-S-M1-44
Number of pins		25-pin	44-pin
Electrical connection		Sub-D plug	
Max. no. of valve positions		24	

Technical data		Download CAD data → www.festo.com	
Type		VAEM-L1-S-M3-26	VAEM-L1-S-M3-50
Number of pins		26-pin	50-pin
Electrical connection		Ribbon connectors	
Max. no. of valve positions		24	

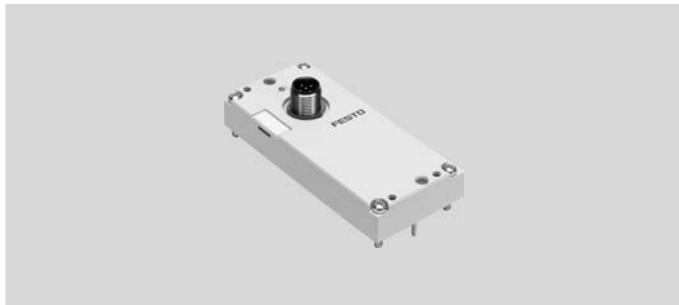
Valve terminals VTUG with multi-pin plug and fieldbus connection

Data sheet – I-Port interface/IO-Link®

Festo-specific, standardised interface for direct connection to the fieldbus by mounting the bus node CTEU or to an IO-Link® master via a cable (in IO-Link® mode).

The following protocols are supported in combination with the associated CTEU node:

- CANopen
- DeviceNet®
- PROFIBUS
- CC-LINK®
- EtherCAT®



Technical data				Download CAD data → www.festo.com
Communication types		IO-Link®		
Electrical connection		• M12 plug, 5-pin • A-coded • Metal thread for screening		
Baud rate	COM3	[kbps]	230.4	
	COM2	[kbps]	38.4	
Max. no. of solenoid coils	VAEM-L1-S-8-PT		16	
	VAEM-L1-S-16-PT		32	
	VAEM-L1-S-24-PT		48	
Max. no. of valve positions	VAEM-L1-S-8-PT		8	
	VAEM-L1-S-16-PT		16	
	VAEM-L1-S-24-PT		24	
Ambient temperature		[°C]	–5 ... +50	

Data sheet – Electrical connection box CAPC

Area of application

- M12 connection technology (two interfaces)
- Enables the installation of valve terminals or other devices over a distance of 20 metres
- Accessory CAFM enables the electrical connection box to be installed on an H-rail

Function

The electrical connection box CAPC enables the decentralised installation of bus nodes CTEU on a valve terminal or input modules with I-Port interface.



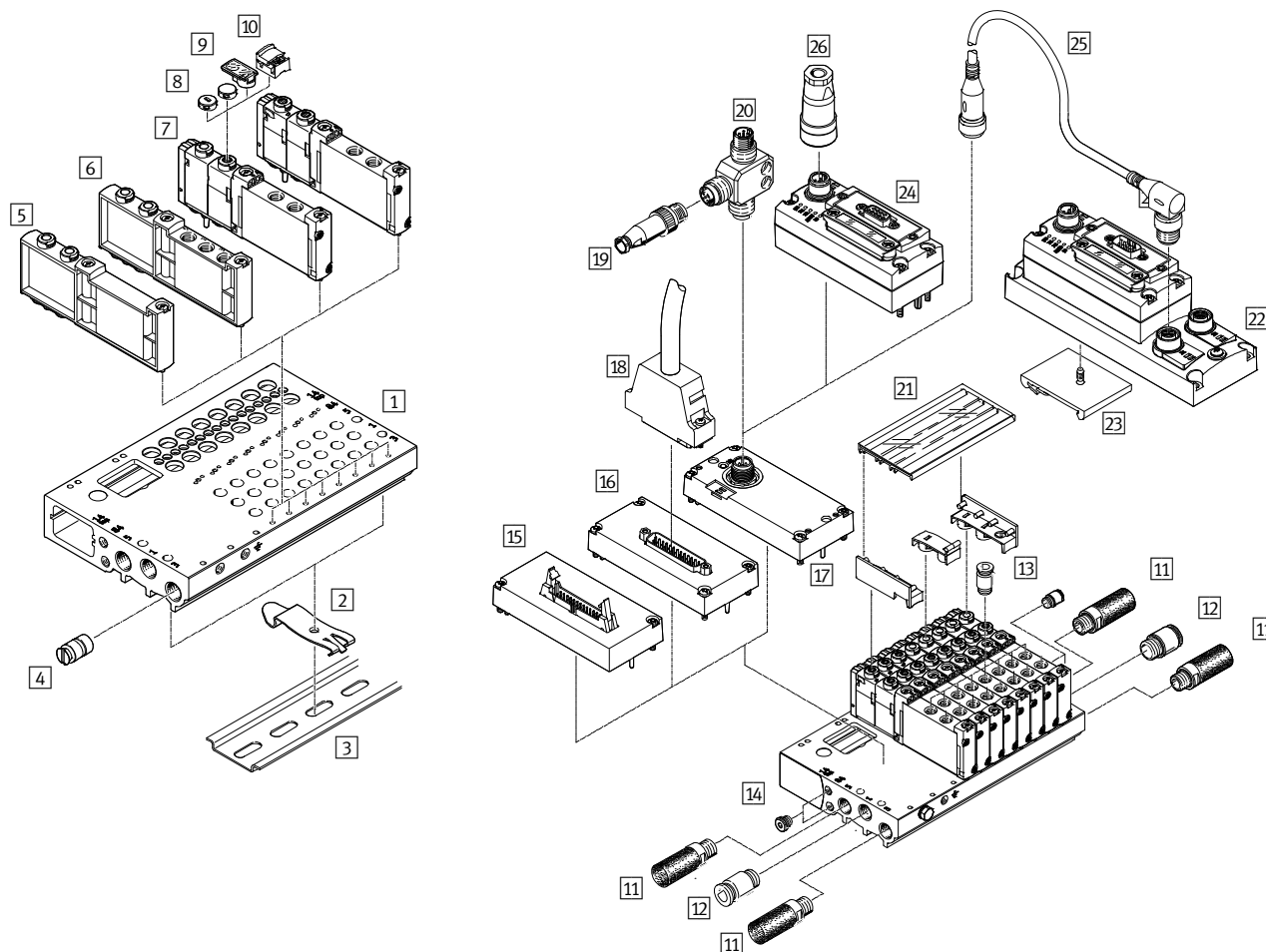
Technical data		
Type		CAPC-F1-E-M12
Dimensions W x L x H	[mm]	50 x 148 x 28
Fieldbus interface		2x socket M12, 5-pin, A-coded
Operating voltage range	[V DC]	18 ... 30
Max. power supply	[A]	2
Nominal operating voltage	[V DC]	24
Cable length	[m]	20

Pin allocation – Power supply/IO-Link® interfaces

	Pin	Designation	Function
	1	24V _{EL} /SEN	Operating voltage supply (electronics, sensors/inputs)
	2	24V _{VAL} /OUT	Load voltage supply (valves/outputs)
	3	0V _{EL} /SEN	Operating voltage supply (electronics, sensors/inputs)
	4	C/Q	Data communication
	5	0V _{VAL} /OUT	Load voltage supply (valves/outputs)
		Housing, FE	Functional earth

Valve terminals VTUG with multi-pin plug and fieldbus connection

Accessories



Accessories	→ Page/online
1 Manifold rail VABM-L1, for 4 to 10, 12, 14, 16, 20 and 24 valve positions	1086
2 H-rail mounting VAME-T-M4, 2 pieces for mounting the valve terminal on an H-rail	1088
3 H-rail NRH-35-2000, for mounting the valve terminal	1088
4 Separator VABD, for creating pressure zones	1088
5 Blanking plate VABB-L1, for covering a vacant position	1088
6 Supply plate VABF-L1, for air supply port 1 and port 3 and 5	1088
7 Solenoid valve VUVG, semi in-line valve	1076
8 Cover cap VMPA-HB, for manual override	1088
9 Inscription label holder ASLR-D-L1, for inscription label and cover for the mounting screw/manual override	1088
10 Cover VAMC, for manual override	1088
11 Silencer UC, for port 3 and 5	1088
12 Push-in fitting QS, for air supply port 1	1088
13 Push-in fitting QS, for port 2 and 4	1088
14 Blanking plug B, for internal/external pilot air	1088
15 Electrical interface VAEM-L1-S-M3, ribbon cable	1088
16 Electrical interface VAEM-L1-S-M1, Sub-D	1088
17 I-Port interface VAEM-L1-S	1088
18 Connecting cable NEBV, Sub-D plug	1089
19 Plug SEA-M12-5GS-PG7, for T-adaptor FB-TA	1089
20 T-adaptor FB-TA-M12-5POL, for IO-Link® and load voltage supply	1089
21 Inscription label holder ASCF-H-L1, for identifying the valves	1089
22 Electrical connection box CAPC-F1-E-M12, for connecting a second device with I-Port interface	1090
23 H-rail mounting CAFM-F1-H, for electrical connection box CAPC	1090
24 Bus node CTEU	1090
25 Connecting cable NEBU	1090
26 Power supply socket NTSD, power supply for bus node CTEU	ntsd

Valve terminals VTUG with multi-pin plug and fieldbus connection

Accessories – Ordering data

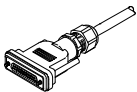
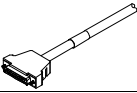
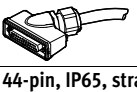
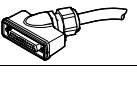
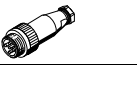
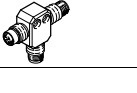
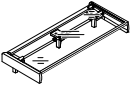
	Part no.	Type
2 H-rail mounting		
	★ 569998	VAME-T-M4
3 H-rail		
	35430	NRH-35-2000
4 Separator		
	10 mm	569994 VABD-6-B
	10 mm	569995 VABD-8-B
	14 mm	569996 VABD-10-B
5 Cover plate		
	10 mm	573422 VABB-L1-10-T
	14 mm	573488 VABB-L1-14-T
6 Supply plate		
	10 mm	573924 VABF-L1-10-P3A4-M7-T1
	14 mm	573925 VABF-L1-14-P3A4-G18-T1
8 Cover cap for manual override		
	Covered	540898 VMPA-HBV-B
	Non-detenting	540897 VMPA-HBT-B
	Detenting (without accessories)	8002234 VAMC-L1-CD
9 Inscription label holder		
	10 pieces	570818 ASLR-D-L1
11 Silencer		Data sheets → Page 1661
	M5	★ 1205858 AMTE-M-LH-M5
	M7	161418 UC-M7
	G1/8	161419 UC-1/8
	G1/4	165004 UC-1/4
12/13 Push-in fitting, straight		Data sheets → Page 1443
	M5 thread	
	3 mm	★ 153313 QSM-M5-3-I
	4 mm	★ 153315 QSM-M5-4-I
	M7 thread	
	4 mm	★ 153319 QSM-M7-4-I
	G1/8 thread	
	4 mm	★ 186106 QS-G1/8-4-I
	6 mm	★ 186107 QS-G1/8-6-I
	8 mm	★ 186109 QS-G1/8-8-I
	10 mm	★ 190647 QS-1/8-10-I
	G1/4 thread	
	8 mm	★ 153016 QS-1/4-8-I
	10 mm	★ 153018 QS-1/4-8-I
	12 mm	★ 190649 QS-1/4-12-I

	Part no.	Type
12/13 Push-in fitting, angled		Data sheets → Page 1443
	M5 thread	
	∅ 3 mm	★ 153331 QSML-M5-3
	∅ 4 mm	★ 153333 QSML-M5-4
	M7 thread	
	∅ 4 mm	★ 186352 QSML-M7-4
	G1/8 thread	
	∅ 6 mm	★ 186117 QSL-G1/8-6
	∅ 8 mm	★ 186119 QSL-G1/8-8
Angled, long		
	M5 thread	
	∅ 3 mm	130838 QSMLL-M5-3
	∅ 4 mm	153339 QSMLL-M5-4
	M7 thread	
	∅ 4 mm	186354 QSMLL-M7-4
	G1/8 thread	
	∅ 6 mm	186128 QSLL-G1/8-6
	∅ 8 mm	186130 QSLL-G1/8-8
14 Blanking plug		Data sheets online: → b-1
	M5	★ 174308 B-M5-B
	M7	★ 174309 B-M7
	G1/8	★ 3568 B-1/8
	G1/4	★ 3569 B-1/4
Electrical interface		
15 Ribbon connector		
	26-pin	573452 VAEM-L1-S-M3-26
	50-pin	573451 VAEM-L1-S-M3-50
16 Sub-D		
	25-pin	573445 VAEM-L1-S-M1-25
		573447 VAEM-L1-S-M1-25V1
		573448 VAEM-L1-S-M1-25V2
		573449 VAEM-L1-S-M1-25V3
		573450 VAEM-L1-S-M1-25V4
	44-pin	573446 VAEM-L1-S-M1-44
17 I-Port interface, outlet on top		
	8 VP ¹⁾	573384 VAEM-L1-S-8-PT
	16 VP ²⁾	573939 VAEM-L1-S-16-PT
	24 VP ³⁾	573940 VAEM-L1-S-24-PT
I-Port interface, outlet on side		
	8 VP ¹⁾	574207 VAEM-L1-S-8-PTL
	16 VP ²⁾	574208 VAEM-L1-S-16-PTL
	24 VP ³⁾	574209 VAEM-L1-S-24-PTL

- 1) Actuation of up to 8 double solenoid valve positions.
- 2) Actuation of up to 16 double solenoid valve positions.
- 3) Actuation of up to 24 double solenoid valve positions.

Valve terminals VTUG with multi-pin plug and fieldbus connection

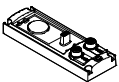
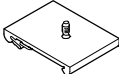
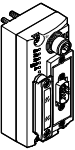
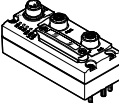
Accessories – Ordering data

	Part no.	Type
18 Connecting cable for multi-pin plug connection, 25-pin, IP40, straight Data sheets online: → nebv		
	2.5 m	575417 NEBV-S1G25-K-2.5-N-LE25-S6
	5 m	575418 NEBV-S1G25-K-5-N-LE25-S6
44-pin, IP40, straight Data sheets online: → nebv		
	2.5 m	575113 NEBV-S1G44-K-2.5-N-LE44-S6
	5 m	575114 NEBV-S1G44-K-5-N-LE44-S6
	10 m	575115 NEBV-S1G44-K-10-N-LE44-S6
25-pin, IP65, angled Data sheets online: → nebv		
	2.5 m	575423 NEBV-S1WA25-K-2.5-N-LE25-S9
	5 m	575424 NEBV-S1WA25-K-5-N-LE25-S9
44-pin, IP65, straight		
	2.5 m	575420 NEBV-S1WA44-K-2.5-N-LE44-S9
	5 m	575421 NEBV-S1WA44-K-5-N-LE44-S9
19 Straight plug, for I-Port/IO-Link®, 5-pin Data sheets online: → sea		
	M12	175487 SEA-M12-5GS-PG7
20 T-adapter, for IO-Link® and load voltage supply		
	M12, 5-pin	171175 FB-TA-M12-5POL
21 Inscription label holder for valve terminal		
	For valve size 10 mm	
	For 4 valve positions	573453 ASCF-H-L1-10-4V
	For 5 valve positions	573454 ASCF-H-L1-10-5V
	For 6 valve positions	573455 ASCF-H-L1-10-6V
	For 7 valve positions	573456 ASCF-H-L1-10-7V
	For 8 valve positions	573457 ASCF-H-L1-10-8V
	For 9 valve positions	573458 ASCF-H-L1-10-9V
	For 10 valve positions	573459 ASCF-H-L1-10-10V
	For 12 valve positions	573460 ASCF-H-L1-10-12V
	For 16 valve positions	573461 ASCF-H-L1-10-16V
	For 20 valve positions	573462 ASCF-H-L1-10-20V
	For 24 valve positions	573463 ASCF-H-L1-10-24V
	For valve size 14 mm	
	For 4 valve positions	573511 ASCF-H-L1-14-4V
	For 5 valve positions	573512 ASCF-H-L1-14-5V
	For 6 valve positions	573513 ASCF-H-L1-14-6V
	For 7 valve positions	573514 ASCF-H-L1-14-7V
	For 8 valve positions	573515 ASCF-H-L1-14-8V
	For 9 valve positions	573516 ASCF-H-L1-14-9V
	For 10 valve positions	573518 ASCF-H-L1-14-10V
	For 12 valve positions	573519 ASCF-H-L1-14-12V
	For 16 valve positions	573520 ASCF-H-L1-14-16V
	For 20 valve positions	573521 ASCF-H-L1-14-20V
	For 24 valve positions	573522 ASCF-H-L1-14-24V

Universal valve terminals >

Valve terminals VTUG with multi-pin plug and fieldbus connection

Accessories – Ordering data

		Part no.	Type
22 Electrical connection box		Data sheets → Page 1085	
	–	570042	CAPC-F1-E-M12
23 H-rail mounting			
	For electrical connection box CAPC	570043	CAFM-F1-H
24 Bus node		Data sheets online: → cteu	
	CANopen	570038	CTEU-CO
	CC-LINK®	1544198	CTEU-CC
	PROFIBUS	570040	CTEU-PB
	DeviceNet®	570039	CTEU-DN
	EtherCAT®	572556	CTEU-EC
25 Connecting cable for I-Port interface/IO-Link®		Data sheets → Page 1543	
	5 m	574321	NEBU-M12G5-E-5-Q8N-M12G5
	7.5 m	574322	NEBU-M12G5-E-7.5-Q8N-M12G5
	10 m	574323	NEBU-M12G5-E-10-Q8N-M12G5



Affordable and sturdy

- + Armature tube for maximum flexibility when selecting the supply voltage
- + Universal usability thanks to a wide choice of mounting options
- + For general use thanks to a comprehensive range of valve functions

Universal valve terminals ›

Solenoid valves/valve manifolds

VUVS ★ /VTUS

Universal valve terminals >

Solenoid valves/valve manifolds

VUVS ★ /VTUS



Overview, configuration and ordering

→ www.festo.com/catalogue/vuvs



Additional information, support and user documentation

→ www.festo.com/sp/vuvs



Quick ordering of basic designs

→ page 1105



- + Connection G1/8, G1/4, G3/8, 1/8 NPT, 1/4 NPT, 3/8 NPT
- + Flow rates 600 ... 2400 l/min
- + Operating voltage 12, 24 V DC; 24, 110, 120, 230, 240 V AC
- + In-line valves
- + Electrically actuated, piloted
- + Metal manifold rail
- + Metal manifold block

Solenoid valves VUVS /valve manifold VTUS

Product range overview

Type	Valve function		Version			→ Page/online		
			VUVS-LK	VUVS-LT	VUVS-L	Size		
						20	25	30
VUVS-M32C	3/2-way valve, normally closed	Pneumatic spring	■	–	■	1097	1099	1101
		Mechanical spring	–	■	■			
VUVS-M32U	3/2-way valve, normally open	Pneumatic spring	–	–	■			
		Mechanical spring	–	■	■			
VUVS-T32C	3/2-way valve, normally open	Mechanical spring	–	■	–	vtus	vtus	–
VUVS-T32U	3/2-way valve, normally open	Mechanical spring	–	■	–			
VUVS-T32H	3/2-way valve, normally open	Mechanical spring	–	■	–			
VUVS-M52	5/2-way valve, single solenoid	Pneumatic spring	■	–	■	1097	1099	1101
		Mechanical spring	–	■	■			
VUVS-B52	5/2-way valve, double solenoid	–	■	–	■			
VUVS-P53C	5/3-way valve, mid-position closed	Mechanical spring	–	■	■			
VUVS-P53U	5/3-way valve, mid-position pressurised	Mechanical spring	–	–	■			
VUVS-P53E	5/3-way valve, mid-position exhausted	Mechanical spring	–	–	■			

Type	Version		Version			→ Page/online		
			VUVS-LK	VUVS-LT	VUVS-L	Size		
						20	25	30
VABM-E	Standard manifold block	For 3/2-way valves	–	■	■	1106	1106	1106
		For 5/2- and 5/3-way valves	–	■	■			
VABM-EEE	Manifold block extension module	For 3/2-way valves	–	■	■			
		For 5/2- and 5/3-way valves	–	■	■			
VABM-S	Compact manifold block	For 3/2-way valves	■	■	■			
		For 5/2- and 5/3-way valves	■	■	■			
VABM	Common supply manifold	For mounting on both sides	■	■	■			
		For mounting on one side	■	■	■			

Note

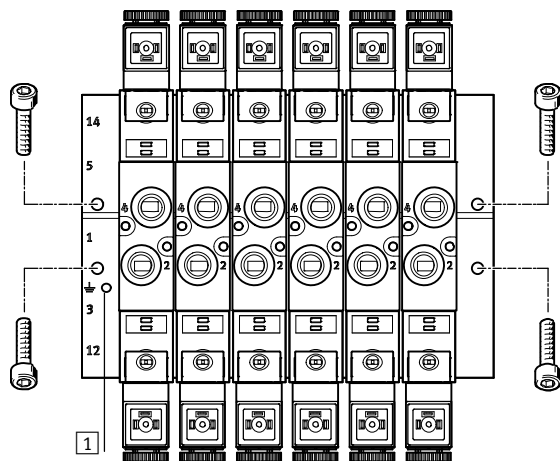
Valve manifolds can be ordered quickly and easily online.
The convenient product configurator can be found at:

→ www.festo.com/catalogue/vtus

Key features

Mounting valve manifold VTUS

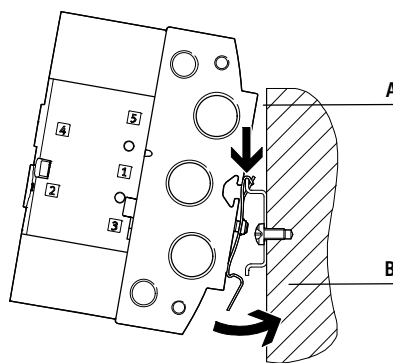
Wall mounting



Sturdy wall mounting of the manifold block using four through-holes.

1 Earth terminal block

H-rail mounting



The H-rail mounting VAME-T-M consists of two mounting clips. These are screwed to the manifold block on the left and right.

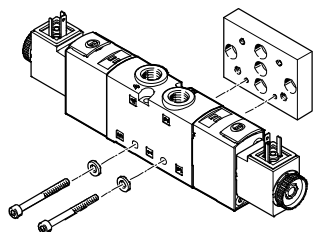
The valve manifold VTUS is then lowered onto the H-rail from above (arrow A) and clipped into the H-rail at the bottom (arrow B).

Note

- Note the max. tightening torque of the screws for H-rail mounting
- Only horizontal H-rail mounting is permissible
- Mounting possible on H-rail to EN 60715
- Vibration/shock loads are not permissible with H-rail mounting
- Further information on assembly
→ Assembly instructions for H-rail mounting VAME-T-M

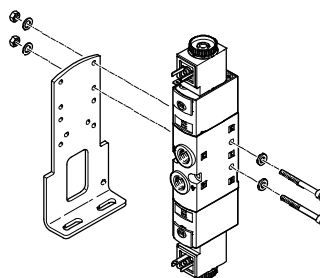
Mounting individual valve VUVS

Wall mounting



For mounting individual valves on a flat surface, e.g. aluminium profile systems. The solenoid valves are provided with two through-holes for attaching to the wall mounting VAME-B10-20-W.

The relevant screw set is included when the wall mounting VAME-B10-20-W is ordered.



For mounting individual valves on a flat surface, e.g. aluminium profile systems. The solenoid valves are provided with two through-holes for attaching to the foot mounting VAME-B10-...-.

The relevant screw set is included when the foot mounting is ordered.

Universal valve terminals >

Solenoid valves VUVS ★ /valve manifold VTUS

Data sheet

Flow rate
Size 20: up to 700 l/min
Size 25: up to 1300 l/min
Size 30: up to 2300 l/min



Technical data				
Size		20	25	30
Valve manifold configuration		Fixed grid		
Valve width	[mm]	21	26.5	31
Valve design		Piston spool		
Electrical actuation		Individual connection		
Reset method for valves		Pneumatic or mechanical spring		
Pilot air supply		Internal or external		
Flow direction		Reversible with restrictions		
Suitability for vacuum		Yes, with external pilot air supply		
Max. no. of valve positions		16 (a maximum of 18 valve positions with extension for standard manifold block)		
Max. no. of pressure zones		9		
Nominal operating voltage	[V DC]	12, 24		
	[V AC]	24, 110, 120, 230, 240		
Degree of protection		IP65/IP67 with plug socket		
		To IEC 60529		
Permissible voltage fluctuations	[%]	±10		

09

Valve terminals

Data sheet – Solenoid valve size 20

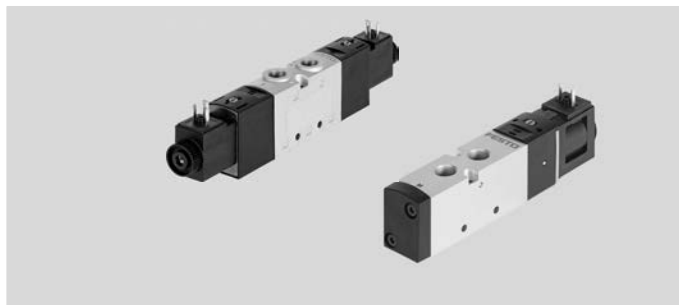
Flow rate

VUVS-LK: up to 550 l/min

VUVS-L: up to 700 l/min (±20%)

Valve width

21 mm



Technical data		VUVS-LK	VUVS-L
Valve width	[mm]	21	21
Manual override		Non-detenting, detenting	Non-detenting, detenting
Sealing principle		Soft	Soft
Type of mounting		Optionally via through-hole or on manifold rail	
Pneumatic port			
1, 2, 4, 3, 5		G1/8	G1/8
Pilot air port 12/14		–	M5
Pilot exhaust air port 82/84		–	M5

Technical data – 3/2-way valves		VUVS-LK	VUVS-L	
Order code for valves		M32C	M32C	M32U
Valve function		3/2-way valve		
Normal position		Closed	Closed	Open
Stable position		Monostable	Monostable	Monostable
Reset method		Pneumatic spring	Pneumatic spring	Mechanical spring
Switching time	On	16	14	14
	Off	20	21	15
			32	21
				28

Technical data – 5/2-way valves		VUVS-LK		VUVS-L	
Order code for valves		M52	B52	M52	B52
Valve function		5/2-way valve		5/2-way valve	
Normal position		–	–	–	–
Stable position		Monostable	Bistable	Monostable	Bistable
Reset method		Pneumatic spring	–	Pneumatic spring	Mechanical spring
Switching time	On	17	–	20	12
	Off	22	–	29	44
	Change-over	–	10	–	10

Technical data – 5/3-way valves		VUVS-L	
Order code for valves		P53C	P53U
Valve function		5/3-way valve	
Normal position/mid-position		Closed	Pressurised
Stable position		Monostable	Exhausted
Reset method		Mechanical spring	
Switching time	On	13	13
	Off	42	42
	Change-over	24	21
			24

Solenoid valves VUVS ★

Data sheet – Solenoid valve size 20

Operating conditions		VUVS-LK			VUVS-L			
Order code for valves		M32	M52	B52	M32	M52	B52	P53
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]						
Pilot medium		Compressed air to ISO 8573-1:2010 [7:4:4]						
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)						
Operating pressure [bar] with internal pilot air supply		1.5 ... 8			2.5 ... 10		1.5 ... 10	2.5 ... 10
Operating pressure [bar] with external pilot air supply		–			–0.9 ... +10			
Pilot pressure [bar]		–			2.5 ... 10		1.5 ... 10	2.5 ... 10
Ambient temperature [°C]		–5 ... +50			–10 ... +60			
Temperature of medium [°C]		–5 ... +50			–10 ... +60			

Electrical data		VUVS-LK		VUVS-L	
Electrical connection		With solenoid coil, plug type C		With solenoid coil, plug type C	
Operating voltage [V DC]		24		24	
Permissible voltage fluctuations [%]		±10		±10	
Power [W]		2.6		2.6	
Duty cycle [%]		100		100	
Degree of protection to EN 60529		IP65 with plug socket			
				Without solenoid coil, via solenoid coil → Page 1116	

Materials		VUVS-LK		VUVS-L	
Housing		Wrought aluminium alloy		Die-cast aluminium	
Seals		HNBR, NBR		HNBR, NBR	
Piston spool		Wrought aluminium alloy		Wrought aluminium alloy (P53 types: high-alloy stainless steel)	
Screws		–		Galvanised steel	

Data sheet – Solenoid valve size 25

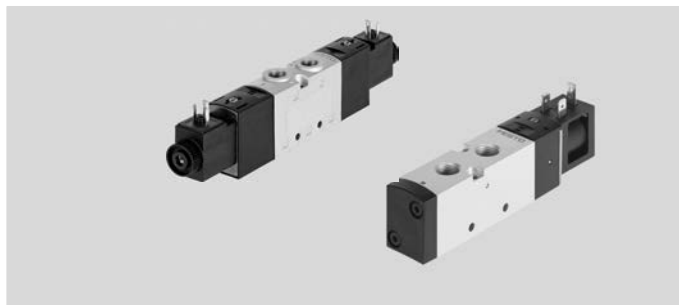
Flow rate

VUVS-LK: up to 1000 l/min

VUVS-L: up to 1300 l/min (±20%)

Valve width

26.5 mm



Technical data		VUVS-LK	VUVS-L
Valve width	[mm]	26.5	
Manual override		Non-detenting, detenting	
Sealing principle		Soft	
Type of mounting		Optionally via through-hole or on manifold rail	
Pneumatic port			
1, 2, 4, 3, 5		G1/4	G1/4
Pilot air port 12/14		–	M5
Pilot exhaust air port 82/84		–	M5

Download CAD data → www.festo.com

Technical data – 3/2-way valves		VUVS-LK	VUVS-L
Order code for valves		M32C	M32C M32U
Valve function		3/2-way valve	
Normal position		Closed	Closed Open
Stable position		Monostable	Monostable Monostable
Reset method		Pneumatic spring	Pneumatic spring Mechanical spring Pneumatic spring Mechanical spring
Switching time	On	16	13 11 12 11
	Off	20	26 40 26 39

Technical data – 5/2-way valves		VUVS-LK	VUVS-L
Order code for valves		M52 B52	M52 B52
Valve function		5/2-way valve	
Stable position		Monostable Bistable	Monostable Bistable
Reset method		Pneumatic spring –	Pneumatic spring Mechanical spring –
Switching time	On	20 –	19 12 –
	Off	22 –	35 47 –
	Change-over	– 12	– – 11

Technical data – 5/3-way valves		VUVS-L
Order code for valves		P53C P53U P53E
Valve function		5/3-way valve
Normal position/mid-position		Closed Pressurised Exhausted
Stable position		Monostable
Reset method		Mechanical spring
Switching time	On	13 14 14
	Off	42 48 48
	Change-over	26 25 25

Data sheet – Solenoid valve size 30

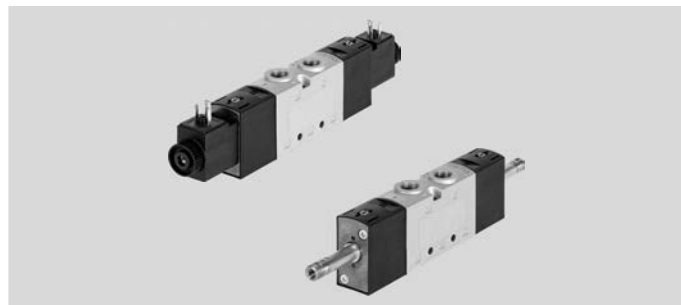
Flow rate

VUVS-LK: up to 1600 l/min

VUVS-L: up to 2300 l/min (±20%)

Valve width

31 mm



Technical data		VUVS-LK	VUVS-L
Valve width	[mm]	31	
Manual override		Non-detenting, detenting	
Type of mounting		Optionally via through-hole or on manifold rail	
Pneumatic port			
1, 2, 4, 3, 5		G3/8	G3/8
Pilot air port 12/14		–	G1/8
Pilot exhaust air port 82/84		–	M5

Technical data – 3/2-way valves		VUVS-LK	VUVS-L
Order code for valves		M32C	M32C M32U
Valve function		3/2-way valve	
Normal position		Closed	Closed Open
Stable position		Monostable	Monostable Monostable
Reset method		Pneumatic spring	Pneumatic spring Mechanical spring Pneumatic spring Mechanical spring
Switching time	On	16	19 16 19 15
	Off	20	36 58 37 57

Technical data – 5/2-way valves		VUVS-LK	VUVS-L
Order code for valves		M52 B52	M52 B52
Valve function		5/2-way valve	
Stable position		Monostable Bistable	Monostable Bistable
Reset method		Pneumatic spring –	Pneumatic spring Mechanical spring –
Switching time	On	16 –	24 17 –
	Off	21 –	49 62 –
	Change-over	– 10	– – 13

Technical data – 5/3-way valves		VUVS-L
Order code for valves		P53C P53U P53E
Valve function		5/3-way valve
Normal position/mid-position		Closed Pressurised Exhausted
Stable position		Monostable
Reset method		Mechanical spring
Switching time	On	17 18 20
	Off	76 75 74
	Change-over	39 31 36

Solenoid valves VUVS

Data sheet – Solenoid valve size 30

Operating conditions						
	VUVS-LK		VUVS-L			
Order code for valves	M32	M52	M32	M52	B52	P53
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure [bar] with internal pilot air supply	1.5 ... 8		2.5 ... 10		1.5 ... 10	2.5 ... 10
Operating pressure [bar] with external pilot air supply	–		–0.9 ... +10			
Pilot pressure [bar]	–		2.5 ... 10		1.5 ... 10	2.5 ... 10
Ambient temperature [°C]	–5 ... +50		–10 ... +60			
Temperature of medium [°C]	–5 ... +50		–10 ... +60			

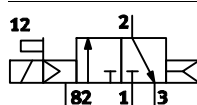
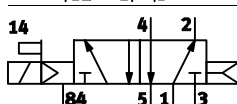
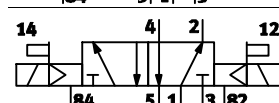
Electrical data			
		VUVS-LK	VUVS-L
Electrical connection		With solenoid coil, plug type B	With solenoid coil, plug type C, plug type B
Operating voltage	[V DC]	24	24
Permissible voltage fluctuations	[%]	10	10
Power	[W]	3.3	3.3
Duty cycle	[%]	100	100
Degree of protection to EN 60529		IP65 with plug socket	IP65 with plug socket
		Without solenoid coil, via solenoid coil → Page 1116	

Materials		
		VUVS-LK VUVS-L
Housing		Wrought aluminium alloy Die-cast aluminium
Seals		HNBR, NBR HNBR, NBR
Piston spool		Wrought aluminium alloy Wrought aluminium alloy
Piston spool		– Galvanised steel

Universal valve terminals >

Solenoid valves VUVS ★ /valve manifold VTUS

Order code – Solenoid valve

VUVS	-	L	K	-	-	-	D	-	-	-	1	-	S
Valve design In-line valve L							Version S Core features						
Design principle Piston spool with sealing ring K							Degree of protection for electrics - Standard						
Size 21 mm 20 26.5 mm 25 31 mm 30							Electrical connection C1 ²⁾ Plug pattern type C, to EN 175301 B2 ¹⁾ Plug pattern type B, industry standard						
Valve functions  M32C  M52  B52							Nominal operating voltage 1 24 V DC						
Reset method Pneumatic spring for M52 and M32 A For B52 -							Valve pilot control interface - Standard						
Pilot air supply Internal -							Exhausting - Without fitting						
							Pneumatic connection G18 G1/8 G14 G1/4 G38 G3/8						
							Manual override D Non-detenting, detenting without accessories						

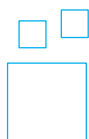
- 1) Not in combination with size 20
- 2) Only in combination with size 20

Order example:

VUVS-LK20-M32C-AD-G18-1C1-S

Universal solenoid valve VUVS in-line valve, piston spool with sealing ring, width 20 (valve width 21 mm) - 3/2-way valve, single solenoid, normally closed - pneumatic spring reset method, internal pilot air supply, manual override non-detenting/detenting without accessories - pneumatic connection G1/8 - without fitting - nominal operating voltage 24 V DC, plug pattern type C, to EN 175301, version: core features

Ordering – Product options



Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

Solenoid valves VUVS /valve manifold VTUS

 Quick ordering¹⁾

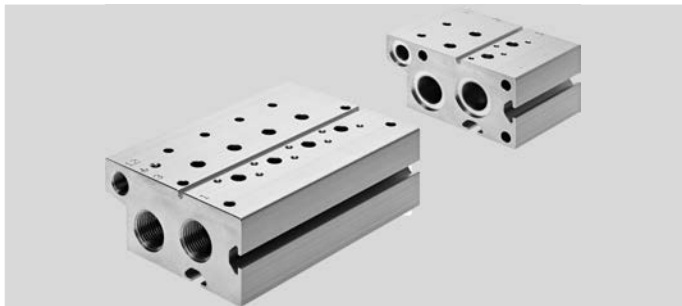
	Part no.	Type		Part no.	Type
3/2-way valve, single solenoid	8043213	VUVS-LK20-M32C-AD-G18-1C1-S	5/2-way valve, double solenoid	8043215	VUVS-LK20-B52-D-G18-1C1-S
	8043217	VUVS-LK25-M32C-AD-G14-1B2-S		8043219	VUVS-LK25-B52-D-G14-1B2-S
	8049880	VUVS-LK30-M32C-AD-G38-1B2-S		8049882	VUVS-LK30-B52-D-G38-1B2-S
	575269	VUVS-L20-M32C-AD-G18-F7-1C1		575265	VUVS-L20-B52-D-G18-F7-1C1
	575274	VUVS-L20-M32C-MD-G18-F7-1C1		575518	VUVS-L25-B52-D-G14-F8-1C1
	575475	VUVS-L25-M32C-AD-G14-F8-1C1		575611	VUVS-L30-B52-D-G38-F8-1C1
	575477	VUVS-L25-M32C-MD-G14-F8-1C1	5/3-way valve, single solenoid	575268	VUVS-L20-P53C-MD-G18-F7-1C1
	575568	VUVS-L30-M32C-AD-G38-F8-1C1		575525	VUVS-L25-P53C-MD-G14-F8-1C1
	575570	VUVS-L30-M32C-MD-G38-F8-1C1		575618	VUVS-L30-P53C-MD-G38-F8-1C1
5/2-way valve, single solenoid	8043214	VUVS-LK20-M52-AD-G18-1C1-S			
	8043218	VUVS-LK25-M52-AD-G14-1B2-S			
	8049881	VUVS-LK30-M52-AD-G38-1B2-S			
	575263	VUVS-L20-M52-AD-G18-F7-1C1			
	575264	VUVS-L20-M52-MD-G18-F7-1C1			
	575503	VUVS-L25-M52-AD-G14-F8-1C1			
	575511	VUVS-L25-M52-MD-G14-F8-1C1			
	575596	VUVS-L30-M52-AD-G38-F8-1C1			
	575604	VUVS-L30-M52-MD-G38-F8-1C1			

1) All products in this table are easy to select and quick to order.

Solenoid valves VUVS
/valve manifold VTUS

Data sheet – Manifold block

Flow rate
up to 2300 l/min



Technical data – Size 20								
	Manifold block standard		Extension module for standard manifold block		Manifold block compact		Common supply manifold on both sides on one side	
For valve function	3/2	5/2, 5/3	3/2	5/2, 5/3	3/2	5/2, 5/3	3/2, 5/2, 5/3	
Grid dimension [mm]	22							
Type of mounting	Via through-hole						Via mounting bracket	
Max. number of valve positions	10	10	2	2	10		10	4
Port 1	G3/8	G3/8	G3/8	G3/8	G1/4	G1/4	G3/8	G3/8
Port 3	G3/8	G3/8	G3/8	G3/8	G1/4	G1/4	–	–
Port 5	–	G3/8	–	G3/8	–	G1/4	–	–
Port 12	G1/8	G1/8	G1/8	G1/8	–	–	–	–
Port 14	–	G1/8	–	G1/8	–	–	–	–

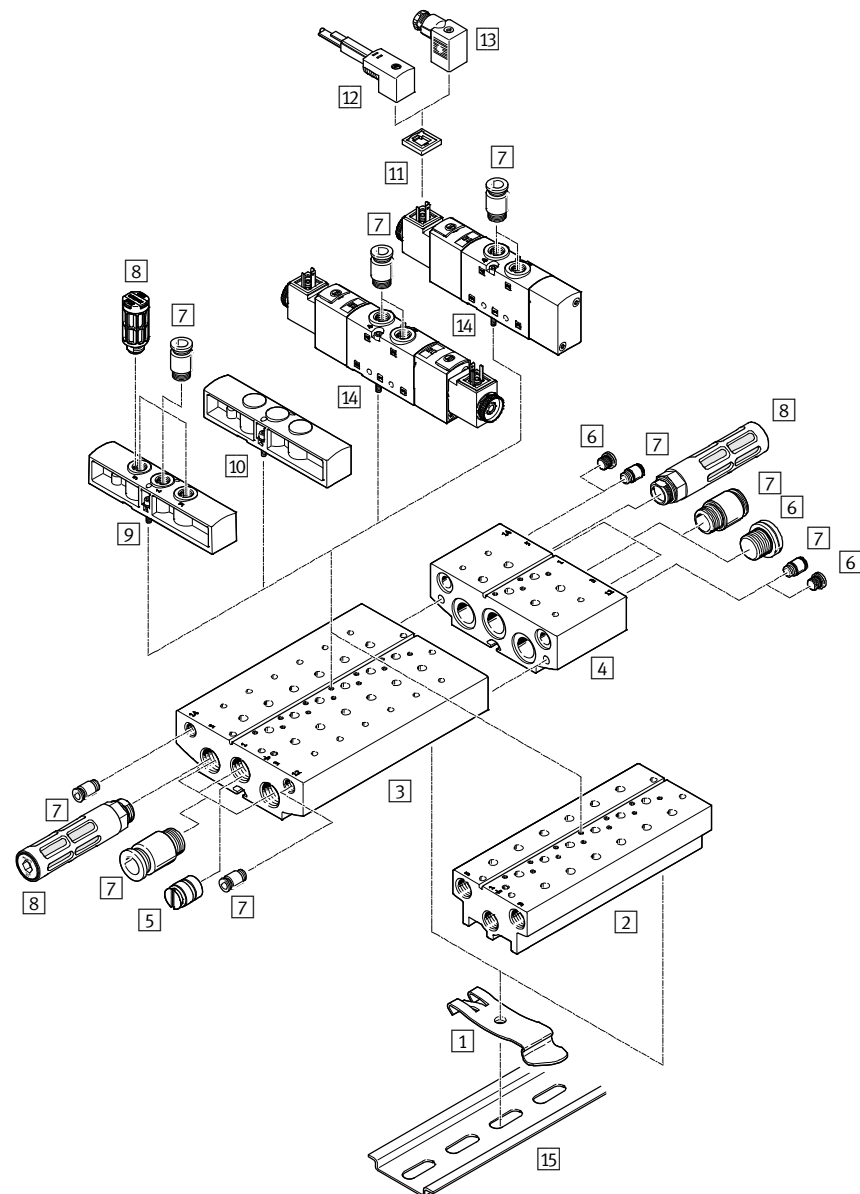
Technical data – Size 25								
	Manifold block standard		Extension module for standard manifold block		Manifold block compact		Common supply manifold on both sides on one side	
For valve function	3/2	5/2, 5/3	3/2	5/2, 5/3	3/2	5/2, 5/3	3/2, 5/2, 5/3	
Grid dimension [mm]	27.5							
Type of mounting	Via through-hole						Via mounting bracket	
Max. number of valve positions	10	10	2	2	10		10	4
Port 1	G1/2	G1/2	G1/2	G1/2	G3/8	G3/8	G1/2	G1/2
Port 3	G1/2	G1/2	G1/2	G1/2	G3/8	G3/8	–	–
Port 5	–	G1/2	–	G1/2	–	G3/8	–	–
Port 12	G1/8	G1/8	G1/8	G1/8	–	–	–	–
Port 14	–	G1/8	–	G1/8	–	–	–	–

Technical data – Size 30								
	Manifold block standard		Extension module for standard manifold block		Manifold block compact		Common supply manifold on both sides on one side	
For valve function	3/2	5/2, 5/3	3/2	5/2, 5/3	3/2	5/2, 5/3	3/2, 5/2, 5/3	
Grid dimension [mm]	32							
Type of mounting	Via through-hole						Via mounting bracket	
Max. number of valve positions	10	10	2	2	10		10	4
Port 1	G3/4	G3/4	G3/4	G3/4	G1/2	G1/2	G3/4	G3/4
Port 3	G3/4	G3/4	G3/4	G3/4	G1/2	G1/2	–	–
Port 5	–	G3/4	–	G3/4	–	G1/2	–	–
Port 12	G1/8	G1/8	G1/8	G1/8	–	–	–	–
Port 14	–	G1/8	–	G1/8	–	–	–	–

Materials	
Manifold block	Wrought aluminium alloy

Solenoid valves VUVS ★ /valve manifold VTUS

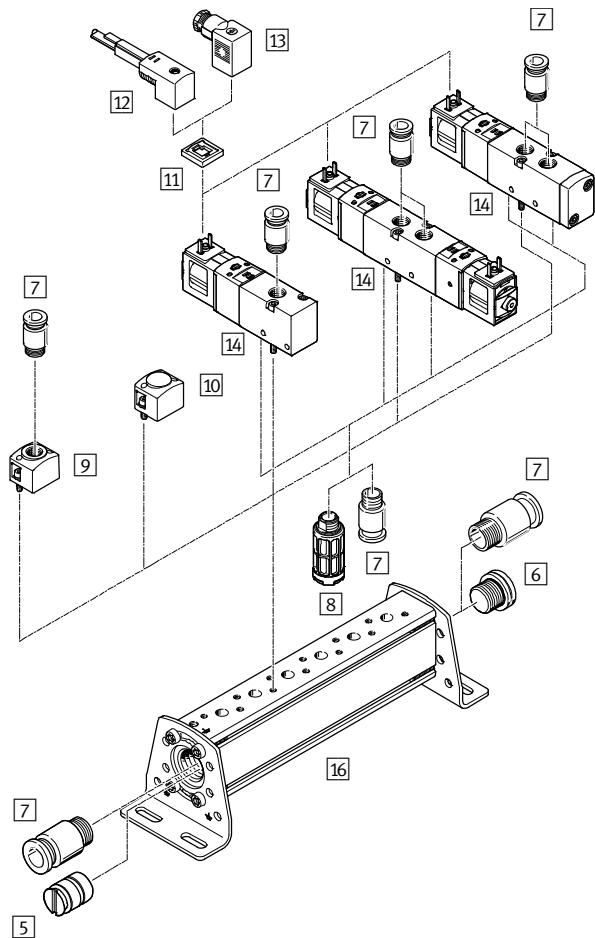
Accessories – Manifold assembly solenoid valve on manifold block



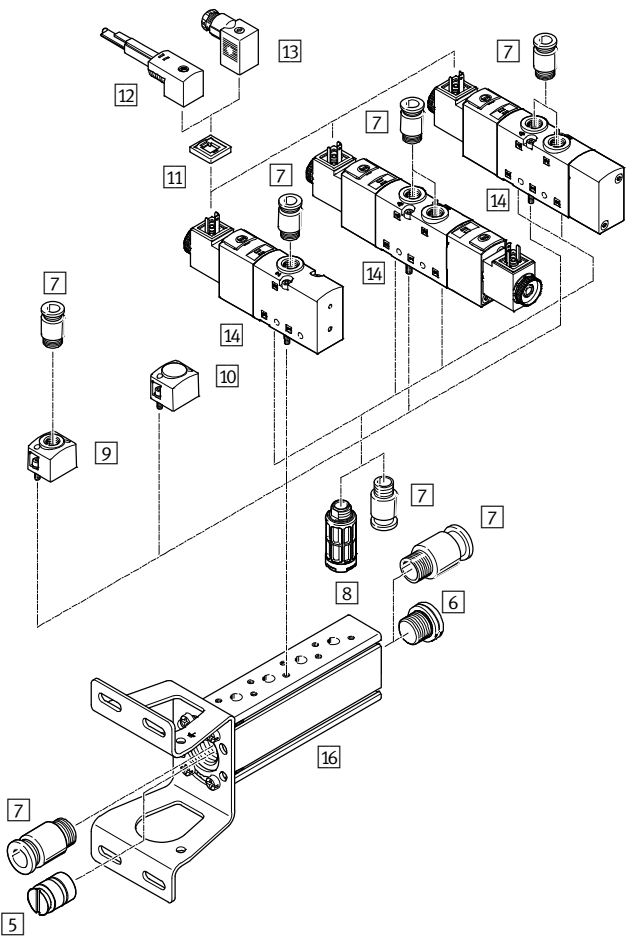
Designation	Brief description	→ Page/online
1 H-rail mounting	For H-rail mounting	1110
2 Compact manifold block	For 5/2- and 5/3-way valves, no port for external pilot air supply	1110, 1111, 1112
3 Standard manifold block	For 5/2- and 5/3-way valves, with ports 12 and 14 for external pilot air supply	1110, 1111, 1112
4 Extension module	For standard manifold block, with ports 12 and 14 for external pilot air supply	1110, 1111, 1112
5 Separator	For creating pressure zones	1113
6 Blanking plug	–	1113
7 Push-in fitting	For connecting compressed air tubing with standard O.D.	1113
8 Silencer	For mounting in exhaust ports	1113
9 Supply plate	For additional air supply and exhaust via a valve position	1113
10 Cover plate	For covering unused valve positions	1114
11 Illuminating seal	For indicating the switching status	1114
12 Plug socket with cable	For solenoid valves VUVS	1114
13 Plug socket	For solenoid valves VUVS	1114
14 Solenoid valve	5/2-way valve, with solenoid coil	1097
15 H-rail	–	–
– Solenoid coil	For solenoid valves VUVS	1116
– Cover cap	For manual override VAMC	1116

Accessories – Manifold assembly solenoid valve on supply manifold

Common supply manifold for mounting on both sides



Common supply manifold for mounting on one side

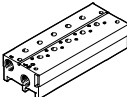
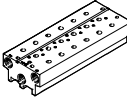
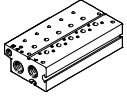
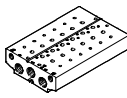


Designation	Brief description	→ Page/online
5 Separator	For creating pressure zones	1113
6 Blanking plug	–	1113
7 Push-in fitting	For connecting compressed air tubing with standard O.D.	1113
8 Silencer	For mounting in exhaust ports	1113
9 Supply plate	For additional air supply via a valve position	1113
10 Cover plate	For covering unused valve positions	1114
11 Illuminating seal	For indicating the switching status	1114
12 Plug socket with cable	For solenoid valves VUVS	1114
13 Plug socket	For solenoid valves VUVS	1114
14 Solenoid valve	With solenoid coil	1097
16 Common supply manifold	–	1115
– Solenoid coil	For solenoid valves VUVS	1116
– Cover cap	For manual override VAMC	1116

Universal valve terminals >

Solenoid valves VUVS ★ /valve manifold VTUS

Accessories – Ordering data

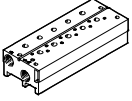
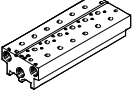
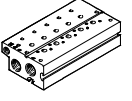
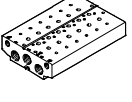
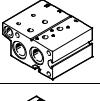
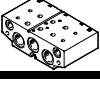
Description		Part no.	Type
1 H-rail mounting			
	For mounting the valve manifold on standard H-rail TH 35-7,5 or TH 35-15, to EN 60715	For size 20	★ 569998 VAME-T-M4
		For size 25	2636436 VAME-T-M5
		For size 30	3488412 VAME-T-M6
2 Compact manifold block, size 20, for 3/2-way valves			
	Incl. seals and screws for valve mounting	2 valve positions	★ 576465 VABM-B10-20S-G14-2-P3
		3 valve positions	576466 VABM-B10-20S-G14-3-P3
		4 valve positions	★ 576467 VABM-B10-20S-G14-4-P3
		6 valve positions	★ 576469 VABM-B10-20S-G14-6-P3
		8 valve positions	★ 576471 VABM-B10-20S-G14-8-P3
		10 valve positions	★ 576473 VABM-B10-20S-G14-10-P3
For 5/2- and 5/3-way valves			
	Incl. seals and screws for valve mounting	2 valve positions	★ 576417 VABM-B10-20S-G14-2
		3 valve positions	576418 VABM-B10-20S-G14-3
		4 valve positions	★ 576419 VABM-B10-20S-G14-4
		6 valve positions	★ 576421 VABM-B10-20S-G14-6
		8 valve positions	★ 576423 VABM-B10-20S-G14-8
		10 valve positions	★ 576425 VABM-B10-20S-G14-10
3 Standard manifold block, size 20, for 3/2-way valves			
	Incl. seals and screws for valve mounting	2 valve positions	576441 VABM-B10-20E-G38-2-P3
		3 valve positions	576442 VABM-B10-20E-G38-3-P3
		4 valve positions	576443 VABM-B10-20E-G38-4-P3
		6 valve positions	576445 VABM-B10-20E-G38-6-P3
		8 valve positions	576447 VABM-B10-20E-G38-8-P3
		10 valve positions	576449 VABM-B10-20E-G38-10-P3
For 5/2- and 5/3-way valves			
	Incl. seals and screws for valve mounting	2 valve positions	576339 VABM-B10-20E-G38-2
		3 valve positions	576340 VABM-B10-20E-G38-3
		4 valve positions	576341 VABM-B10-20E-G38-4
		6 valve positions	576343 VABM-B10-20E-G38-6
		8 valve positions	576345 VABM-B10-20E-G38-8
		10 valve positions	576347 VABM-B10-20E-G38-10
4 Manifold block, extension module for standard manifold block, size 20			
	For 3/2-way valves, incl. seals and screws for valve mounting	2 valve positions	576490 VABM-B10-20EEE-G38-2-P3
	For 5/2- and 5/3-way valves, incl. seals and screws for valve mounting	2 valve positions	576489 VABM-B10-20EEE-G38-2

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Valve terminals

Solenoid valves VUVS ★ /valve manifold VTUS

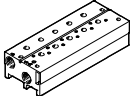
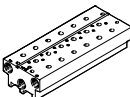
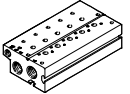
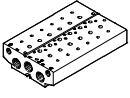
Accessories – Ordering data

Description		Part no.	Type
2 Compact manifold block, size 25, for 3/2-way valves			
	Incl. seals and screws for valve mounting	2 valve positions	★ 8026297 VABM-B10-25S-G38-2-P3
		3 valve positions	8026298 VABM-B10-25S-G38-3-P3
		4 valve positions	★ 8026299 VABM-B10-25S-G38-4-P3
		6 valve positions	★ 8026301 VABM-B10-25S-G38-6-P3
		8 valve positions	★ 8026303 VABM-B10-25S-G38-8-P3
		10 valve positions	★ 8026305 VABM-B10-25S-G38-10-P3
For 5/2- and 5/3-way valves			
	Incl. seals and screws for valve mounting	2 valve positions	★ 8026261 VABM-B10-25S-G38-2
		3 valve positions	8026262 VABM-B10-25S-G38-3
		4 valve positions	★ 8026263 VABM-B10-25S-G38-4
		6 valve positions	★ 8026265 VABM-B10-25S-G38-6
		8 valve positions	★ 8026267 VABM-B10-25S-G38-8
		10 valve positions	★ 8026269 VABM-B10-25S-G38-10
3 Standard manifold block, size 25, for 3/2-way valves			
	Incl. seals and screws for valve mounting	2 valve positions	8026279 VABM-B10-25E-G12-2-P3
		3 valve positions	8026280 VABM-B10-25E-G12-3-P3
		4 valve positions	8026281 VABM-B10-25E-G12-4-P3
		6 valve positions	8026283 VABM-B10-25E-G12-6-P3
		8 valve positions	8026285 VABM-B10-25E-G12-8-P3
		10 valve positions	8026287 VABM-B10-25E-G12-10-P3
For 5/2- and 5/3-way valves			
	Incl. seals and screws for valve mounting	2 valve positions	8026243 VABM-B10-25E-G12-2
		3 valve positions	8026244 VABM-B10-25E-G12-3
		4 valve positions	8026245 VABM-B10-25E-G12-4
		6 valve positions	8026247 VABM-B10-25E-G12-6
		8 valve positions	8026249 VABM-B10-25E-G12-8
		10 valve positions	8026251 VABM-B10-25E-G12-10
4 Extension module for standard manifold block, size 25			
	For 3/2-way valves, incl. seals and screws for valve mounting	2 valve positions	8026316 VABM-B10-25EEE-G12-2-P3
	For 5/2- and 5/3-way valves, incl. seals and screws for valve mounting	2 valve positions	8026315 VABM-B10-25EEE-G12-2

Universal valve terminals >

Solenoid valves VUVS ★ /valve manifold VTUS

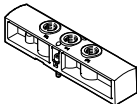
Accessories – Ordering data

	Description		Part no.	Type
2 Compact manifold block, size 30, for 3/2-way valves				
	Incl. seals and screws for valve mounting	2 valve positions	★	8026413 VABM-B10-30S-G12-2-P3
		3 valve positions		8026414 VABM-B10-30S-G12-3-P3
		4 valve positions	★	8026415 VABM-B10-30S-G12-4-P3
		6 valve positions	★	8026417 VABM-B10-30S-G12-6-P3
		8 valve positions	★	8026419 VABM-B10-30S-G12-8-P3
		10 valve positions	★	8026421 VABM-B10-30S-G12-10-P3
For 5/2- and 5/3-way valves				
	Incl. seals and screws for valve mounting	2 valve positions	★	8026377 VABM-B10-30S-G12-2
		3 valve positions		8026378 VABM-B10-30S-G12-3
		4 valve positions	★	8026379 VABM-B10-30S-G12-4
		6 valve positions	★	8026381 VABM-B10-30S-G12-6
		8 valve positions	★	8026383 VABM-B10-30S-G12-8
		10 valve positions	★	8026385 VABM-B10-30S-G12-10
3 Standard manifold block, size 30, for 3/2-way valves				
	Incl. seals and screws for valve assembly	2 valve positions		8026395 VABM-B10-30E-G34-2-P3
		3 valve positions		8026396 VABM-B10-30E-G34-3-P3
		4 valve positions		8026397 VABM-B10-30E-G34-4-P3
		6 valve positions		8026399 VABM-B10-30E-G34-6-P3
		8 valve positions		8026401 VABM-B10-30E-G34-8-P3
		10 valve positions		8026403 VABM-B10-30E-G34-10-P3
For 5/2- and 5/3-way valves				
	Incl. seals and screws for valve mounting	2 valve positions		8026359 VABM-B10-30E-G34-2
		3 valve positions		8026360 VABM-B10-30E-G34-3
		4 valve positions		8026361 VABM-B10-30E-G34-4
		6 valve positions		8026363 VABM-B10-30E-G34-6
		8 valve positions		8026365 VABM-B10-30E-G34-8
		10 valve positions		8026367 VABM-B10-30E-G34-10
4 Extension module for standard manifold block, size 30				
	For 3/2-way valves, incl. seals and screws for valve mounting	2 valve positions		8026432 VABM-B10-30EEE-G34-2-P3
	For 5/2- and 5/3-way valves, incl. seals and screws for valve mounting	2 valve positions		8026431 VABM-B10-30EEE-G34-2

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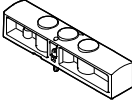
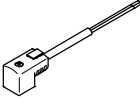
Valve terminals

Accessories – Ordering data

Description			Part no.	Type
5 Separator				
	For creating pressure zones, for threaded connections	G1/8	569995	VABD-8-B
		G1/4	569996	VABD-10-B
		G3/8	574483	VABD-14-B
		G1/2	8022483	VABD-17.5-B
6 Blanking plug				
	With connecting thread G	G1/8	★ 3568	B-1/8
		G1/4	★ 3569	B-1/4
		G3/8	★ 3570	B-3/8
		G1/2	★ 3571	B-1/2
		G3/4	★ 3572	B-3/4
7 Push-in fitting, with internal hexagon				
	Connecting thread M5 for tubing O.D.	4 mm	★ 153315	QSM-M5-4-I
	Connecting thread G1/8 for tubing O.D.	4 mm	★ 186106	QS-G1/8-4-I
		6 mm	★ 186107	QS-G1/8-6-I
		8 mm	★ 186109	QS-G1/8-8-I
	Connecting thread G1/4 for tubing O.D.	8 mm	★ 186110	QS-G1/4-8-I
		10 mm	★ 186112	QS-G1/4-10-I
	Connecting thread G3/8 for tubing O.D.	8 mm	★ 186111	QS-G3/8-8-I
		10 mm	★ 186113	QS-G3/8-10-I
		12 mm	★ 186114	QS-G3/8-12-I
Angled with external hexagon				
	Connecting thread G1/8 for tubing O.D.	4 mm	★ 186116	QSL-G1/8-4
		6 mm	★ 186117	QSL-G1/8-6
		8 mm	★ 186119	QSL-G1/8-8
	Connecting thread G1/4 for tubing O.D.	8 mm	★ 186120	QSL-G1/4-8
		10 mm	★ 186122	QSL-G1/4-10
		12 mm	★ 186351	QSL-G1/4-12
	Connecting thread G3/8 for tubing O.D.	8 mm	★ 186121	QSL-G3/8-8
		10 mm	★ 186123	QSL-G3/8-10
		12 mm	★ 186124	QSL-G3/8-12
		16 mm	★ 186348	QSL-G3/8-16
Angled, long, with external hexagon				
	Connecting thread G1/8 for tubing O.D.	4 mm	186127	QSLL-G1/8-4
		6 mm	186128	QSLL-G1/8-6
		8 mm	186130	QSLL-G1/8-8
		10 mm	186134	QSLL-G3/8-10
8 Silencer				
	With connecting thread G	G1/8	★ 2307	U-1/8
		G1/4	★ 2316	U-1/4
		G3/8	★ 6843	U-3/8-B
		G1/2	★ 6844	U-1/2-B
9 Supply plate				
	For size 20			
	For valve position on manifold block for 3/2-way valves		576493	VABF-B10-20-P1A4-G18-P3
	For valve position on manifold block for 5/2-, 5/3-way valves		576492	VABF-B10-20-P1A4-G18
	For size 25			
	For valve position on manifold block for 3/2-way valves		8026319	VABF-B10-25-P1A4-G14-P3
	For valve position on manifold block for 5/2-, 5/3-way valves		8026318	VABF-B10-25-P1A4-G14
	For size 30			
	For valve position on manifold block for 3/2-way valves		8026435	VABF-B10-30-P1A4-G38-P3
For valve position on manifold block for 5/2-, 5/3-way valves		8026434	VABF-B10-30-P1A4-G38	

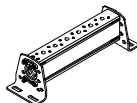
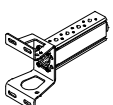
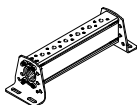
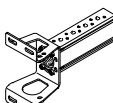
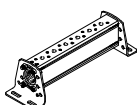
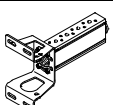
Solenoid valves VUVS ★ /valve manifold VTUS

Accessories – Ordering data

	Description	Part no.	Type
9	Supply plate		
	For size 20		
	For valve position on common supply manifold	576491	VABF-B10-20-P1-G18
	For size 25		
	For valve position on common supply manifold	8026317	VABF-B10-25-P1-G14
	For size 30		
	For valve position on common supply manifold	8026433	VABF-B10-30-P1-G38
10	Blanking plate		
	For size 20		
	For valve position on manifold block for 3/2-way valves	★ 576411	VABB-B10-20-E-P3
	For valve position on manifold block for 5/2-, 5/3-way valves	★ 576410	VABB-B10-20-E
	For valve position on common supply manifold	★ 576409	VABB-B10-20-A
	For size 25		
	For valve position on manifold block for 3/2-way valves	★ 8026210	VABB-B10-25-E-P3
	For valve position on manifold block for 5/2-, 5/3-way valves	★ 8026209	VABB-B10-25-E
	For valve position on common supply manifold	★ 8026208	VABB-B10-25-A
	For size 30		
	For valve position on manifold block for 3/2-way valves	★ 8026336	VABB-B10-30-E-P3
	For valve position on manifold block for 5/2-, 5/3-way valves	★ 8026335	VABB-B10-30-E
	For valve position on common supply manifold	★ 8026334	VABB-B10-30-A
11	Illuminating seal		
	Type C, to EN 175301-803	24 V DC	151717 MEB-LD-12-24DC
		230 V AC	151718 MEB-LD-230AC
12	Plug socket with cable		
	Plug pattern type C, to EN 175301-803		
	Angled socket, 3-pin	2.5 m	★ 151688 KMEB-1-24-2,5-LED
	Cable, open end, 3-wire, 24 V DC, LED	5 m	151689 KMEB-1-24-5-LED
		10 m	193457 KMEB-1-24-10-LED
	Angled socket, 3-pin	2.5 m	151690 KMEB-1-230AC-2,5
	Cable, open end, 3-wire, 0 ... 230 V AC	5 m	151691 KMEB-1-230AC-5
	Plug pattern type B, industry standard		
	Angled socket, 3-pin	2.5 m	★ 30935 KMF-1-24DC-2,5-LED
	Cable, open end, 3-wire, 24 V DC, LED	5 m	30937 KMF-1-24DC-5-LED
		10 m	193458 KMF-1-24-10-LED
	Angled socket, 3-pin	2.5 m	30936 KMF-1-230AC-2,5
	Cable, open end, 3-wire, 0 ... 230 V AC	5 m	30938 KMF-1-230AC-5
13	Plug socket		
	Plug pattern type C, to EN 175301-803		
	3-pin, for cable diameter 4 ... 6 mm, IP65	0 ... 230 V AC/DC	539712 MSSD-EB-M12
	3-pin, for cable diameter 6 ... 8 mm, IP65	0 ... 250 V AC/DC	★ 151687 MSSD-EB
	4-pin, for cable diameter 6 ... 8 mm, IP67	0 ... 230 V AC/DC	192745 MSSD-EB-S-M14
	3-pin, straight plug, M12, 2-pin, IP65	12 ... 24 V AC/DC	188024 MSSD-EB-M12-MONO
	Plug pattern type B, industry standard		
	3-pin, for cable diameter 6 ... 8 mm, IP65	0 ... 250 V AC/DC	★ 34431 MSSD-F
	4-pin, for cable diameter 5.5 ... 8 mm, IP67	0 ... 230 V AC/DC	192746 MSSD-F-S-M16

Solenoid valves VUVS ★ /valve manifold VTUS

Accessories – Ordering data

Description		Part no.		Type	
16 Common supply manifold, size 20					
	For mounting on both sides, incl. seals and screws for mounting valves	2 valve positions	★	576363	VABM-B10-20-G38-2-P53
		3 valve positions		576364	VABM-B10-20-G38-3-P53
		4 valve positions	★	576365	VABM-B10-20-G38-4-P53
		6 valve positions	★	576367	VABM-B10-20-G38-6-P53
		8 valve positions	★	576369	VABM-B10-20-G38-8-P53
		10 valve positions	★	576371	VABM-B10-20-G38-10-P53
	For mounting on one side, incl. seals and screws for valve mounting	2 valve positions		576414	VABM-B10-20-G38-2-P53-E
		3 valve positions		576415	VABM-B10-20-G38-3-P53-E
		4 valve positions		576416	VABM-B10-20-G38-4-P53-E
Size 25					
	For mounting on both sides, incl. seals and screws for mounting valves	2 valve positions	★	8026219	VABM-B10-25-G12-2-P53
		3 valve positions		8026220	VABM-B10-25-G12-3-P53
		4 valve positions	★	8026221	VABM-B10-25-G12-4-P53
		6 valve positions	★	8026223	VABM-B10-25-G12-6-P53
		8 valve positions	★	8026225	VABM-B10-25-G12-8-P53
		10 valve positions	★	8026227	VABM-B10-25-G12-10-P53
	For mounting on one side, incl. seals and screws for valve mounting	2 valve positions		8026237	VABM-B10-25-G12-2-P53-E
		3 valve positions		8026238	VABM-B10-25-G12-3-P53-E
		4 valve positions		8026239	VABM-B10-25-G12-4-P53-E
Size 30					
	For mounting on both sides, incl. seals and screws for mounting valves	2 valve positions	★	8026338	VABM-B10-30-G34-2-P53
		3 valve positions		8026339	VABM-B10-30-G34-3-P53
		4 valve positions	★	8026340	VABM-B10-30-G34-4-P53
		6 valve positions	★	8026342	VABM-B10-30-G34-6-P53
		8 valve positions	★	8026344	VABM-B10-30-G34-8-P53
		10 valve positions	★	8026346	VABM-B10-30-G34-10-P53
	For mounting on one side, incl. seals and screws for valve mounting	2 valve positions		8026356	VABM-B10-30-G34-2-P53-E
		3 valve positions		8026357	VABM-B10-30-G34-3-P53-E
		4 valve positions		8026358	VABM-B10-30-G34-4-P53-E

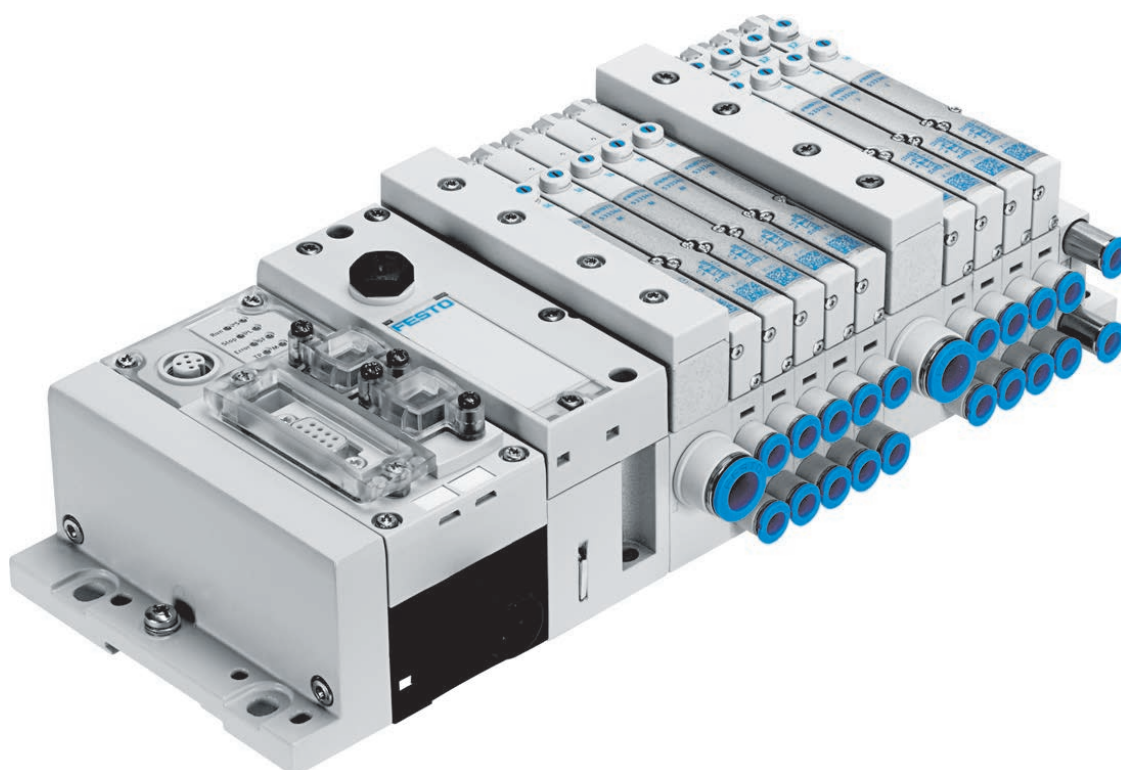
09

Valve terminals

Solenoid valves VUVS ★ /valve manifold VTUS

Accessories – Ordering data

Description		Part no.	Type
Solenoid coil for valves			
	For size 20		
	Plug pattern type C, to EN 175301-803	12 V DC	8025331 VACS-C-C1-5
		24 V DC	8025330 VACS-C-C1-1
		48 V DC	8025336 VACS-C-C1-7
		24 V AC	8025335 VACS-C-C1-1A
		48 V AC	8025337 VACS-C-C1-7A
		110/120 V AC	8025334 VACS-C-C1-16B
		230/240 V AC	8025338 VACS-C-C1-3W
	For size 25 and size 30		
	Plug pattern type B, industry standard	12 V DC	8030801 VACF-B-B2-5
		24 V DC	8030802 VACF-B-B2-1
		48 V DC	8030803 VACF-B-B2-7
		24 V AC	8030804 VACF-B-B2-1A
		48 V AC	8030805 VACF-B-B2-7A
		110/120 V AC	8030806 VACF-B-B2-16B
		230/240 V AC	8030808 VACF-B-B2-3W
	Plug pattern type C, to EN 175301-803	12 V DC	8030810 VACF-B-C1-5
		24 V DC	8030811 VACF-B-C1-1
		48 V DC	8030812 VACF-B-C1-7
		24 V AC	8030813 VACF-B-C1-1A
		48 V AC	8030814 VACF-B-C1-7A
		110/120 V AC	8030815 VACF-B-B2-16B
		230/240 V AC	8030817 VACF-B-C1-3W
Cover cap			
	For manual override of valves VUVS-LK	Size 20	★ 8049538 VAMC-B10-20-CH2-S
		Size 25	★ 8049539 VAMC-B10-25-CH2-S
		Size 30	



Modularity in a lightweight design

- + Three valve sizes can be combined as required
- + Reduced weight thanks to sub-bases in polymer technology
- + Extremely modular

Universal valve terminals ›
Valve terminals

MPA-L

Multi-pin plug
Fieldbus
IO-Link
I-Port

Universal valve terminals >

Valve terminals

MPA-L



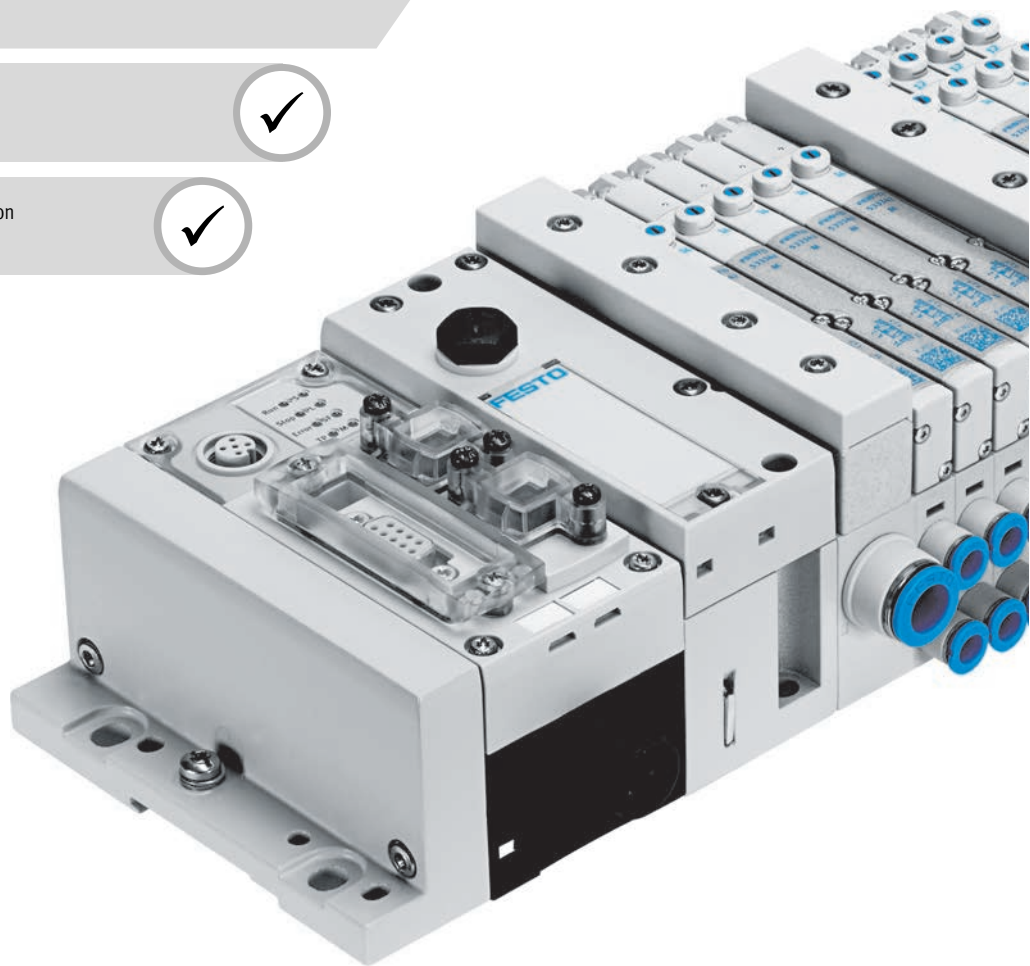
Overview, configuration and ordering

→ www.festo.com/catalogue/mpa-l



Additional information, support and user documentation

→ www.festo.com/sp/mpa-l



- + Sub-base in polymer technology
- + Used in many industries
- + Extremely modular and versatile
- + Three valve sizes available, expandable in individual steps
- + IP65 degree of protection

Product range overview

Function	Version	Code	Size			→ Page/ online
			10 mm (MPA1)	14 mm (MPA14)	20 mm (MPA2)	
Position function 1-32	5/2-way single-solenoid	M	■	■	■	1122
	5/2-way double-solenoid valve	J	■	■	■	1122
	2x 3/2-way valve, normally open	N	■	■	■	1122
	2x 3/2-way valve, normally closed	K	■	■	■	1122
	2x 3/2-way valve, 1x normally closed, 1x normally open	H	■	■	■	1122
	5/3-way valve, mid-position pressurised	B	■	■	■	1122
	5/3-way valve, mid-position closed	G	■	■	■	1122
	5/3-way valve, mid-position exhausted	E	■	■	■	1122
	2x 2/2-way valve, normally closed	D	■	■	■	1122
	3/2-way valve, normally closed, external supply air	X	■	■	■	1122
	3/2-way valve, normally open, external supply air	W	■	■	■	1122
	2x 2/2-way valve, 1x normally closed, 1x normally open, reversible	I	■	■	■	1122
	5/2-way valve, single-solenoid, with spring return	MS	■	–	■	mpal
	2x 3/2-way valve, normally open, with spring return	NS	■	■	■	1122
	2x 3/2-way valve, normally closed, with spring return	KS	■	■	■	1122
	2x 3/2-way valve, 1x normally closed, 1x normally open, with spring return	HS	■	■	■	1122
	2x 2/2-way valve, compatible with low pressure	DS	■	■	■	1122
	5/2-way valve, single-solenoid, polymer poppet valve	MU	■	–	–	1122
	2x 3/2-way valve, normally open, polymer poppet valve	NU	■	–	–	1122
	2x 3/2-way valve, normally closed, polymer poppet valve	KU	■	–	–	1122
	2x 3/2-way valve, 1x normally closed, 1x normally open, polymer poppet valve	HU	■	–	–	1122
	Vacant position	L	■	■	■	mpal

Note

Valve terminals can be ordered quickly and easily online.
The convenient product configurator can be found at:

→ www.festo.com/catalogue/mpal

Universal valve terminals >

Valve terminals MPA-L

Key features

Innovative

- Compact high-performance valves in sturdy metal housing
- Flow rates up to 870 l/min
- Wide range of electrical connection options for multi-pin plug: Sub-D, ribbon cable or terminal strip
- Connection to the electrical peripherals CPX with a wide range of communication options
- I-Port/IO-Link® interface
- Freely configurable push-in connectors

Flexible

- Modular system offering a range of configuration options
- Freely extendable system with individual sub-bases and modular tie rods
- Up to 32 solenoid coils
- Conversions and extensions possible at a later date
- Air supply can be extended via additional pressure zones with supply modules
- Wide range of pressures –0.9 ... 10 bar
- Wide range of valve functions

Reliable

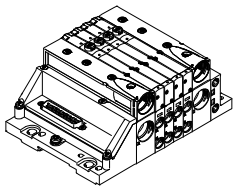
- High output reserves thanks to large pneumatic cross sections and exhausting with high flow rates
- Lightweight and low-cost polymer components
- Fast troubleshooting thanks to LEDs on the valves
- Easy to service thanks to replaceable valves and electrical modules
- Manual override either non-detenting, detenting or secured against unauthorised activation (covered)
- Durable thanks to tried-and-tested piston spool valves

Easy to install

- Fast and reliable in-house assembly using individual components or delivered as a ready-to-install and tested unit
- Reduced selection, ordering, installation and commissioning costs
- Secure mounting on wall or H-rail

Electrical connection options

Multi-pin plug connection



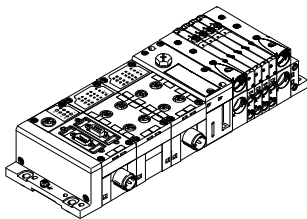
The signals are transmitted from the controller to the valve terminal via a pre-assembled or self-assembled multi-wire cable to the multi-pin plug connection, which substantially reduces installation time.

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 self-assembly
- Ribbon cable connection
- Terminal strip connection

Fieldbus connection via the CPX system



An integrated fieldbus node manages communication with a higher-order PLC. This enables a space-saving pneumatic and electronic solution. Valve terminals with fieldbus interfaces can be configured with up to 32 valve positions.

The CPX terminal also enables the integration of digital and analogue electrical inputs and outputs, pressure sensors and controllers for pneumatic or electric positioning axes.

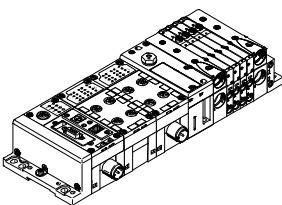
A detailed description of the extensive functionality can be found in the documentation for the CPX terminal

➔ Page 1597

Fieldbus protocols/CPX variants:

- PROFIBUS DP
- PROFINET
- INTERBUS®
- DeviceNet®
- CANopen
- CC-LINK®
- EtherNet/IP
- Front end controller Remote I/O
- Modbus/TCP
- EtherCAT®
- POWERLINK
- Sercos III

Control block connection via the CPX system



Controllers integrated in the Festo valve terminals enable the construction of stand-alone control units to IP65, without control cabinets.

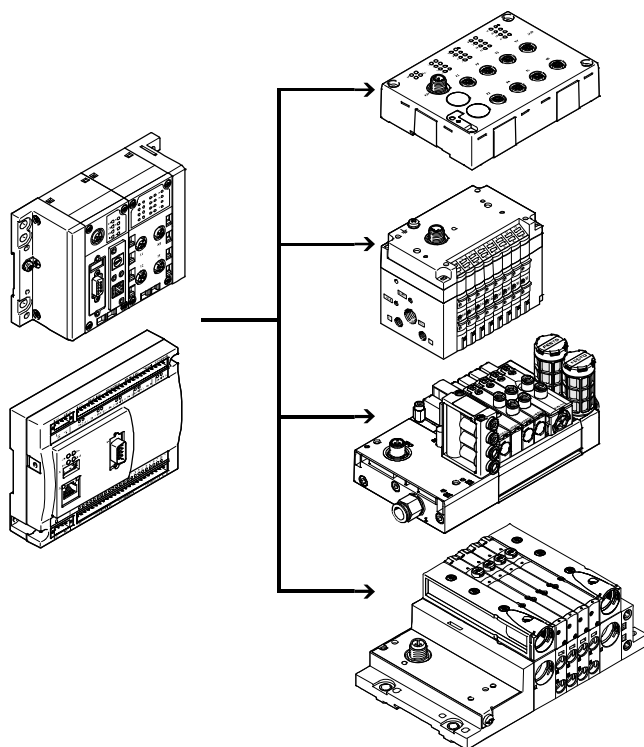
In the slave operating mode, these valve terminals can be used for intelligent pre-processing and are therefore ideal modules for designing decentralised intelligence.

In the master operating mode, terminal groups can be designed with many options and functions that can autonomously control a medium-sized machine/system.

Key features

Electrical connection options

I-Port interface/IO-Link®, CTCL installation system



A CTCL system consists of the CTCL master and the devices with I-Port interface, which are connected using special connecting cables. This permits a decentralised layout of the devices. This means that the valve terminals and I/O modules with I-Port interface (devices) can be mounted very close to the cylinders to be controlled. This reduces the length of the air supply lines used, which minimises flow losses and pressurisation and exhaust times.

The I-Port interface from Festo is based on IO-Link® and is compatible with IO-Link® in certain areas.

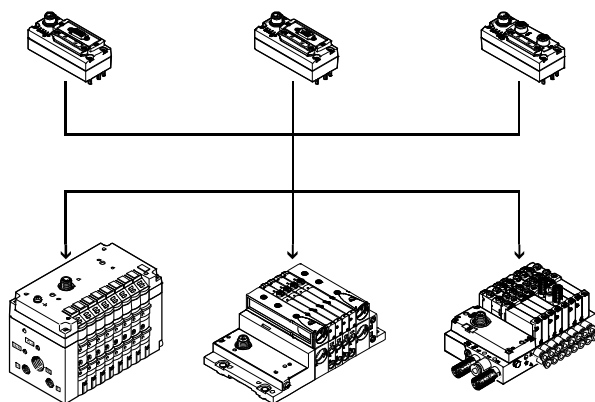
The connection type corresponds to a star topology. In other words, only one module or valve terminal can be connected to each I-Port.

As well as communication, the I-Port interfaces also handle the power supply for the connected devices. The maximum length of a string is 20 m.

The restrictions compared to IO-Link® include:

- Permanently set baud rate of 230.4 kbps
- SIO mode is not supported
- Max. 32 bytes of input data and 32 bytes of output data
- Only one dump of the master commands is used
- Festo plug and work, configuration via IODD is not supported.

Fieldbus connection via the CTEU system



CTEU is a system for the compact connection of a valve terminal to different fieldbus standards such as PROFIBUS and DeviceNet®.

The fieldbus node is mounted directly on the I-Port interface of the valve terminal.

This makes it easy to switch between the fieldbus protocols; however, there is no way of connecting I/O modules to the fieldbus nodes.

The following fieldbus protocols are supported:

- DeviceNet®
- PROFIBUS DP
- CANopen
- CC-LINK®
- EtherCAT®
- AS-Interface
- PROFINET
- EtherNet/IP

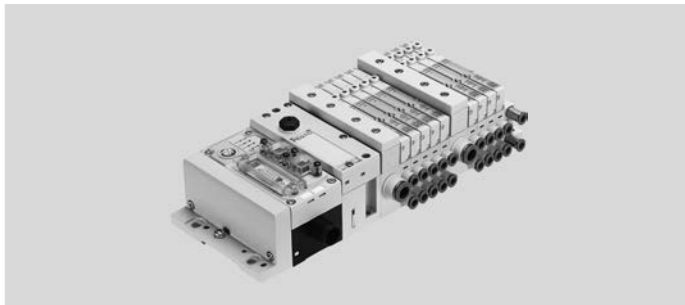
Valve terminals MPA-L

Data sheet

Valve terminal with multi-pin plug or fieldbus connection

Flow rate
 Up to 870 l/min
 Voltage
 24 V DC

Valve width
 10 mm
 14 mm
 20 mm



Technical data		Download CAD data → www.festo.com
Max. no. of valve positions		32
Max. no. of pressure zones		20
Lubrication		Life-time lubrication, PWIS-free (free of paint-wetting impairment substances)
Type of mounting		Wall mounting
		On H-rail to EN 60715
Manual override		Non-detenting, detenting
Nominal operating voltage	[V DC]	24

Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[bar] −0.9 ... +10
Pilot pressure	[bar] 3 ... 8
Ambient temperature	[°C] −5 ... +50

Current consumption per solenoid coil at nominal voltage		Width		
		10 mm	14 mm	20 mm
Nominal pick-up current	[mA]	50	50	110
Nominal current with current reduction	[mA]	10	10	23
Time until current reduction	[ms]	20	20	20

Electrical data – MPA-L with electrical interface for CPX terminal	
Intrinsic current consumption of the valve terminal (internal electronics, without valves)	
At 24 V U _{EL/SEN} ¹⁾	[mA] Typ. 13
At 24 V U _{val} ²⁾	[mA] Typ. 35
Diagnostic message	
Undervoltage U _{OFF} ³⁾	[V] 17.7 ... 17.8

- 1) Power supply for electronics and sensors.
 2) Load voltage supply for valves.
 3) Load voltage outside of function range.

Electrical data – MPA-L with I-Port interface/IO-Link®	
Intrinsic current consumption of the valve terminal (internal electronics, without valves)	
From operating voltage supply connection	[mA] 30
From load voltage supply connection	[mA] 30

Data sheet

Technical data – Valve width 10 mm														
Code for position function 1-32			M	J	N	K	H	B	G	E	X	W	D	I
Switching times	On	[ms]	10	10	10	10	10	10	10	10	10	10	10	8
	Off	[ms]	20	–	20	20	20	35	35	35	20	20	20	20
	Change-over	[ms]	–	15	–	–	–	15	15	15	–	–	–	–
Operating pressure		[bar]	–0.9 ... +10		3 ... 10			–0.9 ... +10					3 ... 10	
Standard nominal flow rate		[l/min]	360	360	300	230	300	300	320	240	255	255	230	260
Design			Piston spool valve											
Materials			Die-cast aluminium											

Technical data – Valve width 10 mm										
Code for position function 1-32			NS	KS	HS	DS	MU	NU	KU	HU
Switching times	On	[ms]	14	14	14	14	10	8	8	8
	Off	[ms]	16	16	16	16	12	8	10	10
	Change-over	[ms]	–	–	–	–	–	–	–	–
Operating pressure		[bar]	–0.9 ... +8				–0.9 ... +10			
Standard nominal flow rate		[l/min]	300	230	300	230	190	190	160	190
Design			Piston spool valve				Poppet valve with spring return			
Materials			Die-cast aluminium				PPA reinforced			

Technical data – Valve width 14 mm																		
Code for position function 1-32			M	J	N	K	H	B	G	E	X	W	D	I	NS	KS	HS	DS
Switching times	On	[ms]	13	9	12	12	12	16	13	13	12	12	12	10	12	12	12	10
	Off	[ms]	30	–	38	38	38	50	52	50	20	20	30	28	23	23	23	25
	Change-over	[ms]	–	24	–	–	–	26	26	26	–	–	–	–	–	–	–	–
Operating pressure		[bar]	–0.9 ... +10		3 ... 10			–0.9 ... +10					3 ... 10		–0.9 ... +10			
Standard nominal flow rate		[l/min]	670	670	650	600	650	630	610	480	400	400	650	670	520	560	520	570
Design			Piston spool valve															
Materials			Die-cast aluminium															

Technical data – Valve width 20 mm																		
Code for position function 1-32			M	J	N	K	H	B	G	E	X	W	D	I	NS	KS	HS	DS
Switching times	On	[ms]	15	9	8	8	8	11	10	11	13	13	7	7	12	12	12	12
	Off	[ms]	28	–	28	28	28	46	40	47	22	22	25	23	25	25	25	25
	Change-over	[ms]	–	22	–	–	–	23	21	23	–	–	–	–	–	–	–	–
Operating pressure		[bar]	–0.9 ... +10		3 ... 10			–0.9 ... +10					3 ... 10		–0.9 ... +8			
Standard nominal flow rate		[l/min]	700	860	610	550	550	550	750	700	480	480	840	680	620	500	550	820
Design			Piston spool valve															
Materials			Die-cast aluminium															

Universal valve terminals >

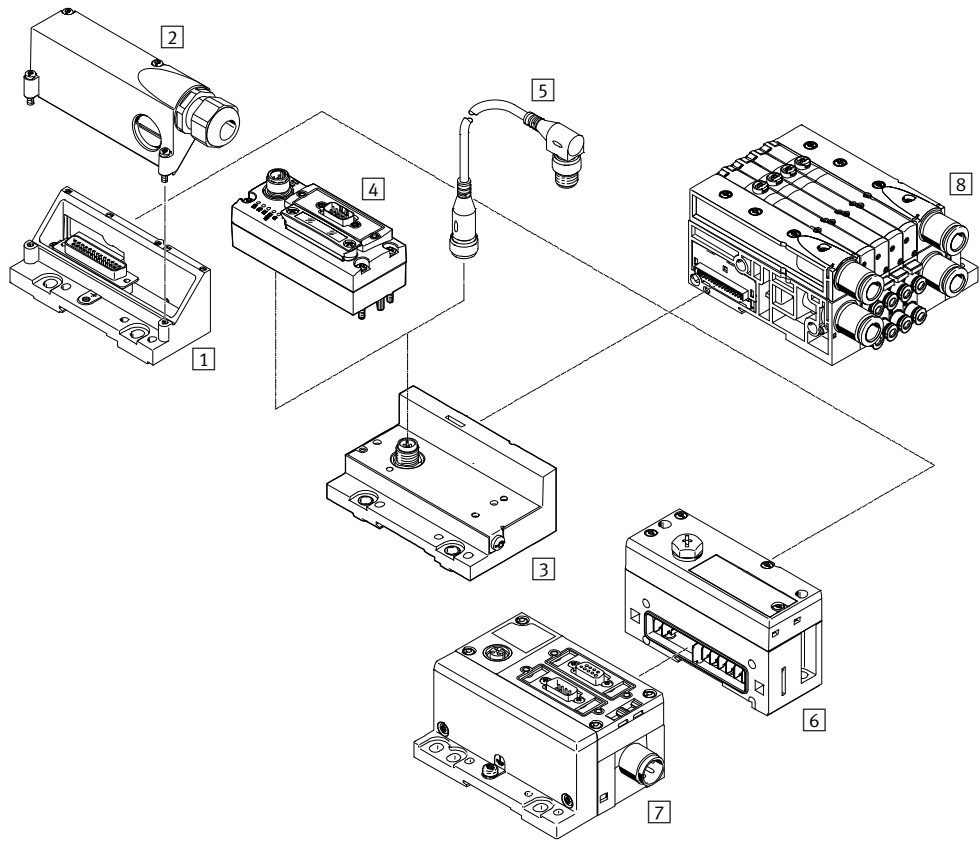
Valve terminals MPA-L

Data sheet

Pneumatic connections		
Right end plate		
Supply	1	Thread G1/4 (straight or angled push-in fitting, for tubing O.D. 6 mm, 8 mm, 10 mm, 12 mm, 5/16", 3/8")
Exhaust port	3	Thread G1/4 (straight or angled push-in fitting, for tubing O.D. 6 mm, 8 mm, 10 mm, 5/16", 3/8")
	5	Thread G1/4 (straight or angled push-in fitting, for tubing O.D. 6 mm, 8 mm, 10 mm, 5/16", 3/8")
Pilot air supply port	12/14	Thread M7 (straight or angled push-in fitting, for tubing O.D. 4 mm, 6 mm; straight push-in fitting, for tubing O.D. 3/16", 1/4")
Pilot exhaust air	82/84	Thread M7 (straight or angled push-in fitting, for tubing O.D. 4 mm, 6 mm; straight push-in fitting, for tubing O.D. 3/16", 1/4")
Power supply module with exhaust plate		
Supply	1	Cartridge fitting 20 mm (straight cartridge fitting, for tubing O.D. 8 mm, 10 mm, 12 mm, 5/16", 3/8", 1/2", adapter for thread G1/4), flat plate silencer
Exhaust port	3/5	Cartridge fitting 20 mm (straight cartridge fitting, for tubing O.D. 8 mm, 10 mm, 12 mm, 5/16", 3/8", 1/2", adapter for thread G1/4), flat plate silencer
Sub-base width 10 mm		
Working ports	2	Cartridge fitting 10 mm (straight or angled cartridge fitting, for tubing O.D. 4 mm, 6 mm, 5/32", 1/4", adapter for thread M7)
	4	Cartridge fitting 10 mm (straight or angled cartridge fitting, for tubing O.D. 4 mm, 6 mm, 5/32", 1/4", adapter for thread M7)
Sub-base width 14 mm		
Working ports	2	Cartridge fitting 14 mm (straight or angled cartridge fitting, for tubing O.D. 6 mm, 8 mm, 1/4", 5/16", adapter for thread G1/8)
	4	Cartridge fitting 14 mm (straight or angled cartridge fitting, for tubing O.D. 6 mm, 8 mm, 1/4", 5/16", adapter for thread G1/8)
Sub-base width 20 mm		
Working ports	2	Cartridge fitting 18 mm (straight or angled cartridge fitting, for tubing O.D. 8 mm, 10 mm, 5/16", 3/8", adapter for thread G1/4)
	4	Cartridge fitting 18 mm (straight or angled cartridge fitting, for tubing O.D. 8 mm, 10 mm, 5/16", 3/8", adapter for thread G1/4)

Materials	
Sub-base	PA
Supply module	PPA
End plate	Die-cast aluminium, PA, PBT
Seals	NBR
Exhaust plate	PA
Flat plate silencer	PE
Electrical interlinking module	PBT, PA, copper alloy
Tie rod	High-alloy stainless steel

Accessories

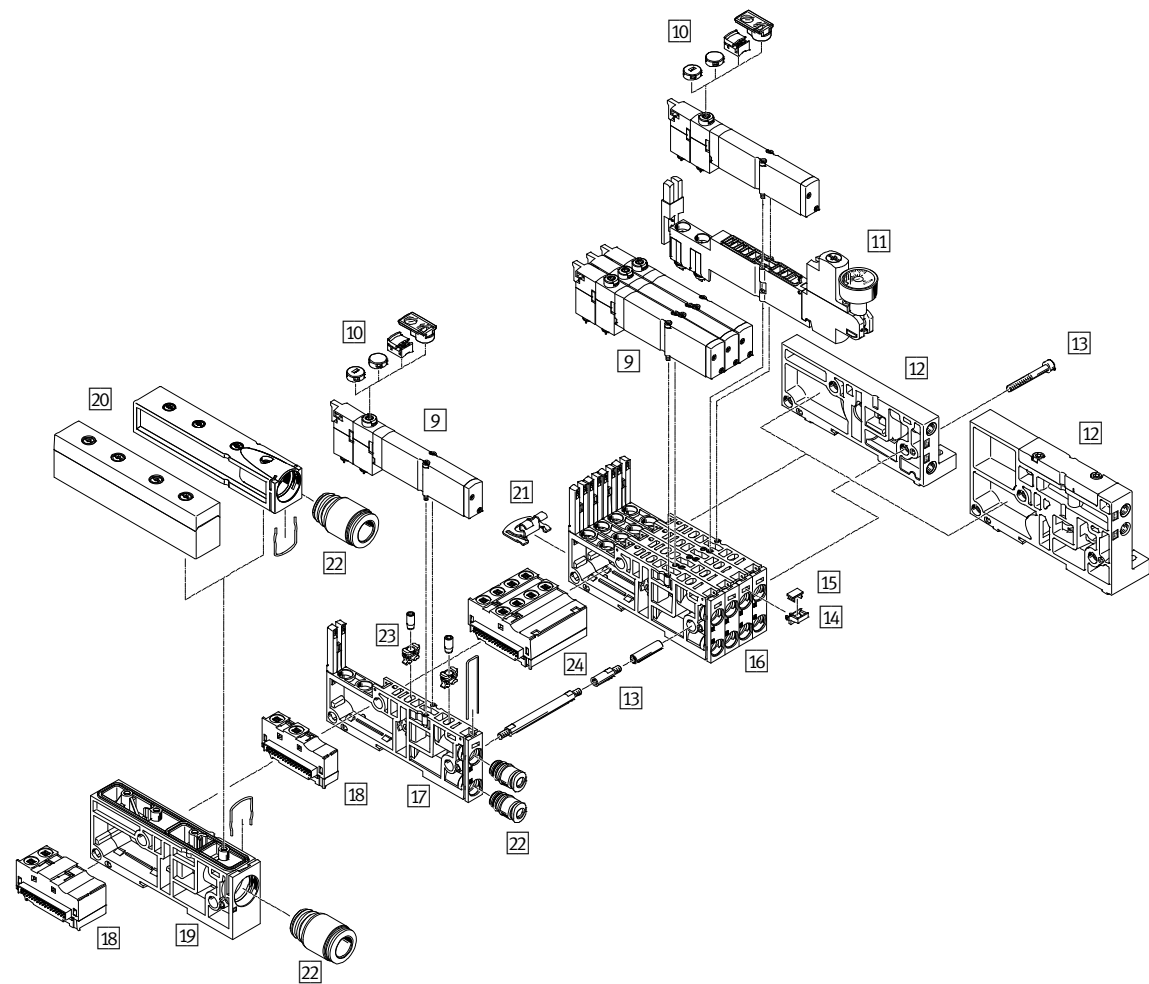


Accessories		→ Page/online
1	End plate with multi-pin plug connection VMPAL-EPL	1122
2	Connecting cable for multi-pin plug connection VMPAL-KM	1122
3	End plate with I-Port interface/IO-Link® VMPAL-EPL-IPO32	1122
4	Fieldbus node CTEU	cteu
5	Connecting cable for I-Port interface/IO-Link® NEBU-M12G5	1127
6	End plate with pneumatic interface for CPX terminal VMPAL-EPL-CPX	1122
7	Module CPX for CPX terminal	1597
8	Valve terminal, pneumatic part	1122

Universal valve terminals >

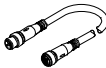
Valve terminals MPA-L

Accessories



Accessories		→ Page/online
9	Solenoid valve VMPA	1122
10	Cover for manual override VMPA-HB or inscription label holder ASLR-D-L1	mpal
11	Vertical stacking modules VMPA1-B8/VMPA2-B8	mpal
12	Right-hand end plate with pilot air selector for choosing the pilot air supply (internal or external) VMPAL-EPR	mpal
13	Tie rod VMPAL-ZA	mpal
14	Inscription label holder VMPAL-ST-AP	1127
15	Inscription label IBS-6x10	1127
16	Sub-base VMPAL-AP-4X, 4 pieces combined	mpal
17	Sub-base VMPAL-AP	mpal
18	Electrical interlinking module VMPAL-EVAP	mpal
19	Supply module VMPAL-SP	mpal
20	Exhaust plate VMPA2-B8	mpal
21	Mounting VMPAL-BD	1127
22	Cartridge fitting QSPKG	1127
23	Fixed restrictor VMPA1-FT or check valve VMPA1-RV/VMPA14-RV/VMPA2-RV	mpal
24	Electrical interlinking module for four sub-bases VMPAL-EVAP-4	mpal

Accessories – Ordering data

	Code ¹⁾	Description		Part no.	Type code
5 Connecting cable for I-Port interface/IO-Link®					
	–	Connecting cable	5 m	574321	NEBU-M12G5-E-5-Q8N-M12G5
			7.5 m	574322	NEBU-M12G5-E-7.5-Q8N-M12G5
			10 m	574323	NEBU-M12G5-E-10-Q8N-M12G5
14 Inscription label holder					
	TM	For sub-base, 10 pieces	Width 10 mm	561109	VMPAL-ST-AP-10
			Width 14 mm	561112	VMPAL-ST-AP-14
			Width 20 mm	561115	VMPAL-ST-AP-20
15 Inscription label					
	–	6 mm x 10 mm, 64 pieces in frame		18576	IBS-6x10
21 Mounting					
	–	Mounting bracket (should be installed max. every 13 cm), 10 pieces		560949	VMPAL-BD
	H	H-rail mounting for MPA-L with multi-pin plug connection, 3 pieces		526032	CPX-CPA-BG-NRH
	H	H-rail mounting for MPA-L with fieldbus connection, 2 pieces		560798	VMPAF-FB-BG-NRH
22 Cartridge fitting					
	–	10 mm cartridge fitting, plastic, for working ports, 10 pieces, connection for tubing O.D.	4 mm	132622	QSPKG10-4
			6 mm	132623	QSPKG10-6
			3/16"	132625	QSPKG10-3/16-U
			1/4"	132626	QSPKG10-1/4-U
		14 mm cartridge fitting, plastic, for supply ports, 10 pieces, connection for tubing O.D.	6 mm	132930	QSPKG14-6
			8 mm	132931	QSPKG14-8
			1/4"	132932	QSPKG14-1/4-U
			5/16"	132933	QSPKG14-5/16-U
		18 mm cartridge fitting, plastic, for supply ports, 10 pieces, connection for tubing O.D.	8 mm	132649	QSPKG18-8
			10 mm	132650	QSPKG18-10
			5/16"	132651	QSPKG18-5/16-U
			3/8"	132652	QSPKG18-3/8-U
20 mm cartridge fitting, plastic, for supply ports, 10 pieces, connection for tubing O.D.	10 mm	132634	QSPKG20-10		
	12 mm	132635	QSPKG20-12		
	3/8"	132637	QSPKG20-3/8U		
	1/2"	132638	QSPKG20-1/2-U		
	AGG	Adapter for 10 mm cartridge connection to thread M7, 10 pieces	572380	VMPAL-F10-M7	
	BGG	Adapter for 14 mm cartridge connection to G1/8 thread, 10 pieces	574084	VMPAL-F14-G1/8	
	CGG	Adapter for 18 mm cartridge connection to G1/4 thread, 10 pieces	573914	VMPAL-F20-G1/4	
	–	Adapter for 20 mm cartridge connection to G1/4 thread, 10 pieces	572381	VMPAL-FSP-G1/4	

1) Code letter within the order code for a valve terminal configuration.

Universal valve terminals >

Valve terminals MPA-L

09

Valve terminals



Automation made easy

- + Maximum function integration thanks to connection to terminal CPX
- + Up to 128 valve functions on one valve terminal
- + Reduced complexity thanks to numerous functions on the valve terminal

Universal valve terminals ›

Valve terminals

MPA-S

Multi-pin plug

CPX

AS-Interface

CPI

Universal valve terminals >

Valve terminals

MPA-S



Overview, configuration and ordering

→ www.festo.com/catalogue/mpa-s



Additional information, support and user documentation

→ www.festo.com/sp/mpa-s



- + Flow rates 360 ... 700 l/min
- + Pressure range 0.9 ... 10 bar
- + Versatility: flexible pressure supply, variable pressure zones, additional power supply at any position
- + Serial valve actuation – up to 64 valve positions or 128 solenoid coils
- + Electrical I/O, CPI, AS-Interface and fieldbus connections with modular electrical terminal CPX
- + Degree of protection IP65

Valve terminals MPA-S

Product range overview

Electrical connection	Max. no. of valve positions	MPA1 (width 10 mm)	MPA2 (width 20 mm)	→ Page/ online
Solenoid valve on individual sub-base	1	■	■	mpa-s
Multi-pin plug connection	24	■	■	1133
AS-Interface connection	8	■	■	mpa-s
CPI connection	32	■	■	mpa-s
Fieldbus connection (CPX terminal)	64	■	■	1133

Function	Version	Code	Width		→ Page/ online
			10 mm (MPA1)	20 mm (MPA2)	
Position function 1-64	2x 2/2-way valve, 1x normally closed, 1x normally closed, reversible	I	■	■	1134
	2x 2/2-way valve, normally closed	D	■	■	1134
	2x 2/2-way valve, normally closed, operating pressure –0.9 ... +8 bar	DS	■	■	1134
	3/2-way valve, normally closed, external supply air	X	■	■	1134
	3/2-way valve, normally open, external supply air	W	■	■	1134
	2x 3/2-way valve, normally open	N	■	■	1134
	2x 3/2-way valve, normally open, operating pressure –0.9 ... +8 bar	NS	■	■	1134
	2x 3/2-way valve, normally open, polymer poppet valve	NU	■	–	1134
	2x 3/2-way valve, normally closed	K	■	■	1134
	2x 3/2-way valve, normally closed, operating pressure –0.9 ... +8 bar	KS	■	■	1134
	2x 3/2-way valve, normally closed, polymer poppet valve	KU	■	–	1134
	2x 3/2-way valve, 1x normally open, 1x normally closed	H	■	■	1134
	2x 3/2-way valve, 1x normally open, 1x normally closed, operating pressure –0.9 ... +8 bar	HS	■	■	1134
	2x 3/2-way valve, 1x normally open, 1x normally closed, polymer poppet valve	HU	■	–	1134
	5/2-way valve, single solenoid	M	■	■	1134
	5/2-way valve, single solenoid, operating pressure –0.9 ... +8 bar	MS	■	■	1134
	5/2-way valve, single solenoid, polymer poppet valve	MU	■	–	1134
	5/2-way valve, double solenoid	J	■	■	1134
	5/3-way valve, mid-position pressurised	B	■	■	1134
	5/3-way valve, mid-position closed	G	■	■	1134
	5/3-way valve, mid-position exhausted	E	■	■	1134
	Cover plate for vacant position	L	■	■	1134
	Proportional pressure regulator VPPM	Q...	■	■	mpa-s

Note

Valve terminals can be ordered quickly and easily online.
The convenient product configurator can be found at:

→ www.festo.com/catalogue/mpa-s

Valve terminals MPA-S

Key features

Innovative

- Compact high-performance valves in sturdy metal housing
- MPA1: flow rates up to 360 l/min
- MPA2: flow rates up to 700 l/min
- Dream team: fieldbus valve terminal suitable for electrical peripherals CPX. This means:
 - Forward-looking internal communication system for actuating the valves and CPX modules
 - Diagnostics down to the individual valve
 - Valves can be actuated with or without (standard) separate electrical circuits

Flexible

- Modular system offering a range of configuration options
- Expandable with up to 128 solenoid coils
- Conversions and extensions possible at any time
- Sub-bases can be expanded using just three screws, sturdy separating seals on metal separator plates
- Integration of innovative function modules possible
- Proportional pressure regulators
- Pressure sensor
- Supply plates enable a flexible air supply and variable pressure zones
- Wide range of pressures
–0.9 ... 10 bar
- Wide range of valve functions

Reliable

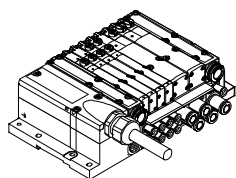
- Fast troubleshooting thanks to LEDs on the valves and diagnostics via fieldbus
- High operating voltage tolerance $\pm 25\%$
- Reliable servicing through replaceable valves and electronics modules
- Manual override either non-detenting, detenting or secured against unauthorised activation (covered)
- Durable thanks to tried-and-tested piston spool valves
- Large and durable labelling system, suitable for barcodes

Easy to install

- Ready-to-install and tested unit
- Reduced selection, ordering, installation and commissioning costs
- Secure wall or H-rail mounting

Electrical connection options

Multi-pin plug connection



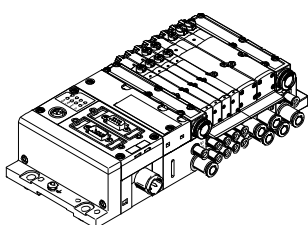
Control signals from the controller to the valve terminal are transmitted via a pre-assembled multi-wire connecting cable or a self-assembled multi-pin plug connection, which substantially reduces installation time.

The valve terminals can be equipped with max. 24 solenoid coils. This corresponds to 4 to 24 MPA1 or 2 to 24 MPA2 valves, or a combination of both.

Versions

- Sub-D connection
- Connecting cable for multi-pin plug connections, fully assembled
- Multi-pin plug connection, for self-assembly

Fieldbus connection via the CPX system



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

Valve terminals with fieldbus interfaces can be configured with up to 16 manifold sub-bases. In conjunction with MPA1 and 8 solenoid coils per sub-base, up to 128 solenoid coils can thus be actuated. An MPA2 with 4 solenoid coils per sub-base can actuate 64 solenoid coils.

Versions

- PROFIBUS DP
- PROFINET
- INTERBUS
- DeviceNet® connection
- CANopen
- CC-LINK
- EtherNet/IP
- Front end controller remote
- Front end controller Remote I/O
- Modbus/TCP
- PROFINET IO
- EtherCAT®
- CPX terminal

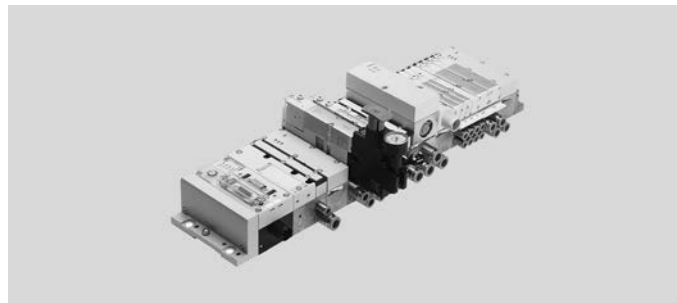
Data sheet

Valve terminal with multi-pin plug or fieldbus connection

Flow rate
MPA1: up to 360 l/min
MPA2: up to 700 l/min

Voltage
24 V DC

Valve width
10 mm
20 mm



Technical data		Download CAD data → www.festo.com
Max. no. of valve positions	Multi-pin plug connection	24
	Fieldbus connection	64
Lubrication	Life-time lubrication, PWIS-free (free of paint-wetting impairment substances)	
Type of mounting	Wall mounting	
	On H-rail to EN 60715	
Manual override	Non-detenting, detenting	
Nominal voltage	[V DC]	24
Operating voltage range	[V DC]	18 ... 30

Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[bar] -0.9 ... +10
Pilot pressure	[bar] 3 ... 8
Ambient temperature	[°C] -5 ... +50

Current consumption per solenoid coil at nominal voltage (multi-pin plug connection)			
		Width	
		10 mm	20 mm
Nominal pick-up current	[mA]	80	100
Nominal current with current reduction	[mA]	25	20
Time until current reduction	[ms]	25	50

Current consumption per solenoid coil at nominal voltage (fieldbus connection)			
		Width	
		10 mm	20 mm
Nominal pick-up current	[mA]	58	99
Nominal current with current reduction	[mA]	9	18
Time until current reduction	[ms]	24	24

Valve terminals MPA-S

Data sheet

Technical data – Valve width 10 mm															
Code for position function			M	J	N	K	H	B	G	E	X	W	D	I	
Switching times	On	[ms]	10	10	10	10	10	10	10	10	10	10	10	10	
	Off	[ms]	20	–	20	20	20	35	35	35	20	20	20	20	
	Change-over	[ms]	–	15	–	–	–	15	15	15	–	–	–	–	
Operating pressure		[bar]	–0.9 ... +10			3 ... 10			–0.9 ... +10					3 ... 10	
Standard nominal flow rate		[l/min]	360	360	300	230	300	300	320	240	255	255	230	260	
Design			Piston spool valve												
Materials			Die-cast aluminium												

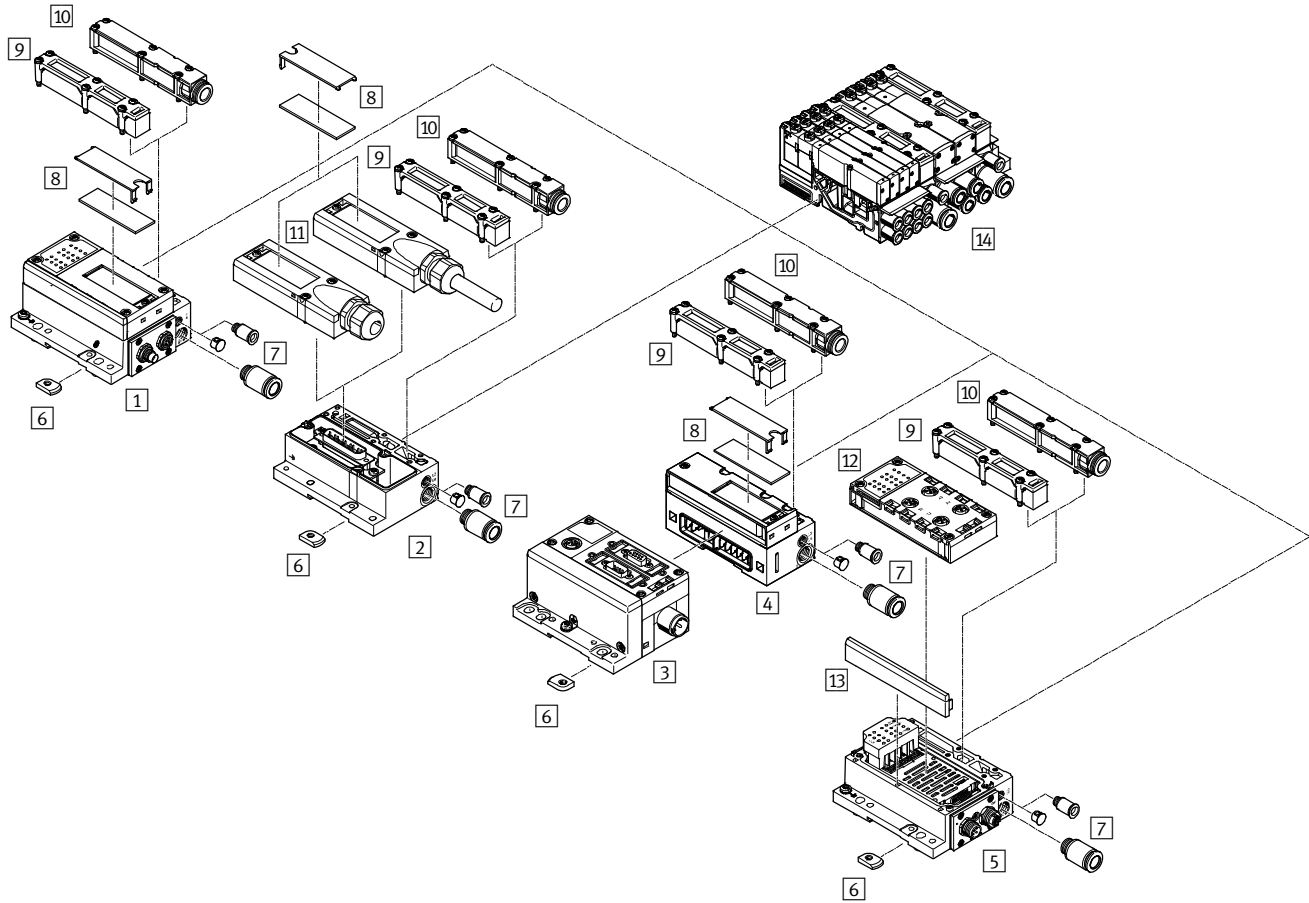
Technical data – Valve width 10 mm											
Code for position function			MS	NS	KS	HS	DS	MU	NU	KU	HU
Switching times	On	[ms]	10	14	14	14	14	10	8	8	8
	Off	[ms]	27	16	16	16	16	12	8	10	10
	Change-over	[ms]	–	–	–	–	–	–	–	–	–
Operating pressure		[bar]	–0.9 ... +8					–0.9 ... +10			
Standard nominal flow rate		[l/min]	360	300	230	300	230	190	190	160	190
Design			Piston spool valve					Poppet valve with spring return			
Materials			Die-cast aluminium					PPA reinforced			

Technical data – Valve width 20 mm																			
Code for position function 1-32		M	J	N	K	H	B	G	E	X	W	D	I	MS	NS	KS	HS	DS	
Switching times	On	[ms]	15	9	8	8	8	11	10	11	13	13	7	7	8	12	12	12	
	Off	[ms]	28	–	28	28	28	46	40	47	22	22	25	25	36	25	25	25	
	Change-over	[ms]	–	22	–	–	–	23	21	23	–	–	–	–	–	–	–	–	
Operating pressure		[bar]	–0.9 ... +10				3 ... 10				–0.9 ... +8								
Standard nominal flow rate		[l/min]	700	670	550	500	550	510	610	590	470	470	650	680	670	550	500	550	
Design		Piston spool valve																	
Materials		Die-cast aluminium																	

Pneumatic connections		
Pneumatic connection		Via manifold block or individual connection
Supply port	1	G1/4 (M7 with individual sub-base)
Exhaust port	3/5	QS-10, QS-3/8" (M7 with individual sub-base)
Working ports	2/4	Depending on the connection type selected MPA1: M7, QS4, QS6, 3/16", 1/4" MPA2: G1/8, QS6, QS8, 1/4", 5/16"
Pilot air port	12/14	M7 (M5 with individual sub-base)
Pilot exhaust air port	82/84	M7 (M5 with individual sub-base and with end plate VMPA-EPR-G)
Pressure compensation port		With ducted exhaust air: via port 82/84 (M5 with individual sub-base and with end plate VMPA-EPR-G) With flat plate silencer: exhausting to atmosphere

Materials	
Manifold block	Die-cast aluminium
Seals	NBR, elastomer
Supply plate	Die-cast aluminium
Right-hand end plate	Die-cast aluminium
Left-hand pneumatic interface	Die-cast aluminium, PA
Exhaust plate	PA
Flat plate silencer	PE
Electrical supply plate	Housing: Die-cast aluminium End cap: PA reinforced
Electronics module	PA
Electrical interlinking module	Bronze/PBT
Regulator plate	Control section, housing: PA; seals: NBR

Accessories

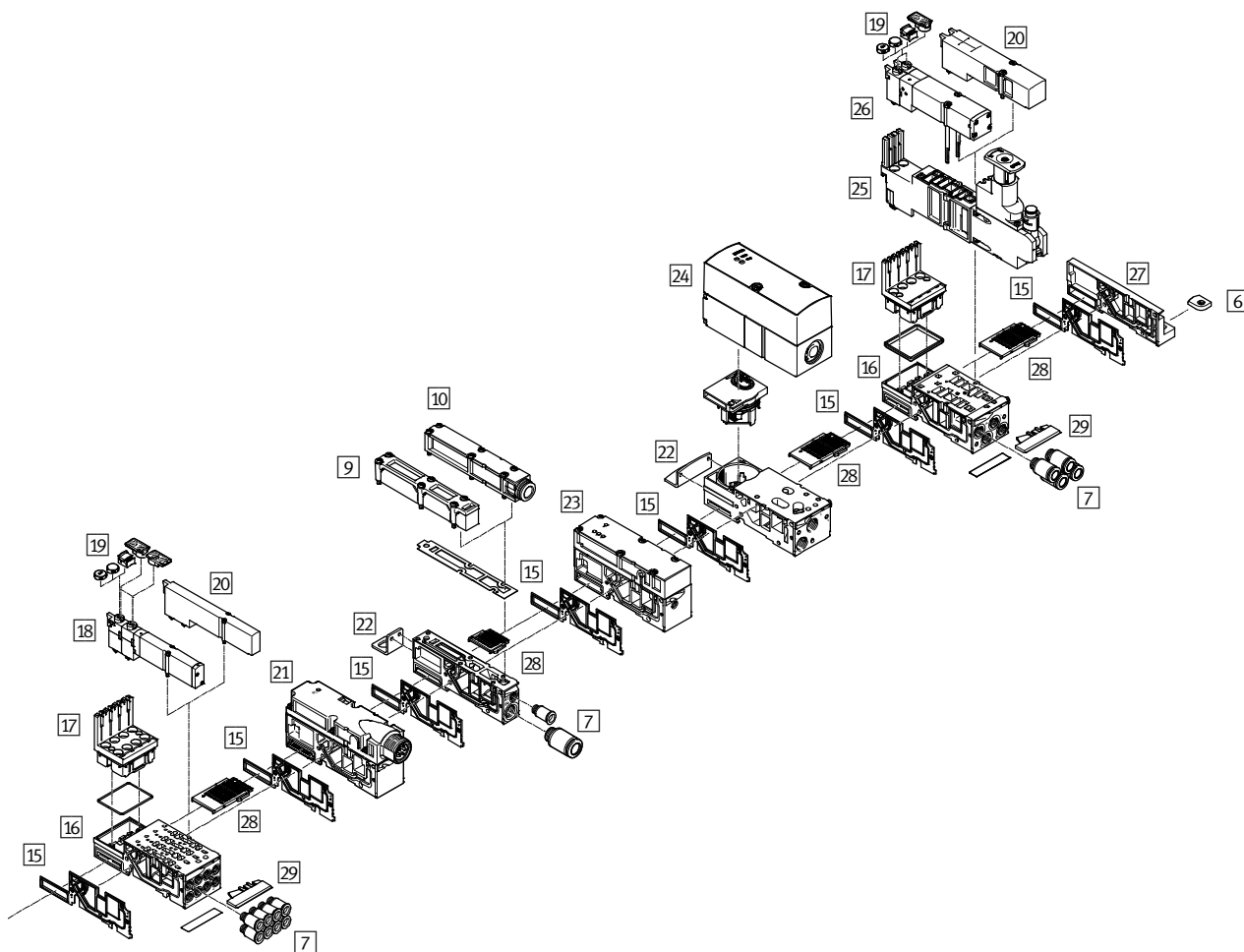


Accessories		→ Page/online
1	End plate with CPI connection VMPA-CPI-EPL	cpi
2	End plate with multi-pin plug connection VMPA1-MPM-EPL	mpa-s
3	Electrical terminal CPX	1597
4	End plate with pneumatic interface for CPX terminal VMPA-FB-EPL	1133
5	End plate with AS-Interface connection VMPA-ASI-EPL	as-interface
6	Mounting for H-rail CPX-CPA-BG-NRH	1137
7	Push-in fitting QS	1137
8	Inscription label holder and inscription label	mpa-s
9	Flat plate silencer VMPA-APU	mpa-s
10	Exhaust plate for ducted exhaust air VMPA-AP	mpa-s
11	Connecting cable for multi-pin plug connection VMPAL-KM	1137
12	Manifold block for AS-Interface CPX-AB	as-interface
13	Cover for AS-Interface connection	as-interface
14	Valve terminal, pneumatic part	1133

Universal valve terminals >

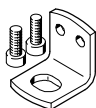
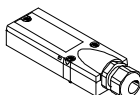
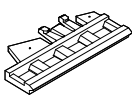
Valve terminals MPA-S

Accessories



Accessories		→ Page/online
6	Mounting for H-rail CPX-CPA-BG-NRH	1137
7	Push-in fitting QS	1137
9	Flat plate silencer VMPA-APU	mpa-s
10	Exhaust plate for ducted exhaust air VMPA-AP	mpa-s
15	Separating seal for manifold block VMPA-DP	mpa-s
16	Sub-base VMPA-FB, VMPA-AP	mpa-s
17	Electronics module VMPA-FB-EM, VMPA-MPM-EMM	mpa-s
18	Solenoid valve size 10 mm VMPA1-M1H-PI	1134
19	Cover cap for manual override VMPA-HB, VAMC-L1-CD, ASLR-D-L1	1137
20	Cover plate VMPA-RP for valve position	mpa-s
21	Electrical supply plate VMPA-FB-SP	mpa-s
22	Mounting VMPA-BG	1137
23	Pressure sensor VMPA-FB-PS	mpa-s
24	Proportional pressure regulator VPPM-TA-L-1-F-OL	mpa-s
25	Vertical stacking modules (pressure regulator plate, vertical pressure supply plate, vertical pressure shut-off plate, check valve, fixed flow restrictor) VMPA	mpa-s
26	Solenoid valve size 20 mm VMPA2-M1H-PI	1134
27	Right-hand end plate VMPA-EPR	mpa-s
28	Electrical interlinking module VMPA-EV	mpa-s
29	Inscription label holder for manifold block VMPA-ST	1137

Accessories – Ordering data

	Code ¹⁾	Description	Part no.	Type
6 Mounting				
	–	For mounting on H-rail, 3 pieces	526032	CPX-CPA-BG-NRH
	J	Mounting bracket for supply plate	534416	VMPA-BG-RW
7 Push-in fitting				
	–	Connecting thread M5 for working ports, 10 pieces, connection for tubing O.D.	3 mm	★ 153313 QSM-M5-3-I
			4 mm	★ 153315 QSM-M5-4-I
			6 mm	★ 153317 QSM-M5-6-I
	–	Connecting thread M7 for working ports, 10 pieces, connection for tubing O.D.	4 mm	★ 153319 QSM-M7-4-I
			6 mm	★ 153321 QSM-M7-6-I
	–	Connecting thread G1/8 for supply ports, 10 pieces, connection for tubing O.D.	6 mm	★ 186107 QS-G1/8-6-I
			8 mm	★ 186109 QS-G1/8-8-I
	–	Connecting thread G1/4 for supply ports, 10 pieces, connection for tubing O.D.	8 mm	★ 186110 QS-G1/4-8-I
		10 mm	★ 186112 QS-G1/4-10-I	
11 Connecting cable for multi-pin plug connection				
	K	Cover without connecting cable for self-assembly	533198	VMPA-KMS-H
	GD	PUR interconnecting cable for 24 solenoid coils, suitable for energy chains	2.5 m	533501 VMPA-KMS2-24-2,5-PUR
	GE		5 m	533502 VMPA-KMS2-24-5-PUR
	GF		10 m	533503 VMPA-KMS2-24-10-PUR
19 Cover cap for manual override				
	N	Manual override, non-detenting (10 pieces)	540897	VMPA-HBT-B
	V	Manual override, blocked (10 pieces)	540898	VMPA-HBV-B
	Y	Manual override, detenting, can be used without accessories (10 pieces)	8002234	VAMC-L1-CD
	–	Inscription label holder for inscription label and cover for signal status display and manual override (blocked) (10 pieces)	570818	ASLR-D-L1
29 Inscription label holder				
	T	Inscription label holder for manifold block	For paper foil label	533362 VMPA1-ST-1-4
	–		For inscription labels IBS-6x10	544384 VMPA1-ST-2-4
	–	Inscription labels 6 mm x 10 mm, 64 pieces in frames	18576	IBS-6x10

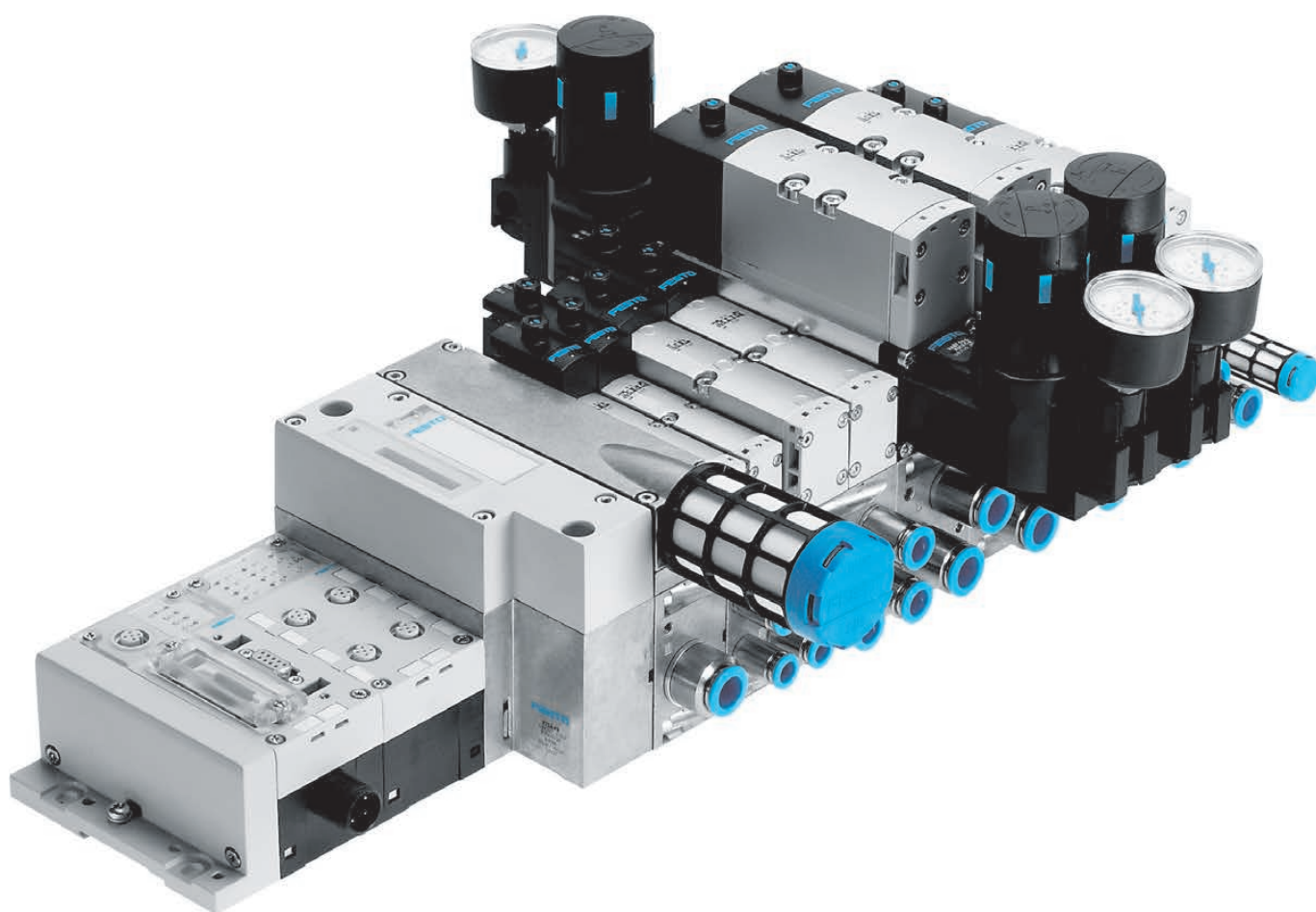
1) Code letter within the order code for a valve terminal configuration.

Universal valve terminals >

Valve terminals MPA-S

09

Valve terminals



Usable worldwide

- + Five valve sizes can be combined on one valve terminal
- + Comprehensive range of additional pneumatic functions
- + Flow rate up to 4000 l/min

Standards-based valve terminals >

Valve terminals, to ISO 15407-2, ISO 5599-2

VTSA

VTSA-CPX

VTSA-MP

VTSA-ASI

Standards-based valve terminals >

Valve terminals, to ISO 15407-2, ISO 5599-2

VTSA



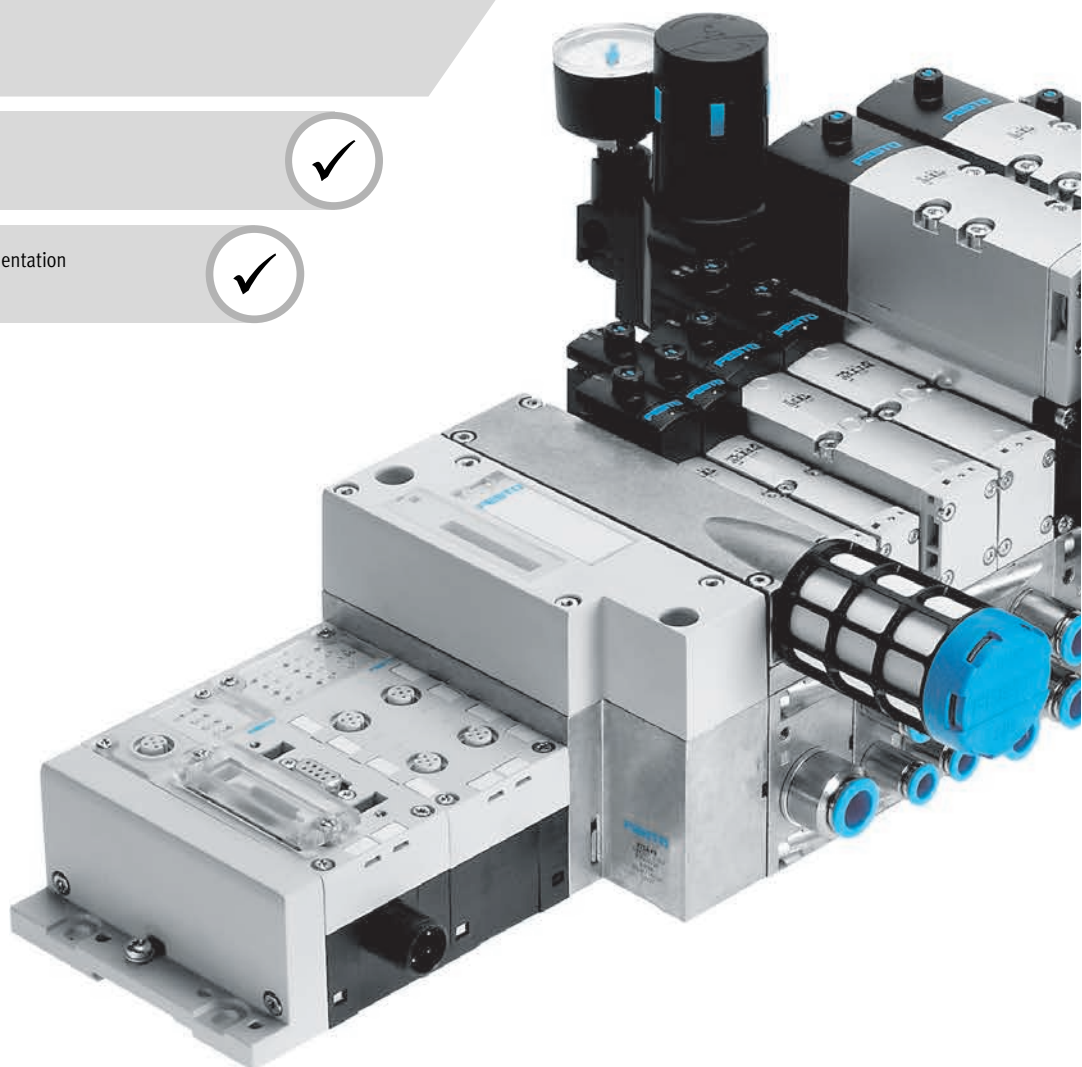
Overview, configuration and ordering

→ www.festo.com/catalogue/vtsa



Additional information, support and user documentation

→ www.festo.com/sp/vtsa



- + Sturdy and flexible valve terminal
- + Valve widths 18 mm, 26 mm, 42 mm, 52 mm and 65 mm can be combined on a single valve terminal
- + Complete and standardised valve range
- + Wide range of vertical stacking modules: pressure regulator, flow control valve, vertical pressure shut-off plate, etc.
- + Safety functions can be integrated

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Product range overview

Function	Version	Code	Size					→ Page/ online
			18 mm (ISO 02)	26 mm (ISO 01)	42 mm (ISO 1)	52 mm (ISO 2)	65 mm (ISO 3)	
Position function 1-32	5/2-way valve, single solenoid, with pneumatic spring return	M	■	■	■	■	■	1145
	5/2-way valve, single solenoid, with spring return	O	■	■	■	■	■	1145
	5/2-way valve, double solenoid	J	■	■	■	■	■	1145
	5/2-way valve, double solenoid, dominant	D	■	■	■	■	■	1145
	2x 3/2-way valve, normally open	N	■	■	■	■	–	1145
	2x 3/2-way valve, normally closed	K	■	■	■	■	–	1145
	2x 3/2-way valve, 1x normally closed, 1x normally open	H	■	■	■	■	–	1145
	5/3-way valve, mid-position pressurised	B	■	■	■	■	■	1145
	5/3-way valve, mid-position closed	G	■	■	■	■	■	1145
	5/3-way valve, mid-position exhausted	E	■	■	■	■	■	1145
	2x 3/2-way valve, normally open, reverse operation	P	■	■	■	■	–	1145
	2x 3/2-way valve, normally closed, reverse operation	Q	■	■	■	■	–	1145
	2x 3/2-way valve, 1x normally closed, 1 x normally open, reverse operation	R	■	■	■	■	–	1145
	2x 2/2-way valve, normally closed	VC	■	■	■	■	–	1145
	2x 2/2-way valve, normally closed, vacuum operation	VV	■	■	■	–	–	1145
	5/2-way control block with individual connection plug type C and switching position sensing via PNP sensor, plug M8	SP	–	■	–	–	–	1145
	5/2-way control block with individual connection plug type C and switching position sensing via NPN sensor, M8 plug	SN	–	■	–	–	–	1145
	5/3-way valve, mid-position flow from 1 to 2, closed in 4	VG	–	–	■	■	–	vtsa
	5/3-way valve, mid-position exhausted, switching position 14 detenting, 12 mechanical spring	SA	■	■	–	–	–	vtsa
	5/3-way valve, mid-position port 2 pressurised, port 4 ex- hausted, switching position 14 detenting, 12 mechanical spring	SB	■	■	–	–	–	vtsa
	5/3-way valve, mid-position port 4 pressurised, port 2 ex- hausted, switching position 14 detenting, 12 mechanical spring	SD	■	■	–	–	–	vtsa
	5/3-way valve, mid-position exhausted, switching position 12 detenting, 14 mechanical spring	SE	■	■	–	–	–	vtsa
	5/2-way valve, single solenoid, with spring return and switching position sensing via PNP sensor, M8 plug	SO	■	■	–	–	–	vtsa
	5/2-way valve, single solenoid, with spring return and switching position sensing via NPN sensor, M8 plug	SQ	■	■	–	–	–	vtsa
	5/2-way valve, single solenoid, with spring return and switching position sensing via PNP sensor, 0.5 m cable and M12 plug	SS	■	■	–	–	–	vtsa
	Vacuum generator with ejector pulse and adjustable air saving function (plate for 2 valve positions, sensor SDE3 with display and M12 connection)	VB	–	■	–	–	–	vtsa
	Vacant position	L	■	■	■	■	■	vtsa

Note

Valve terminals can be ordered quickly and easily online.
The convenient product configurator can be found at:

→ www.festo.com/catalogue/vtsa

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Key features

Innovative

- High-performance valves in a sturdy metal housing
- Five valve sizes on one valve terminal (width 65 mm with adapter)
- Standardised from the multi-pin plug to the fieldbus connection and control block
- Dream team: fieldbus valve terminal suitable for electrical peripherals CPX. This means:
 - Forward-looking internal communication system for controlling the valves and CPX modules
 - Four valve sizes on one valve terminal without adapters
- Valve functions for integration in control architectures of higher categories to EN ISO 13849-1

Versatile

- Modular system offering a range of configuration options
- Expandable with up to 32 solenoid coils
- Conversions and extensions are possible at any time
- Manifold sub-bases can be extended using four screws, sturdy duct separation on metal support
- Integration of innovative function modules possible
- Supply plates enable a flexible air supply and variable pressure zones
- Reverse operation
- High pressure range
 - 0.9 ... 10 bar, flow range 550 ... 4000 l/min
- Wide range of valve functions
- Valve supply 24 V DC or 110 V AC

Reliable

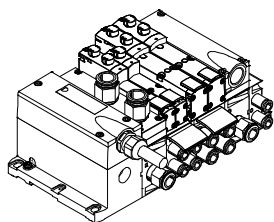
- Sturdy and durable metal components
 - Valves
 - Manifold sub-bases
 - Seals
- Fast troubleshooting thanks to LEDs on the valves and diagnostics via fieldbus
- Reliable servicing thanks to valves that can be replaced quickly and easily
- Manual override, either non-detenting, non-detenting/detenting or covered
- Durable thanks to tried-and-tested piston spool valves
- Large and durable labelling system
- 100% duty cycle

Easy to install

- Assembled and inspected unit, ready for installation
- Reduced selection, ordering, installation and commissioning costs
- Secure mounting on wall or H-rail

Electrical connection options

Multi-pin plug connection



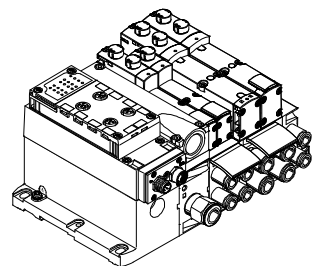
Control signals from the controller to the valve terminal are transmitted via a pre-assembled multi-wire connecting cable or a self-assembled multi-pin

plug connection, which substantially reduces installation time. The valve terminal can be equipped with max. 32 valves with max. 32 solenoid coils.

Versions

- Multi-pin plug connection with terminal strip (spring-loaded terminal)
- Connecting cable for multi-pin plug connections, fully assembled (Sub-D)
- Sub-D plug connector for assembly by the user, 37-pin
- Round plug connector M23, 19-pin

AS-Interface connection



A special feature of the AS-Interface is the simultaneous transmission of data and supply power via a two-wire cable. The encoded cable profile prevents connection with incorrect polarity. The valve terminal with AS-Interface is available in the following versions:

- With one to eight modular valve positions (max. 8 solenoid coils). This corresponds to 1 to 8 VTSA valves.
- With all available valve functions.

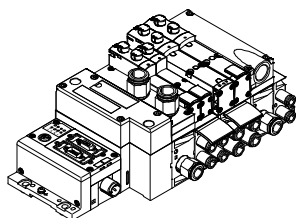
The connection technology used for the inputs can be selected as with CPX: M8, M12, quick connector, Sub-D, spring-loaded terminal (terminals to IP20).

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Key features

Electrical connection options

Fieldbus connection via the CPX system



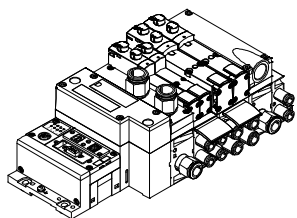
An integrated fieldbus node manages the communication connection with a higher-order PLC. This enables a space-saving pneumatic and electronic solution.

Valve terminals with fieldbus interfaces can be configured with up to 16 manifold sub-bases. With 2 solenoid coils per connection, up to 32 solenoid coils can thus be actuated.

Versions:

- PROFIBUS
- INTERBUS®
- DeviceNet®
- CANopen
- CC-LINK®
- EtherNet/IP
- EtherCAT®
- Modbus TCP®
- PROFINET
- POWERLINK
- Sercos III

Control block connection via the CPX system

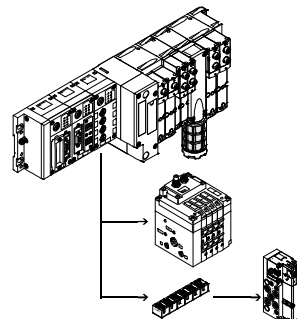


A controller integrated in the Festo valve terminal enables the construction of stand-alone control units with protection to IP65 without a control cabinet thanks to two different operating modes.

In the slave operating mode, these valve terminals can be used for intelligent pre-processing and are therefore ideal modules for designs using decentralised intelligence.

In the master operating mode, terminal groups can be designed with many options and functions that can autonomously control a medium-sized machine/system.

CP string extension



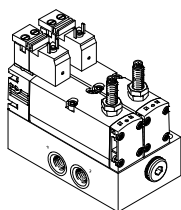
The optional CP string extension enables additional valve terminals and I/O modules to be connected to the fieldbus node of the CPX terminal on up to 4 CP strings. Different input and output modules as well as valve terminals MPA-S and CPV can be connected.

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

One CP string offers:

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

Control block with safety function, width 26 mm



These valves are used for special applications, for example for:

- Protecting against unexpected start-up
- Safe reversing
- Drives in manually loaded devices

This control block is suitable for use as a press safety valve to EN 962.

This valve is a safety device in accordance with the Machinery Directive 2006/42/EC.

Standards-based valve terminals >

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Key features

Modular pneumatic components

The modular design of the VTSA/VTSA-F enables maximum flexibility right from the planning stage and offers maximum ease of service in operation.

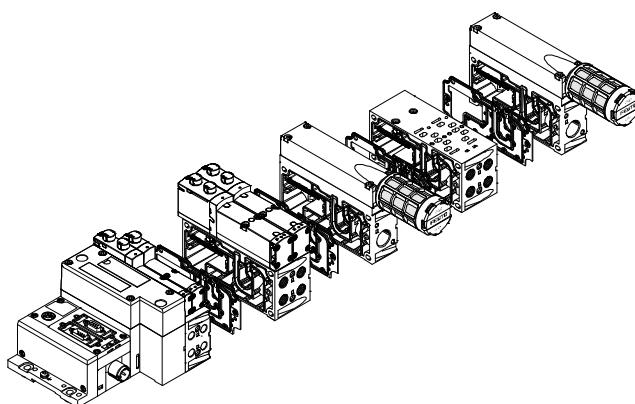
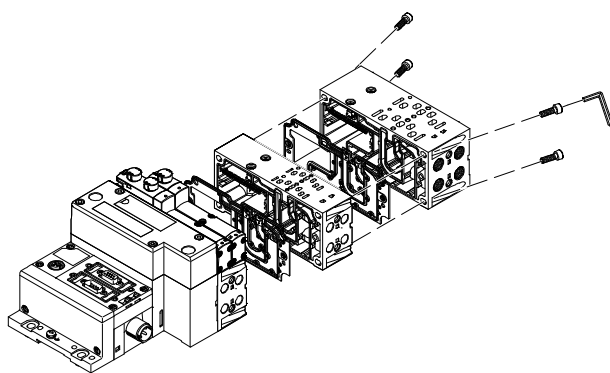
The system consists of manifold sub-bases and valves.

The manifold sub-bases are screwed together and thus form the support system for the valves.

Inside the manifold sub-bases are the ducts for supplying compressed air to

and exhausting from the valves on the terminal as well as the working ports for the pneumatic cylinders for each valve. Each manifold sub-base is connected to the next using four screws.

Individual valve terminal sections can be isolated and further blocks easily inserted by loosening these screws. This ensures that the valve terminal can be rapidly and reliably extended.



09

Modular electrical peripherals

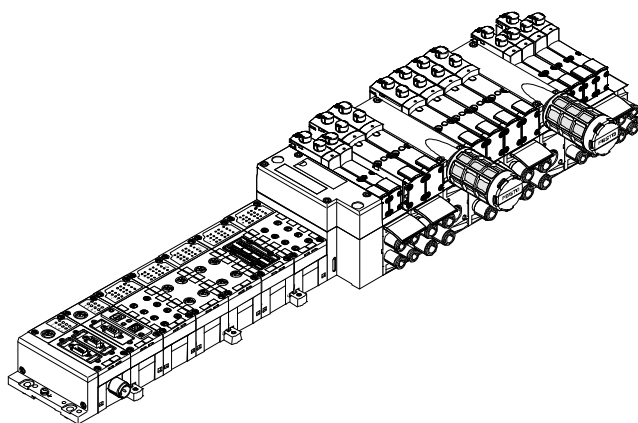
How the valves are actuated differs according to whether you are using a multi-pin terminal or fieldbus terminal.

The VTSA/VTSA-F with CPX interface is based on the internal bus system of the CPX terminal and uses this communication system for all solenoid coils and a range of electrical input and output functions.

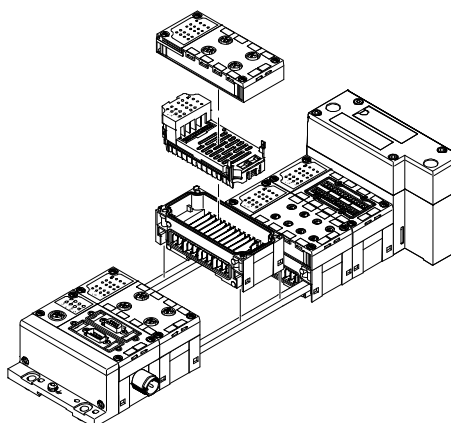
Parallel linking enables the following:

- Transmitting switching information
- Compact design
- Position-based diagnostics
- Separate voltage supply for valves
- Flexible conversion without address shifting
- Transmitting status, parameter and diagnostic data

VTSA with electrical peripherals CPX



Modularity with electrical peripherals CPX



Valve terminals

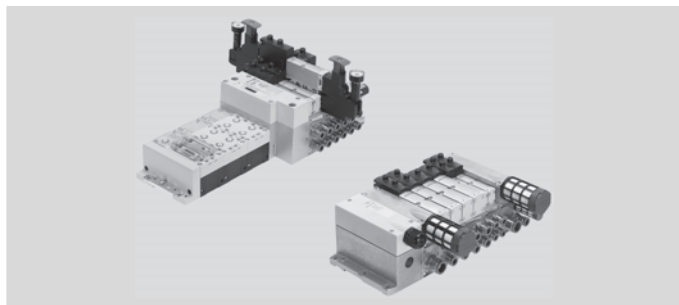
Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Data sheet

Flow rate
Up to 2900 l/min

Operating voltage
24 V DC
110 V AC

Valve width
18 mm
26 mm
42 mm
52 mm



Technical data

Download CAD data → www.festo.com

Design		Piston spool
Width	[mm]	18/26/42/52
Lubrication		Life-time lubrication
Type of mounting		Wall mounting
		On H-rail to EN 60715
Manual override		Detenting, non-detenting, covered
Pneumatic connection		Via manifold sub-base
Supply port	1	Thread G1/2, push-in connector for tubing O.D. 12 mm/16 mm
Exhaust port	3.5	Thread G1/2, push-in connector for tubing O.D. 12 mm/16 mm
Working ports (dependent on the connection type)	Width 18 mm (ISO 02)	2.4 Thread G1/8
	Width 26 mm (ISO 01)	2.4 Thread G1/4
	Width 42 mm (ISO 1)	2.4 Thread G3/8
	Width 52 mm (ISO 2)	2.4 Thread G1/2
External pilot air port	12, 14	Thread G1/4

Technical data

Download CAD data → www.festo.com

Valve function/order code		N	K	H	P	Q	R	M	O	J	D	B	G	E	VC	VV
Valve switching times [ms]																
Width 18 mm (ISO 02) Nominal operating voltage 24 V DC/110 V AC	On	12	12	12	25	25	25	22	12	–	–	15	15	15	12	12
	Off	30	30	30	12	12	12	28	38	–	–	44	44	44	30	30
	Change-over	–	–	–	–	–	–	–	–	11	13	–	–	–	–	–
Width 26 mm (ISO 01) Nominal operating voltage 24 V DC/110 V AC	On	20	20	20	32	32	32	25	20	–	–	22	22	22	20	20
	Off	38	38	38	30	30	30	45	65	–	–	65	65	65	38	38
	Change-over	–	–	–	–	–	–	–	–	18	21	–	–	–	–	–
Width 42 mm (ISO 1) Nominal operating voltage 24 V DC	On	20	20	20	34	34	34	27	22	–	–	22	22	22	20	20
	Off	38	38	38	28	28	28	45	60	–	–	65	65	65	38	38
	Change-over	–	–	–	–	–	–	–	–	16	19	38	38	38	–	–
Width 42 mm (ISO 1) Nominal operating voltage 110 V AC	On	22	22	22	34	34	34	20	20	–	–	22	22	22	22	22
	Off	46	46	46	38	38	38	55	55	–	–	68	68	68	46	46
	Change-over	–	–	–	–	–	–	–	–	16	19	41	41	41	–	–
Width 52 mm (ISO 2) Nominal operating voltage 24 V DC	On	20	20	20	20	20	20	40	20	–	–	23	23	23	14	–
	Off	35	35	35	35	35	35	45	60	–	–	60	60	60	35	–
	Change-over	–	–	–	–	–	–	–	–	18	18	38	38	38	–	–
Width 52 mm (ISO 2) Nominal operating voltage 110 V AC	On	35	35	35	50	50	50	70	25	–	–	30	30	30	35	–
	Off	70	70	70	65	65	65	90	110	–	–	100	100	100	70	–
	Change-over	–	–	–	–	–	–	–	–	35	42	60	60	60	–	–
Standard nominal flow rate on valve terminal [l/min]																
Width 18 mm (ISO 02)		400				550				450				500		
Width 26 mm (ISO 01)		900				1100				1000				1000		
Width 42 mm (ISO 1)		1200				1300				1200				1400		
Width 52 mm (ISO 2)		2400				2900				2800				2800		

Standards-based valve terminals >

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Data sheet

Operating conditions		N	K	H	P	Q	R	M	O	J	D	B	G	E	VC	W		
Valve function/order code																		
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]																
Pilot medium		Compressed air to ISO 8573-1:2010 [7:4:4]																
Note on 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																
Operating pressure	[bar]	3 ... 10			−0.9 ... +10										3 ... 10		−0.9 ... +10	
Operating pressure for valve terminal with internal pilot air supply		3 ... 10																
Pilot pressure		3 ... 10																

Electrical data – VTSA with CPX terminal		N	K	H	P	Q	R	M	O	J	D	B	G	E	VC	W
Valve function/order code																
Power supply for electronics (U _{EL} /SEN)																
Operating voltage	[V DC]	24 ±10%														
Max. intrinsic current consumption at 24 V DC	[mA]	20														
Duty cycle		100%														
Load voltage supply for valves (U _{val})																
Operating voltage	[V DC]	24 ±10%														
Degree of protection to EN 60529		IP65, NEMA 4 (for all types of signal transmission in mounted state)														

Pneumatic connection sizes		
Right-hand end plate (duct 12, 14)	Code V, X	Thread G1/4
	Code V1, V3, X1, X3	Thread G1/4
Right-hand end plate (duct 1, 3, 5)	Code V, X	Thread G1/2
	Code V1, V3, X1, X3	Thread G3/4
Left-hand supply plate (duct 1, 3, 5)		Thread G1/2
Manifold sub-base (duct 2, 4)	Width 18 mm	Thread G1/8
	Width 26 mm	Thread G1/4
	Width 42 mm	Thread G3/8
	Width 52 mm	Thread G1/2

Materials	
Manifold sub-base	Die-cast aluminium
Valve	Die-cast aluminium, PA
Seals	FPM, NBR, HNBR
Supply plate	Die-cast aluminium
Right-hand end plate	Die-cast aluminium
Pneumatic interface for CPX	Die-cast aluminium
Flow control plate	Die-cast aluminium
Pressure regulator plate	Die-cast aluminium, PA
Multi-pin connection block	Die-cast aluminium
Cover for the pneumatic interface and multi-pin plug connection	PA
Note on materials	RoHS-compliant

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Data sheet – Control block, VOFA

Flow rate

Up to 950 l/min

Operating voltage

24 V DC

Operating pressure

3 ... 10 bar

Description

The control block is designed for two-channel actuation of pneumatic drive components such as double-acting linear cylinders, for example, and can be used to realise the following protective measures:

- Protection against unexpected start-up (EN 1037)
- Reversing hazardous movements, provided the reversing motion will not result in further hazards

The control attributes of the control block enable Performance Level e to be achieved for the protective measures. The control block has been developed and manufactured in accordance with the basic and proven safety principles of EN ISO 13849-1 and EN ISO 13849-2.

The requirements of EN ISO 13849-1 and EN ISO 13849-2 (e.g. CCF, DC) must be taken into consideration for implementation and operation of the component and for use in higher categories (2 to 4).

When using this product in machines or systems subject to specific C standards, the requirements specified in these standards must be observed.

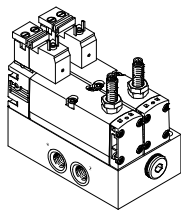
The control block with safety function is designed for installation in machines and automation systems and must only be used in industrial applications (high-demand mode).

The control block with safety function is suitable for use as a press safety valve to EN 962.

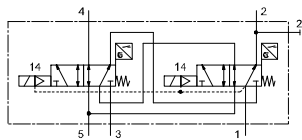
More information and technical data

➔ Internet: User documentation

Decentralised individual connection variant



Two solenoid valves on manifold sub-base with square plugs to EN 175301-803, type C and integrated piston position sensing.



Function – Pneumatic/electrical interlinking

The safety function is achieved through two-channel pneumatic linking of two 5/2-way single solenoid valves within the control block: port 4 is only pressurised if both solenoid valves are switched to switching position (14).

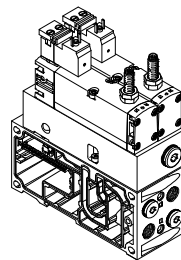
Port 2 is always pressurised if at least one of the two solenoid valves is in normal position.

The valve is reset via a mechanical spring.

The switching operation of the solenoid valves can be monitored by sensing via the proximity sensors at the solenoid valves (switching position sensing).

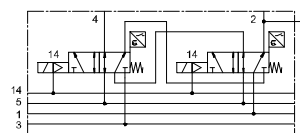
This is done by means of logic operation

Version for valve terminal VTSA/VTSA-F



Two solenoid valves on manifold sub-base for valve terminal VTSA/VTSA-F with square plugs and integrated piston position sensing.

Electrical actuation takes place independently of the valve terminal (individual, multi-pin plug or fieldbus/control block connection) via a standardised square plug to EN 175301-803, type C.



of the control signal and the signal change of the proximity sensor to check whether the piston spools of the solenoid valves are reaching or leaving the normal position (expectations).

The piston spools of the solenoid valves are designed so that pneumatic short circuits between ports 2 and 4 are ruled out (non-overlapping).

The two solenoid valves must be actuated via two separate ducts to achieve the desired category 4 (Performance Level e, to EN ISO 13849-1).

Standards-based valve terminals >

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Data sheet – Control block, VOFA

Technical data		Download CAD data → www.festo.com	
Type		VOFA-L26-T52-M-G14-1C1 (individual sub-base)	VOFA-B26-T52-M-1C1 (on valve terminal)
Design		Piston spool valve	
Sealing principle		Soft	
Type of actuation		Electric	
Type of control		Piloted	
Pilot air supply		Internal	Via valve terminal
Type of mounting		Via through-hole, on manifold sub-base	
Mounting position		Any	
Manual override		None	
Valve switching status display		Via accessories	
Standard nominal flow rate	[l/min]	950	830
Performance Level (PL)		Protection against manipulation, prevention of unexpected start-up, up to Category 4, Performance Level e	
		Reversing a movement, up to Category 4, Performance Level e	
Switching times [ms]			
Valve switching time	On	22	22
	Off	56	59
Valve sensor switching time ¹⁾	On	60	60
	Off	11	11

- 1) Valve sensor switching time off: period of time from coil being energised to sensor being switched off when using a PNP sensor.
Valve sensor switching time on: period of time from coil being de-energised to 0-L edge at the sensor when using a PNP sensor.

Operating conditions			
Type		VOFA-L26-T52-M-G14-1C1 (individual sub-base)	VOFA-B26-T52-M-1C1 (on valve terminal)
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on 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	
Operating pressure	[bar]	3 ... 10	0 ... 10
Pilot pressure	[bar]	3 ... 10	
Max. positive test pulse with logic 0	[µs]	1000	
Max. negative test pulse with logic 1	[µs]	800	

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Data sheet – Control block, VOFA

Electrical data – Control block		
Electrical connection		Plug to EN 175301-803, type C, without protective conductor
Nominal operating voltage	[V DC]	24
Power consumption	[W]	1.8
Max. magnetic interference field	[mT]	60
Switching position sensing		Normal position via sensor
Duty cycle	[%]	100
Degree of protection to EN 60529		IP65, NEMA 4 (for all types of signal transmission in mounted state)

Electrical data – Sensor		
Electrical connection		Cable, 3-wire Plug M8x1, 3-pin
Cable length	[m]	2.5
Switching output		PNP or NPN
Switching element function		N/C contact
Signal status display		Yellow LED
Operating voltage range	[V DC]	10 ... 30
Sensor idle current	[mA]	Max. 10
Max. output current	[mA]	200
Voltage drop	[V]	Max. 2
Max. switching frequency	[Hz]	5000
Measuring principle		Inductive

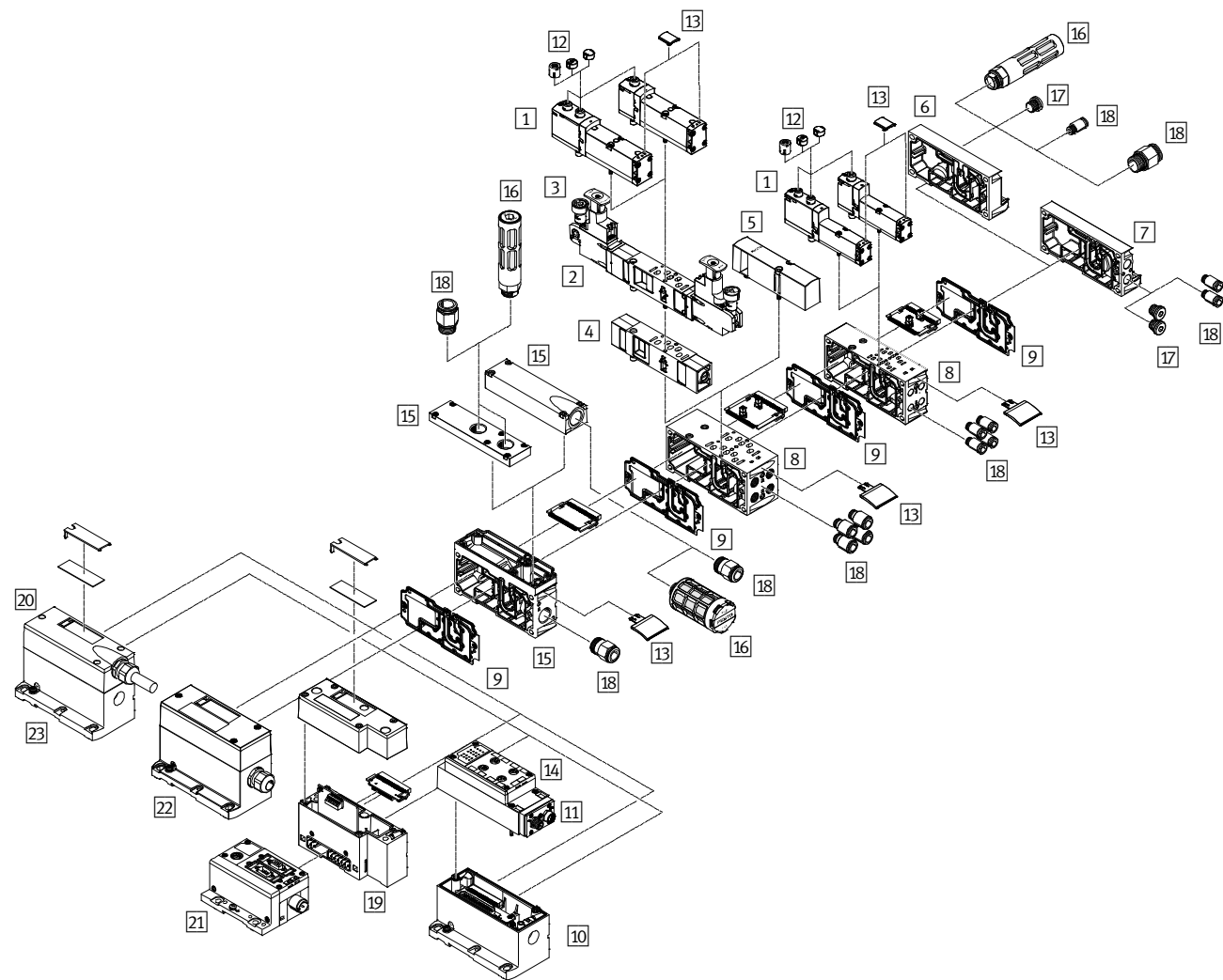
Connection sizes of the pneumatic connections			
Type		VOFA-L26-T52-M-G14-1C1 (individual sub-base)	VOFA-B26-T52-M-1C1 (on valve terminal)
Supply port	1	Thread G1/4	Via the manifold sub-base of the valve terminal
Exhaust port	3/5, 33	Thread G1/4	
Working ports	2/4	Thread G1/4	
Pilot air supply	14	–	
Pressure gauge		Thread G1/4	Thread G1/4

Materials	
Sub-base/manifold sub-base	Wrought aluminium alloy
Valve	Die-cast aluminium, PA
Seals	FPM, NBR, HNBR
Screws	Galvanised steel
Sensor housing	High-alloy stainless steel
Sensor cable sheath	PUR
Note on materials	RoHS-compliant

Standards-based valve terminals >

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Accessories



Accessories	→ Page/online
1 Solenoid valve VSVA	1145
2 Regulator plate VABF	vtsa
3 Accessories for regulator plate (pressure gauge PAGN, cartridge fitting QSP)	1153
4 Additional vertical stacking modules (flow control plate, vertical supply plate or vertical pressure shut-off plate) VABF	vtsa
5 Blanking plate VABB for vacant position	vtsa
6 Right-hand end plate VABE with ports for supply air/exhaust air	vtsa
7 Right-hand end plate VABE with pilot air selector	vtsa
8 Manifold sub-base VABV	vtsa
9 Duct separator VABD	vtsa
10 Electrical interface VABE for AS-Interface (delivery unit with AS-Interface module VAEM)	vtsa-asi
11 AS-Interface module VAEM	vtsa-asi
12 Cover cap VAMC for non-detenting/covered manual override	1153
13 Inscription label ASCF	1153

Accessories	→ Page/online
14 Connection block for AS-Interface CPX-AB	vtsa-asi
15 Supply plate VABF with ducted exhaust air, ports 3 and 5 separated or combined	vtsa
16 Silencer U	1153
17 Blanking plug B	1153
18 Push-in fitting QS	1153
19 Pneumatic interface VABA	1629
20 Multi-pin plug connection NEBV/NECV with connecting cable or cover for self-assembly	vtsa
21 Fieldbus interface CPX-FB	1597
22 Multi-pin plug connection VABE with terminal strip (spring-loaded terminal)	vtsa
23 Multi-pin plug connection VABE with connecting cable for multi-pin plug connections	vtsa
- Control block VOFA	1154
- Wall mounting VAME	1154
- 90° connection plate VABF	1154
- User documentation P.BE-VTSA	1154

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

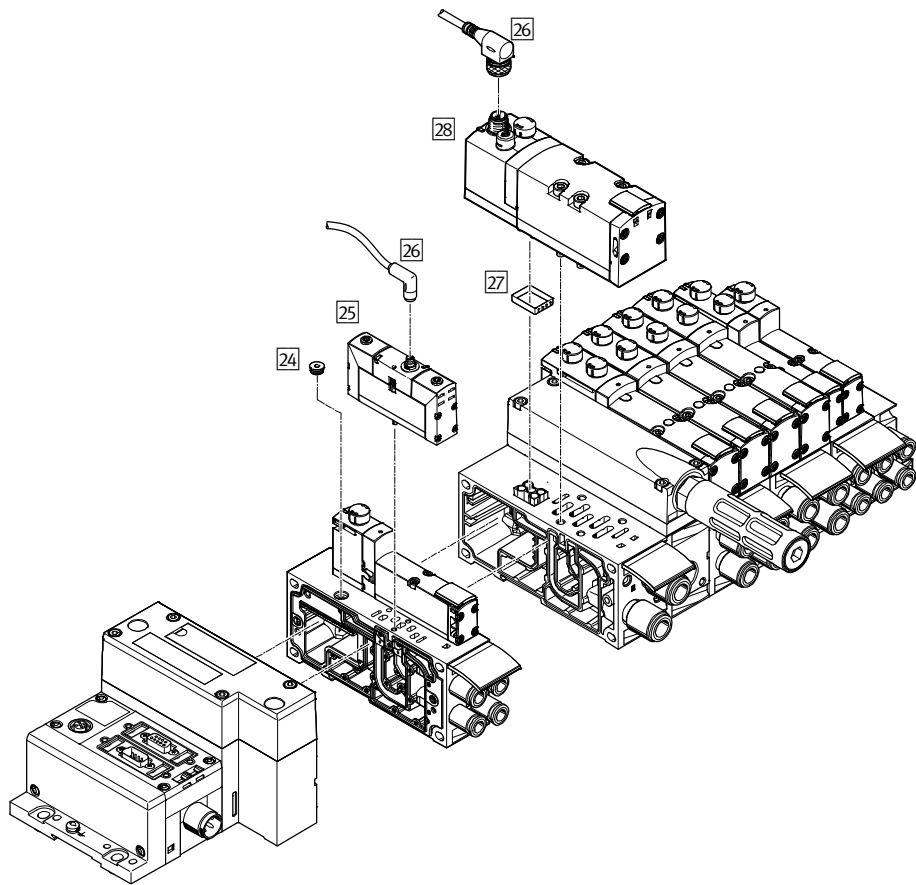
Accessories for valve with individual connection

In applications with specific emergency off conditions, it may be necessary to switch one or more valves separately from the valve terminal controller. Standard valves (VSVA) with individual electrical connection (round or square

plug) are therefore mounted on the valve terminal.
In order for protection to IP65 to be achieved, the functionless opening in the sub-base for the electrical connection must be sealed.

A sealing cap is available for width 18 mm and 26 mm. With manifold or individual sub-bases, valves with width 42 mm and 52 mm must be used with a seal to comply with the IP degree of protection.

For central control of the valve terminal via a multi-pin plug or fieldbus connection, the valve position occupied in this way acts like a vacant position, i.e. the assigned address in the fieldbus node or the corresponding connection in the multi-pin plug connection is occupied.

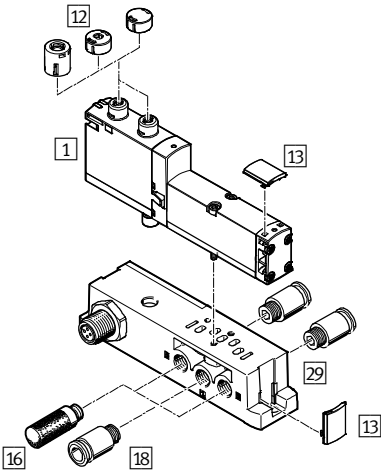


Accessories		→ Page/online
24	Sealing cap VABD	vtsa
25	Solenoid valve VSVA to ISO15407-1	983
26	Connecting cable NEBU	vsva
27	Seal VABD-S2	vtsa
28	Solenoid valve VSVA to ISO5599-1	1001
-	Control block VOFA	1154
-	Wall mounting VAME	1154
-	90° connection plate VABF	1154
-	User documentation P.BE-VTSA	1154

Standards-based valve terminals >

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

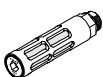
Accessories for valve on individual sub-base



Accessories		→ Page/online
1	Solenoid valve VSVA	1145
12	Cover cap VAMC for manual override	1153
13	Inscription label ASCF	1153
16	Silencer U	1153
18	Push-in fitting QS	1153
29	Individual sub-base VABS	vtsa
– Control block VOFA		1154
– Wall mounting VAME		1154
– 90° connection plate VABF		1154
– User documentation P.BE-VTSA		1154

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Accessories – Ordering data

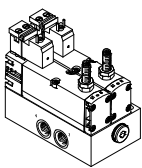
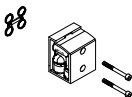
	Code ¹⁾	Description		Part no.	Type	
3 Accessories for regulator plate, pressure gauge for widths 18 mm and 26 mm						
Data sheets online: → pagn						
	U	6 bar, for regulator plate code ZF, ZG, ZH, ZI, ZJ, ZM, ZN	Widths 18 mm and 26 mm	543488	PAGN-26-10-P10	
			Widths 42 mm and 52 mm	548009	PAGN-40-10-P10	
	T	10 bar, for regulator plate code ZA, ZB, ZC, ZD, ZE, ZK, ZL	Widths 18 mm and 26 mm	543487	PAGN-26-16-P10	
			Widths 42 mm and 52 mm	548010	PAGN-40-16-P10	
Cartridge fitting						
Data sheets online: → qsp						
	–	Adapter for pressure gauge (allows products with threaded connection G1/8 to be attached to the cartridge fitting connection)		565811	QSP10-G1/8	
	–	For tubing O.D. 4 mm		172972	QSP10-4	
12 Cover cap for manual override						
	N	Non-detenting	10 pieces	541010	VAMC-S6-CH	
	V	Covered	10 pieces	541011	VAMC-S6-CS	
13 Inscription label						
	B	Clip-on for valve cap	5 pieces	540888	ASCF-T-S6	
	T	For manifold blocks	5 pieces	540889	ASCF-M-S6	
16 Silencer						
Data sheets → Page 1661						
	–	For thread G1/8		★ 2307	U-1/8	
	–	For thread G1/4		★ 2316	U-1/4	
	–	For thread G1/2		★ 6844	U-1/2-B	
17 Blanking plug						
Data sheets online: → b-1						
	–	For thread G1/8	10 pieces	★ 3568	B-1/8	
	–	For thread G1/4	10 pieces	★ 3569	B-1/4	
18 Push-in fitting						
Data sheets → Page 1443						
	–	Connecting thread G1/8	For tubing O.D. 6 mm	10 pieces	★ 186096	QS-G1/8-6
	–		For tubing O.D. 8 mm	10 pieces	★ 186098	QS-G1/8-8
	–	Connecting thread G1/4	For tubing O.D. 8 mm	10 pieces	★ 186099	QS-G1/4-8
	–		For tubing O.D. 10 mm	10 pieces	★ 186101	QS-G1/4-10
	–	Connecting thread G3/8	For tubing O.D. 10 mm	10 pieces	★ 186102	QS-G3/8-10
	–		For tubing O.D. 12 mm	10 pieces	★ 186114	QS-G3/8-12-I
	–	Connecting thread G1/2	For tubing O.D. 12 mm	1 piece	★ 186104	QS-G1/2-12
	–		For tubing O.D. 16 mm	1 piece	★ 186105	QS-G1/2-16

1) Code letter within the order code for a valve terminal configuration.

Standards-based valve terminals >

Valve terminals VTSA, to ISO 15407-2, ISO 5599-2

Accessories – Ordering data

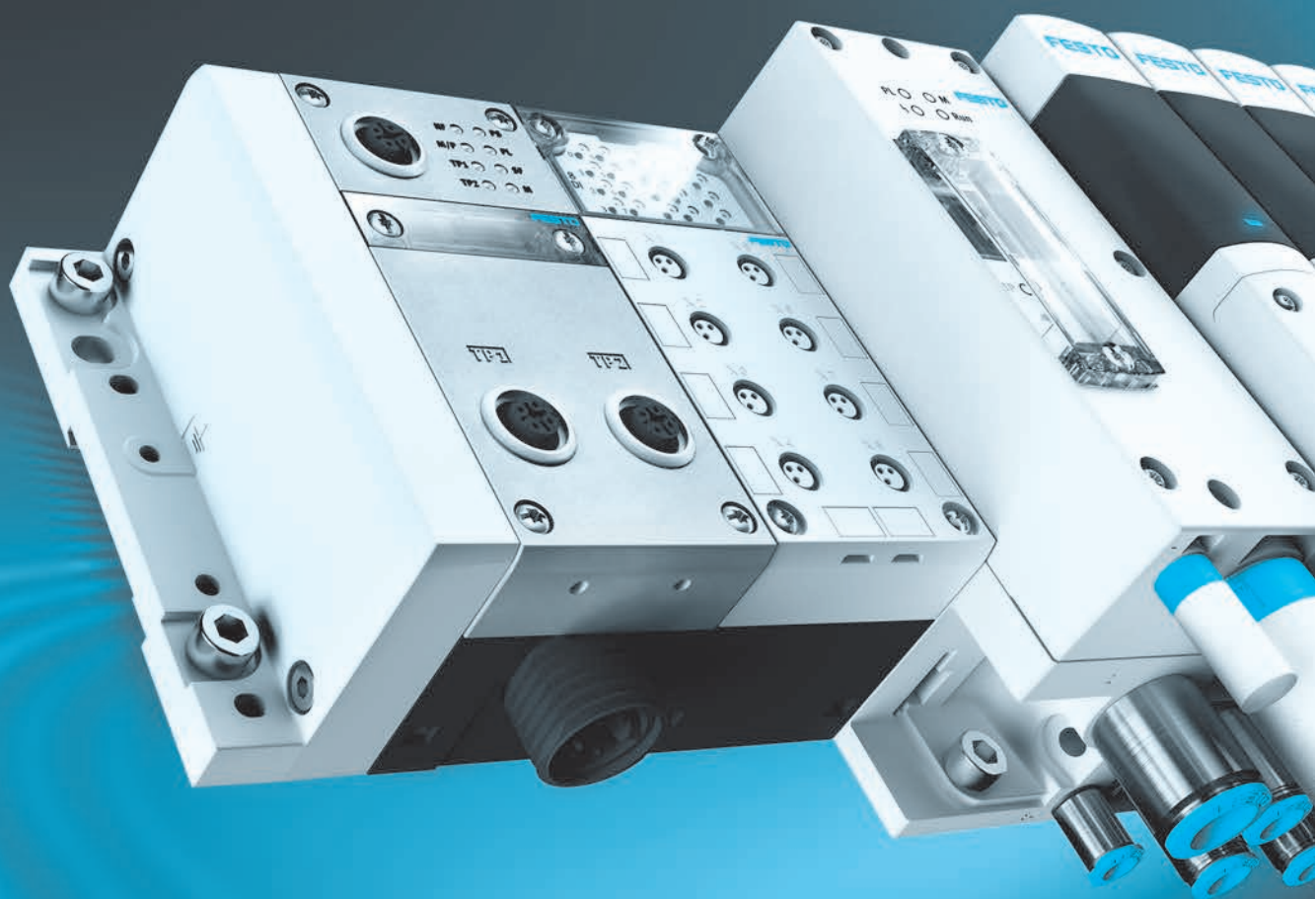
	Code ¹⁾	Description	Part no.	Type
Control block, individual connection variant			Data sheets online: → vofa	
	–	PNP output	569819	VOFA-L26-T52-M-G14-1C1-APP
	–	NPN output	569820	VOFA-L26-T52-M-G14-1C1-ANP
Wall mounting				
	–	Mounting bracket, with a mounting hole for M5 screw, 5 pieces	539214	VAME-S6-10-W
	U	Mounting bracket with a mounting hole for M4 screw and a mounting hole for M6 screw, 1 piece	567038	VAME-S6-W-M46
90° connection plate				
	P	Width 18 mm, connecting thread G1/8	539719	VABF-S4-2-A2G2-G18
		Width 26 mm, connecting thread G1/4	539721	VABF-S4-1-A2G2-G14
		Width 42 mm, connecting thread G3/8	546097	VABF-S2-1-A1G2-G38
		Width 52 mm, connecting thread G1/2	555702	VABF-S2-2-A1G2-G12
User documentation				
	D	German	538922	P.BE-VTSA-44-DE
	E	English	538923	P.BE-VTSA-44-EN
	S	Spanish	538924	P.BE-VTSA-44-ES
	F	French	538925	P.BE-VTSA-44-FR
	I	Italian	538926	P.BE-VTSA-44-IT

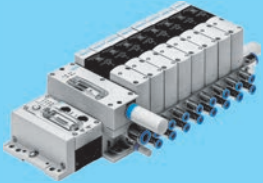
1) Code letter within the order code for a valve terminal configuration.

10 Motion Terminal

Digitised pneumatics

- + Many functions in one component thanks to Motion Apps
- + Combines the benefits of electric and pneumatic components
- + Maximum standardisation
- + Reduced complexity and time to market
- + Increasing profitability and know-how protection
- + Minimal installation
- + Increased energy efficiency





VTEM
Motion Terminal

- + Function combinations with Motion Apps – in one valve!
- + Reliable processes thanks to maximum reproducibility and protection against manipulation

→ page 1169

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Motion Terminal VTEM

A world first: Digitised pneumatics

Digital simplicity:

maximum flexibility combined with maximum standardisation

For the first time ever, the functions of a valve can be controlled and changed by software – without the need to change the hardware. This completely new, intelligent technology consisting of pneumatics, electronics and software control will develop the Festo Motion Terminal into a cyber-physical system. It can be used to realise numerous simple directional control valve functions as well as complex motion tasks, which up to now were the preserve of servo-pneumatics or electrical automation. Diagnostic functions for condition monitoring and reduced energy consumption are also easy to implement. All in all, the Festo Motion Terminal greatly reduces process costs and complexity compared with conventional solutions – including in downstream processes – thanks to its high level of function integration.

Fit for Industry 4.0

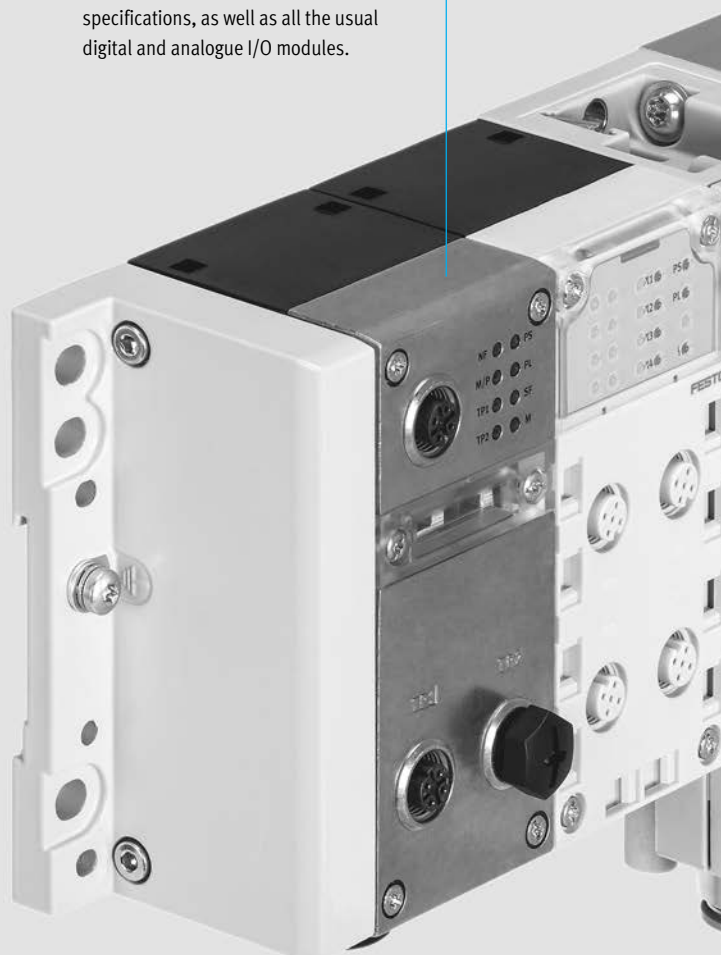
The Festo Motion Terminal makes pneumatics fit for Industry 4.0, for example with integrated sensors for transparent processes, the option of self-optimisation or self-adaptation to external influences, a digital copy in the form of a Product Key or OPC UA as an optional Industry 4.0 interface.

Energy efficiency par excellence

The Festo Motion Terminal uses an integrated concept to ensure energy-efficient operation. In addition to apps for saving energy, low-energy piezo valves have been developed for controlling the valve main stages. These reduce the power consumption for the pilot control by up to 90%, and have a service life of up to 300 million switching cycles.

CPX module

CPX gives you the option of using many different control systems and end user specifications, as well as all the usual digital and analogue I/O modules.



Ethernet WebConfig interface

When it comes to efficient parameterisation the choice is yours: you can either use an intuitive WebConfig user interface via the PC's web browser or easily access the (PLC) machine control system as usual – without the need for additional configuration software.

The Festo Motion Terminal VTEM and its Motion Apps make pneumatics even more versatile and flexible. Using several Motion Apps in succession on a single valve supports new pneumatic motion sequences. This enables you to improve process quality, performance and energy efficiency. And replace many components with a single programmable piece of hardware.



Input module

Up to 16 analogue or digital inputs for direct control applications, such as Soft Stop.

Valve

The app-controlled valve comprises four 2/2-way diaphragm poppet valves, which are controlled by four piezo pilot valves. The integrated stroke and pressure sensors provide optimal control and transparent condition monitoring. The interaction and the design in the form of a bridge circuit, which supports independent pressurisation and exhausting, give the valve its flexibility.

Controller with Motion App

The core of the Motion Terminal is about decentralised intelligence and rapid control. This is where the Motion Apps are assigned to the individual valves.

Motion Apps

- Directional control valve functions
- Proportional directional control valve
- Soft Stop
- Motion profile and positioning
(available Q2/2019 for selected series up to 300 mm stroke)
- Proportional pressure regulation
- Model-based proportional pressure regulation
- ECO drive
- Selectable pressure level
- Leakage diagnostics
- Supply and exhaust air flow control
- Presetting of travel time

Find out more:

→ www.festo.com/motionterminal

Motion Terminal VTEM

Make the most of process advantages along the entire value chain

The digitised pneumatics of the Festo Motion Terminal usually pay off quickly and along the entire value chain. The benefits range from faster planning and design to simpler procurement and logistics, as well as easier commissioning and parameterisation. More productive operation and the ability to quickly and easily convert or modernise your system will also speed up the return on investment.

A standardised platform can also be used for numerous applications, again without needing to change the hardware. As shown below, this streamlines and simplifies all phases of a system's lifecycle.

The Festo Motion Terminal VTEM offers a level of added value that is not so easy to quantify, such as know-how protection, since functions are no longer visible from the outside.

Conceptualise



The Festo Motion Terminal can already replace up to 50 individual components. This speeds up the planning phase, reduces complexity and minimises follow-up costs for subsequent modifications and innovations. The sequential use of various Motion Apps also facilitates completely new approaches that were not possible with previous pneumatic solutions.

Potential for change and savings during conceptualisation:
High

Design and program



Faster design thanks to fewer components. This means that the VTEM has fewer part numbers. The Motion Terminal reduces system complexity and helps with standardisations. Subsequent modifications are quick and easy to realise using apps, and design adjustments are eliminated.

Potential for change and savings during design:
Very high

Procure



Significantly fewer components minimise the process steps involved in logistics and warehousing. And the Motion Terminal reduces data administration and maintenance. New functions can be integrated by simply purchasing Motion App licences.

Potential for change and savings during procurement:
Low to medium (without material savings)

Assemble



A standardised configuration for a wide range of tasks requires less assembly and wiring effort. And prevents incorrect installation. This speeds up assembly and commissioning and lowers costs.

Potential for change and savings during assembly:
High

Commission



Time-consuming, manual setting processes become redundant. Once configured, you can very easily duplicate the settings. The Festo Motion Terminal features self-regulating apps, for example for defining travel times, as well as autonomous intelligence.

Potential for change and savings during commissioning:
High to very high

Operate



The Motion Terminal will make your system very productive, energy efficient and economical. The sequential use of various Motion Apps facilitates completely new approaches that were not possible with previous pneumatic solutions. Process quality and energy efficiency can also be improved, and cycle times can be increased. Reconfiguration and tuning are also performed using software. Diagnostics and intelligent apps prevent downtimes and production faults, and also contribute to a fast return on investment.

Potential for change and savings during operation:
Very high

Modernise



The opportunity for modernising all aspects is significantly increased through simplified conversion and easy tuning of entire series. As a result, your production will always be cutting edge and will be open at all times to whatever new requirements the future brings.

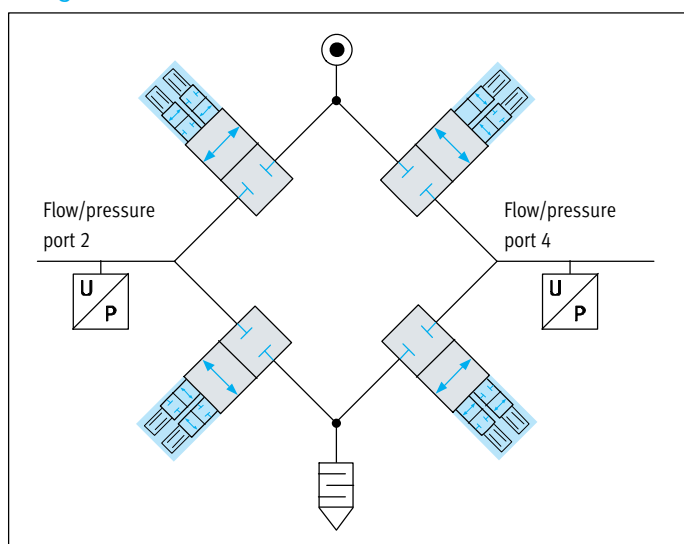
Potential for change and savings during modernisation:
High

Motion Terminal VTEM

Revolutionary: one valve terminal for a huge range of functions

The new valve technology for the Festo Motion Terminal can be used for a wide range of products, functions and complete solution packages. The only prerequisite is a valve design with multiple degrees of freedom for actuation, as well as integrated data acquisition and processing suitable for a cyber-physical system. The reduction to just 1 valve variant provides both machine builders and operators with huge economic benefits.

Bridge circuit in the valve



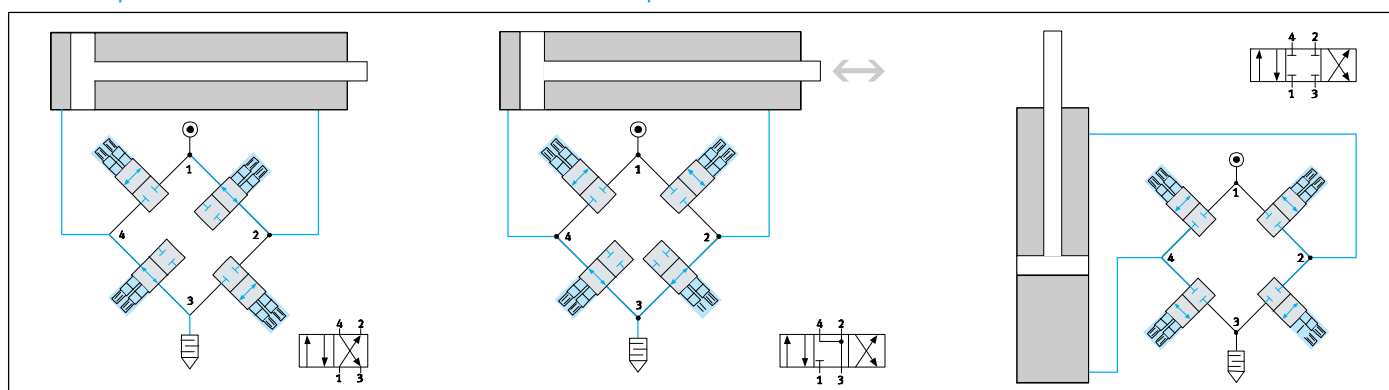
1 valve variant: a single valve replaces over 50 individual components

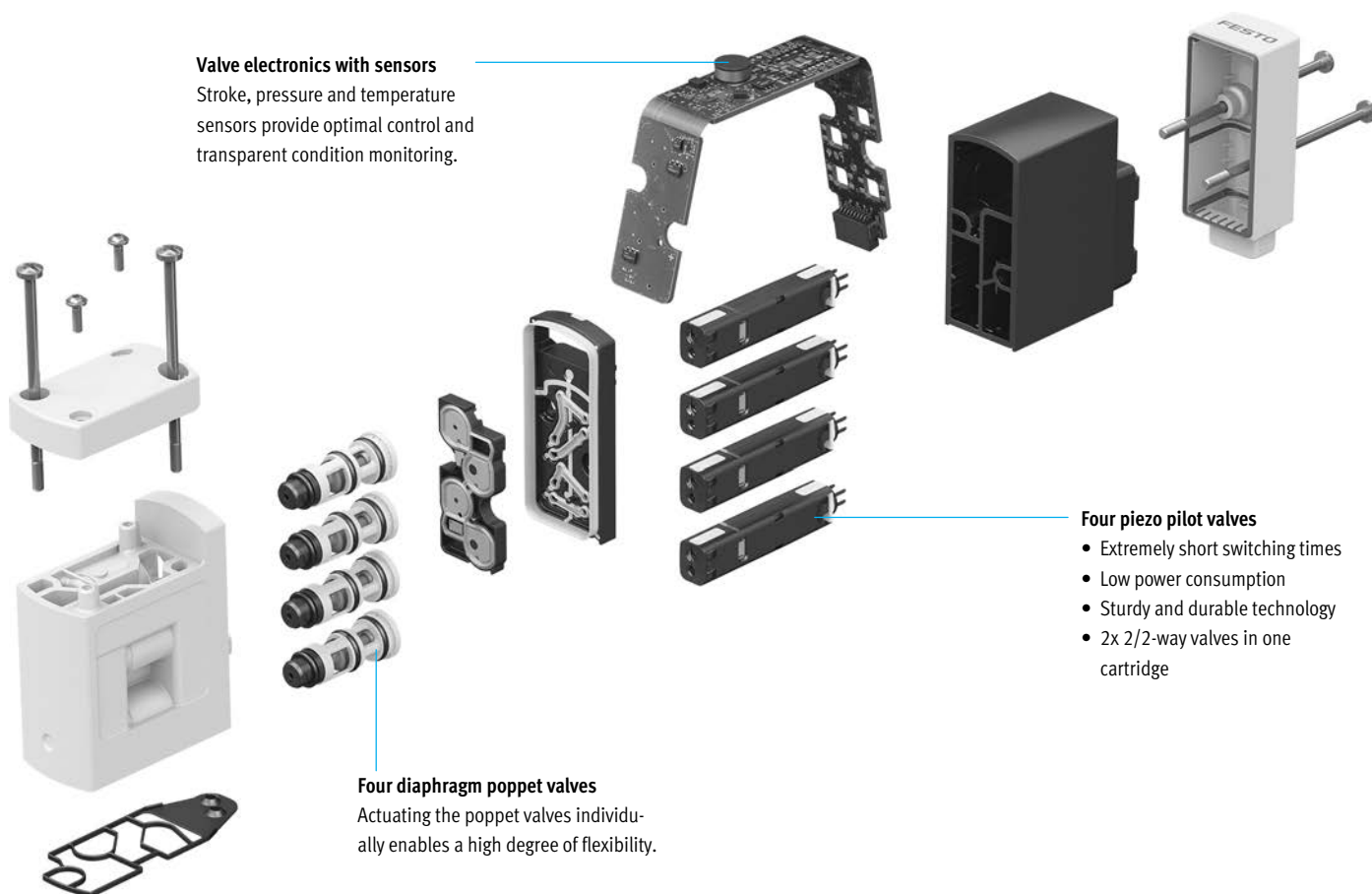
The bridge circuit in the valve of the Festo Motion Terminal is an innovative valve system that is based on the basic elements of pneumatic valve functions. It allows completely different functions to be executed sequentially with a single valve.

- Four 2/2-way valves (diaphragm poppet valves) are connected in series to form a full bridge
- Each diaphragm poppet valve (grey) is proportionally piloted and controlled by two piezo valves (blue)
- Sensors monitor the stroke of each poppet valve, while pressure sensors monitor the pressure at ports 2 and 4

All four pilot cartridges (blue) form a total of eight proportionally controlled 2/2-way valves. Thanks to the integrated sensors and proportional control, which allows the valves to be pressurised and exhausted independently, this single valve technology can now be used to execute a wide range of conventional valve functions and full system solutions, such as Soft Stop.

From simple directional control valve functions to complex motion tasks



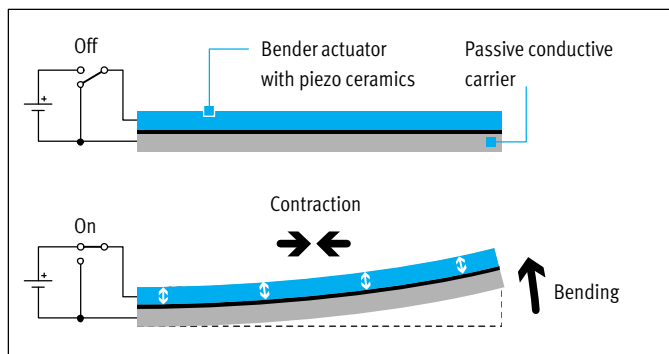


Self-learning and adapts autonomously

Every valve slice in the Festo Motion Terminal has analogue pressure and stroke position sensors that continuously exchange their data with the controller. This enables the system to run its own evaluations and make its own decisions.

This means, for example, that external load cells are no longer needed for condition monitoring during pressing procedures. The combination of integrated sensors and software-based models not only saves money, it also simplifies the entire system, from conceptualisation to modernisation.

This is how piezo technology works



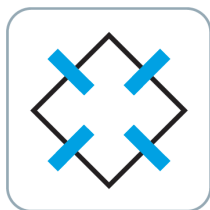
The advantages of piezo valves

- High-precision, continuous, proportional control
- High energy efficiency thanks to incredibly low power consumption
- No operating noise
- No heat build-up
- Extremely long service life with more than 300 million switching cycles

Motion Terminal VTEM

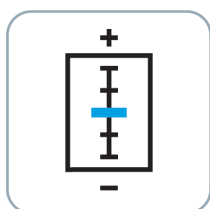
Flexibility and standardisation go hand in hand with our Motion Apps

The Festo Motion Terminal offers benefits along the entire value chain, from the conceptualisation to the modernisation of your machine. The Motion Apps, which control a single piece of hardware, are an integral part. The sequential use of various Motion Apps facilitates completely new approaches that were not possible with previous pneumatic solutions. Changes can also be made to the parameters during operation.



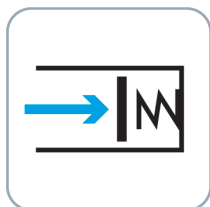
Directional control valve functions

This provides maximum flexibility for special-purpose machines as well as for handling systems in series production. You can modify standard directional control valve functions such as 4/2-way, 4/3-way and 3/2-way, etc. at any time and as often as necessary, even during operation. It also enables you to respond to a large number of requirements at the touch of a button.



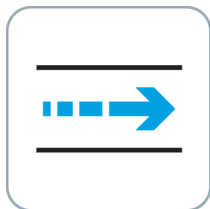
Proportional directional control valve

For the first time at Festo, two proportional flow control functions have been integrated in one valve and on one platform, resulting in an economical and compact solution.



Soft Stop

Shorten your cycle times by up to 70%! With Soft Stop, you can implement highly dynamic yet gentle positioning motion without wear-prone shock absorbers. This reduces maintenance times, increases the service life of your system and thus enhances your productivity.



Motion profile and positioning

Benefit from freely selectable positioning over the entire working stroke and the ability to control cylinder movement. Simply predefine a motion profile with the following parameters: acceleration; speed; travel time and position. (Available Q2/2019 for selected series up to 300 mm stroke)



Proportional pressure regulation

Save space and hardware costs by combining the functions of two individual and independent proportional pressure regulators in just one valve, including with vacuum!



Model-based proportional pressure regulation

With model-based regulation, there's no need for external sensors. By storing fewer boundary parameters for the system, such as tube length, tube diameter and cylinder size, the anticipatory control system ensures maximum accuracy, as the app can compensate for a drop in pressure and volume using the control technology.



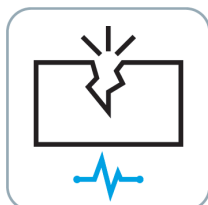
ECO drive

Reduce costs by operating your actuator with the minimum pressure necessary for the load. This eliminates the rise in pressure in the drive chamber at the end of the movement, allowing energy savings of up to 70%. With a single DSBC32-100 with a 2 kg load, this is a saving of approx. €100 a year.



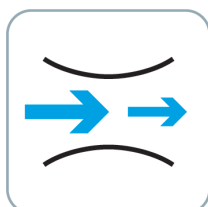
Selectable pressure level

Save energy by setting several pressure levels. Simply set the pressure for selected movements to a reduced level of your choice. Additionally, you can control the speed by adjusting the flow control valve setting.



Leakage diagnostics

Fewer system downtimes due to preventive maintenance and faster fault detection. Separate diagnostic cycles and defined threshold values enable you to detect and localise individual leaks in the application operated by the Festo Motion Terminal.



Supply and exhaust air flow control

Do away with separate flow control valves on the actuator and set tamper-proof travel speeds quickly and conveniently at the touch of a button. There is also an option to implement new motion sequences such as dynamic flow control adjustment.



Presetting of travel time

For quick and easy commissioning and stable operation, all you have to do is enter the travel time for the advancing and retracting motions. The exhaust air flow control function adapts itself to the travel time and then maintains it. The system automatically adjusts the values in the case of influences such as increased friction due to wear.

Motion Terminal VTEM

This is how it works: selecting Motion Apps

You can order the Festo Motion Terminal via the Online Shop, similar to how you would normally order a valve terminal. The familiar configuration interface now has several new features, including the selection and purchase of the necessary Motion App licences, which are saved to the controller before it is shipped out. The Motion App licence for the “Directional control valve function” is always included in the basic configuration.

Motion Apps: available licences

The Motion Apps are offered as licence packages or Multi-valve apps and can be used without any restriction at all valve positions of the Motion Terminal.

Licences for Single-valve apps, on the other hand, need to be bought separately for each valve function used. The valve position can be freely selected and changed. For example, if you need two proportional pressure regulation functions at the same time, you will need to buy two Motion App licences. Alternatively, you can adjust the schedule for your process so that the two proportional pressure regulation functions are used in sequence, one after the other.

All licences are tied to a particular Motion Terminal and cannot be transferred to others.

Basic package

However you configure your Festo Motion Terminal, with four or eight valves, with or without digital/analogue input modules, the “Directional control valve functions” Motion App licence is always included with the hardware for all valve positions – at no extra cost!

- Motion Terminal
- Directional control valve functions

Start package

The Start package includes the licences for the most important basic pneumatic functions **For all valve positions**. It can be used to execute a huge number of tasks. These apps are only available as part of the package.

- Selectable pressure level
- Supply and exhaust air flow control
- Proportional directional control valve

Multi-valve apps

Extend the range of functions **For all valve positions** in specific areas. The Multi-valve apps are available individually.

- Leakage diagnostics
- ECO drive
- Presetting of travel time

Single-valve apps

Extend the range of functions **for one valve position** in specific areas. All apps are available individually.

- Proportional pressure regulation
- Model-based proportional pressure regulation
- Soft Stop
- Motion profile and positioning (available Q2/2019 for selected series up to 300 mm stroke)



Downloading Motion Apps

Do you need another app now that your Festo Motion Terminal has been delivered? Then simply download it using the Product Key in our App World!

Important: For the ECO drive, Presetting of travel time and Soft Stop Motion Apps, you will need the fast input module CTMM and other sensors from the range of accessories for the Festo Motion Terminal.

Save energy: new approaches to energy efficiency

The technology of the Festo Motion Terminal uses an integrated approach to energy-efficient operation of pneumatic automation technology. The terminal includes low-energy piezo valves for the pilot stage, specially developed Motion Apps for energy-efficient operating modes, and a leakage diagnostic function.



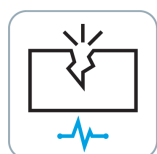
Basic low-energy technology

The low-energy piezo valves reduce the power consumption for the pilot control stage by up to 90% – with a pilot valve service life of up to 300 million switching cycles.



Apps for energy-efficient operation

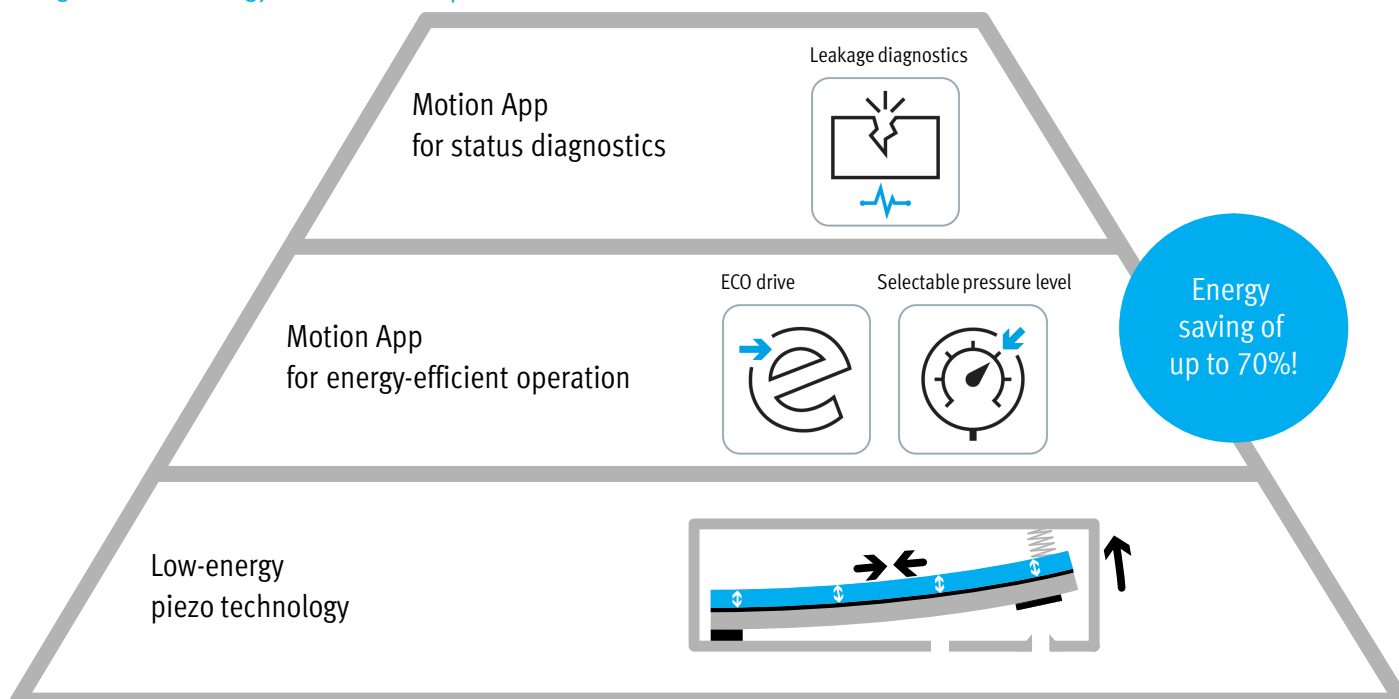
The Motion Apps “ECO drive” and “Selectable pressure level” will allow operators to control power consumption more selectively in the future. The Motion App “ECO drive” alone will generate savings of up to 70%. More apps will follow.



One app for leakage detection

The Motion App “Leakage diagnostics” enables the status of pneumatic systems connected to the Festo Motion Terminal to be continuously monitored, thus ensuring that leakages are detected early.

Integrated and energy-efficient concept



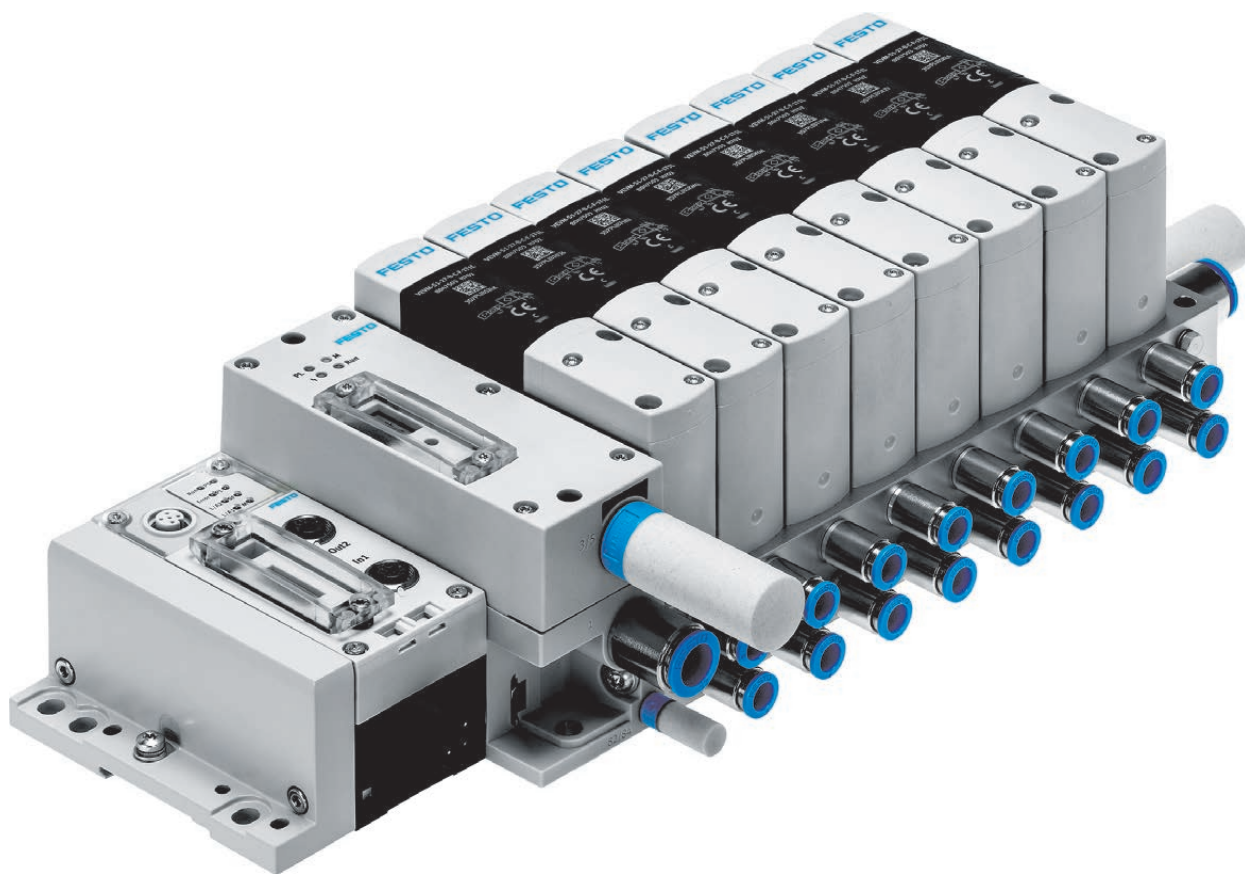
Product overview

Motion Terminal

	
Type	Motion Terminal VTEM
Valve terminal design	Fixed grid
Grid dimension	28 mm
Max. no. of valve positions	8
Standard nominal flow rate	480 l/min
Pneumatic connection 1	G3/8
Operating pressure	3 ... 8 bar
Pilot pressure	3 ... 8 bar
Actuation type	Electric
Nominal operating voltage DC	24 V
Temperature of medium	−5 ... +50 °C
Description	• Many functions in one component – thanks to apps • Combines the benefits of electric and pneumatic components • Maximum standardisation • Reduced complexity and time to market • Increasing profitability and know-how protection • Minimal installation • Increased energy efficiency
→ Page/online	1169

Motion Apps

	
Type	Motion Apps GAMM
Description	• A new dimension in flexibility thanks to Motion Apps – delivering a wide range of different functions in a single valve • Faster engineering processes • Short response times without the need to adapt the hardware • Reduced system complexity • Shorter time-to-market for your application • Control programs for VEVN valves
→ Page/online	1169



Digitised pneumatics

- + Many functions in one component thanks to Motion Apps
- + Combines the benefits of electric and pneumatic components
- + Maximum standardisation
- + Reduced complexity
- + Increasing profitability
- + Minimal installation
- + Increased energy efficiency

Motion Terminal

VTEM

Motion Terminal VTEM



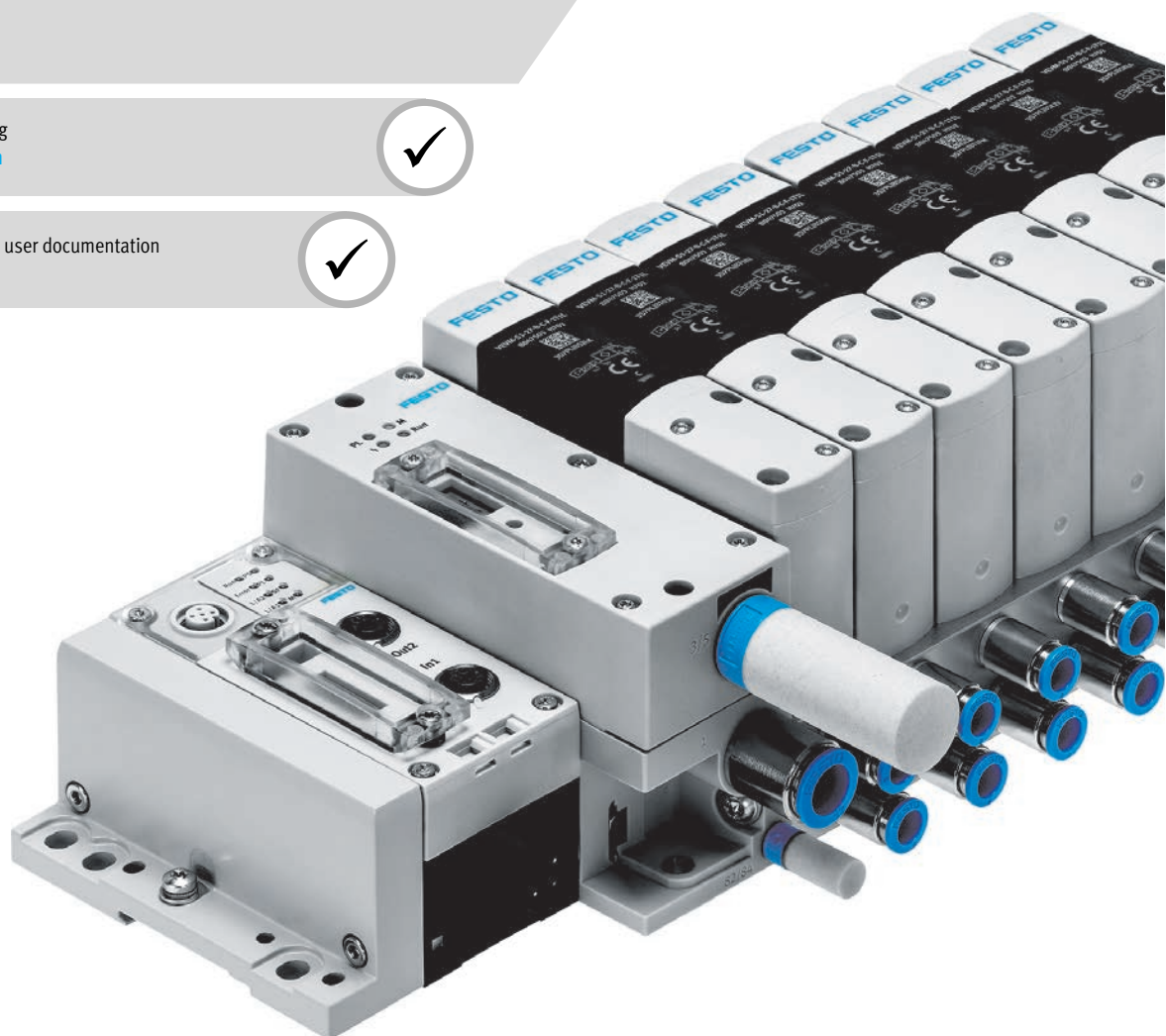
Overview, configuration and ordering

→ www.festo.com/catalogue/vtem



Additional information, support and user documentation

→ www.festo.com/sp/vtem



- + Function combinations thanks to Motion Apps – in a single valve!
- + Reliable processes thanks to maximum reproducibility and protection against manipulation

Product range overview

Function	Version		Description	➔ Page/ online
Pneumatic/mechanical	Pneumatic interlinking	Fixed grid	• 4 or 8 valve positions • 0 or 2 positions for input modules • With electrical interface for terminal CPX • Supply/exhaust ports and working ports for the mounted valves • Pilot air supply for the mounted valves • Electrical actuation for the mounted valves	1173
	Valve	4x 2/2-way valve	• Position if the power supply/signalling fails – all ducts closed • Connected in series to form a full bridge • Proportional pilot control by piezo valves • Valve opening monitored by sensor • Pressure sensors in ports 2 and 4	1174
Electronics	Input module	Analogue	• 8 analogue inputs • M8, 4-pin • Exclusively for regulating the functions provided via the Motion Apps • Data can be transferred to a higher-order controller by the Motion Apps	1175
		Digital	• 8 digital inputs • M8, 3-pin • Exclusively for controlling the functions provided via the Motion Apps • Data can be transferred to a higher-order controller by the Motion Apps	1175
Motion Apps	Basic package	Directional control valve functions	Valve type and switching status can be cyclically assigned to a valve	1176
	Start package	Proportional directional control valve	Valve type, switching status and a continuous valve opening can be cyclically assigned to a valve	1176
		Supply and exhaust air flow control	Flow control function	1177
		Selectable pressure level	Energy-saving cylinder movement using a reduced pressure level	1179
	Additional Motion Apps	Proportional pressure regulation	• Independent regulation of the two valve outlet pressures • Equivalent to two proportional pressure regulators at one valve position	1177
		Model-based proportional pressure regulation	• Independent regulation of the two valve outlet pressures • Equivalent to two proportional pressure regulators at one valve position • More dynamic regulation by taking the pressure drop in the tubing into consideration	vtem
		ECO drive	For applications with low loads or slow positioning motion	1178
		Presetting of travel time	For presetting the travel time for retracting and advancing	1179
		Leakage diagnostics	Air consumption monitoring	1180

Note

The Motion Terminal can be ordered quickly and easily online.
The convenient product configurator can be found at:

➔ www.festo.com/catalogue/vtem

Motion Terminal VTEM

Key features

Innovative

Benefits of piezo valves for pilot control:

- Pressure regulation function
- Maximum service life
- Minimum energy requirement
- Low leakage when acting as a proportional pressure regulator

Integrated controller permits:

- Cyclical changes to the valve function
- Function integration via Motion Apps

Licence packages

Each Motion Terminal VTEM is assigned a package of Motion App licences.

This can be extended at any time; however, it is not possible to transfer licences from one Motion Terminal VTEM to another.

The valve functions that are available within the Motion Terminal can be freely assigned to each individual valve wherever and whenever necessary.

With the integrated sensors all valve functions can be comprehensively monitored.

The controller of the Motion Terminal can use this information to perform more complex pressure regulating tasks or for switching connected actuators.

Flexible

The valves connected to form a full bridge within the valve body enable a wide range of directional control valve functions to be realised at one valve position.

These functions are assigned to the valve by the connected controller and can be changed during operation.

The pressure regulator functionality of the valves in combination with the integrated pilot control enables the Motion Terminal VTEM to autonomously perform precision positioning tasks.

Integrated sensors

Integrated sensors monitor:

- Degree of opening of the valve (flow rate for supply air and exhaust air)
- Pressure

Monitoring is performed:

- For each individual valve
- For each individual valve connection

The ability to adapt pressure and flow rate, in combination with the integrated sensors, makes it possible to influence the cylinder movement directly.

This means that a wide range of requirements can be met:

- Independent, proportional regulation of the supply and exhaust air for each cylinder chamber
- Soft start
- Fast start
- Noise reduction
- Reduced vibrations
- No need for exhaust air flow control valves
- No need for shock absorbers

Reliable

Integrated sensors monitor the switching status of the valves and the pressure in duct 1, 3, 2 and 4.

Optional input modules enable the connected actuators to be monitored.

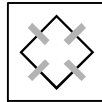
This information is evaluated in the Motion Terminal VTEM itself and also transferred to a higher-order controller.

Basic package

Includes:

Directional control valve functions

The Basic package is included with every Motion Terminal.



Start package

Includes:

- Proportional directional control valve
- Supply and exhaust air flow control
- Selectable pressure level

The Start package can be ordered as an individual package for the Motion Terminal.



Easy to install

- No need to change the valve, as the directional control valve function is assigned using software
- Less storage space required: one valve for all functions
- Integrated mounting points for wall and H-rail mounting
- Integrated flow control functionality, no manual adjustment required
- Functions of 50 individual components integrated via Motion Apps

Additional Motion Apps

- Proportional pressure regulation
- ECO drive
- Presetting of travel time
- Leakage diagnostics

Additional Motion Apps can be ordered individually for the Motion Terminal.

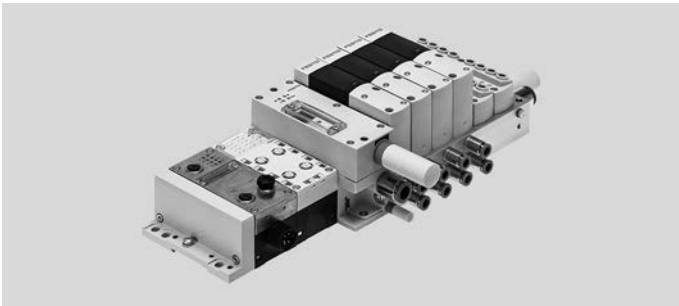


Data sheet – Motion Terminal VTEM

Flow rate
Up to 480 l/min

Valve width
27 mm

Voltage
24 V DC



Technical data		Download CAD data → www.festo.com
Design	Fixed grid	
Electrical control	Fieldbus	
Type of actuation	Electrical	
Nominal operating voltage	[V DC]	24 ±25%
Maximum number of valve positions	8	
Grid dimension	[mm]	28
Suitable for vacuum	Yes	
Pilot air supply	Internal or external	
Degree of protection	IP65	

Operating and environmental conditions	
Operating/pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4], inert gases
Note on the operating/pilot medium	Lubricated operation not possible
Operating/pilot pressure	[bar] 3 ... 8
Ambient temperature	[°C] –5 ... +50
Temperature of medium	[°C] –5 ... +50

Pneumatic connections		Thread
Supply	1	G3/8
Exhaust port	3	G3/8
Pilot air supply	14	M5
Pilot exhaust air	84	M7
Venting hole		M7
Working ports	2	G1/8
	4	G1/8

Materials	
Seals	TPE-U(PU), NBR

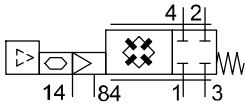
Motion Terminal VTEM

Data sheet – Valves VEVM

Flow rate
Up to 480 l/min

Valve width
27 mm

Voltage
24 V DC



Technical data	
Valve function	Can be assigned using Motion App
Motion Apps	Directional control valve functions
	Proportional directional control valve
	Proportional pressure regulation
	Supply and exhaust air flow control
	ECO drive
	Presetting of travel time
	Selectable pressure level
	Leakage diagnostics
Reset method	Mechanical spring
Design	Piston seat
Sealing principle	Soft
Type of actuation	Electrical
Type of control	Piloted
Flow direction	Non-reversible, pressure at 1 and exhaust air or vacuum at 3
Suitable for vacuum	Yes
Nominal width	[mm] 4.2
Standard nominal flow rate	[l/min] 480
Switching time on/off	[ms] 8.5/8.5

Operating and environmental conditions	
Operating/pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4], inert gases
Note on the operating/pilot medium	Lubricated operation not possible
Operating/pilot pressure	[bar] 3 ... 8
Ambient temperature	[°C] –5 ... +50
Temperature of medium	[°C] –5 ... +50

Electrical data	
Electrical connection	Via sub-base
Nominal operating voltage	[V DC] 24
Power consumption	[W] 1.25
Status indication	LED blue (valve in operation)
	LED red (malfunction)
Duty cycle	[%] 100

Materials	
Housing	PA
Seals	TPE-U(PU), NBR

Data sheet – Input module

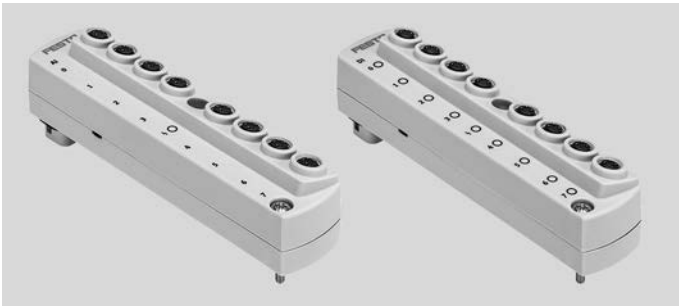
Function

Input modules enable analogue and digital sensors to be connected to the Motion Terminal.

The input signals are used for motion tasks, but can also be looped through from a Motion App to the higher-order controller.

Area of application

- Input modules for 24 V DC sensor supply voltage
- Digital module with PNP logic
- Analogue module for 4 ... 20 mA



Technical data		
		Digital input module
		Analogue input module
Electrical connection		M8x1 socket, 3-pin
Number of inputs		8
Input characteristics		To IEC 61131-2, type 2
Input signal range		Signal 0: ≤ 5 V
		Signal 1: ≥ 11 V
Input switching logic		PNP
Fuse protection		Internal electronic fuse
Diagnostics via LED		Fault per module
		Status per channel
Nominal operating voltage	[V DC]	24
Intrinsic current consumption at nominal operating voltage	[mA]	Typically 12
Maximum cable length	[m]	30

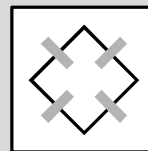
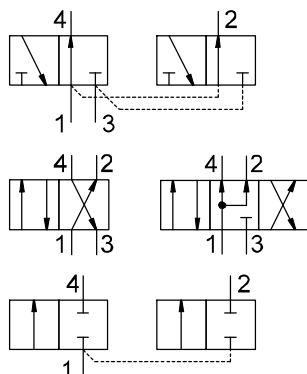
Materials	
Housing	PA

Operating and environmental conditions		
Ambient temperature	[°C]	–5 ... +50

Motion Terminal VTEM

Data sheet – Motion App “Directional control valve functions”

- 2x 2/2-way valve
- 2x 3/2-way valve
- 4/2-way valve
- 4/3-way valve
- Included in the Basic package



Mode of operation

The directional control valve function allows the characteristics of a conventional pneumatic valve to be assigned to a valve position. The integrated sensors enable the switching position to be monitored. All ducts are shut off if the pilot pressure or power supply is interrupted.

Benefits

The ability to assign the directional control valve function significantly reduces component variety. This in turn reduces the initial design costs. If a replacement is required, it is no longer necessary to identify the specific valve; the controller assigns the function to the new valve. Thanks to the cyclical assignment, a series of valve functions can be realised on one valve position at different times.

During maintenance and commissioning, the valves can be stopped as required via the controller and can exhaust the system.

- One valve position with nine valve functions
- No need to change the valve for a different valve function
- Virtual manual override via software, access via Ethernet interface

Scope

- For the entire Motion Terminal
- For each individual valve position in a Motion Terminal, depending on the assignment
- Cyclical assignment

Data

Controller to the valve

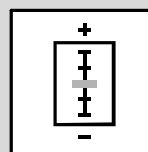
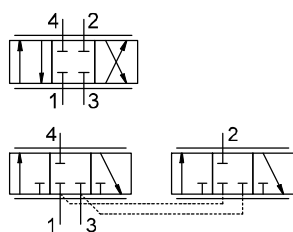
- Directional control valve function
- Switching position to be assumed

Valve to the controller

- Switching position
- Pressure in duct 2
- Pressure in duct 4

Data sheet – Motion App “Proportional directional control valve”

- 4/3-way proportional valve
- 2x 3/3-way proportional valve
- Included in the Start package



Mode of operation

The proportional directional control valve function is assigned to a valve position in the same way as the directional control valve function. The integrated sensors enable the switching position and opening degree of the valves to be monitored.

Benefits

- Minimal leakage (poppet valves)
- Low current consumption
- Two independently controlled ports at a valve position
- Different control characteristics can be set

Scope

- For the entire Motion Terminal
- For each individual valve position in a Motion Terminal, depending on the assignment
- Cyclical assignment

Data

Controller to the valve

- Directional control valve function
- Switching position to be assumed
- Control characteristics
- Valve position (–100 ... +100%)
- Duct blocking

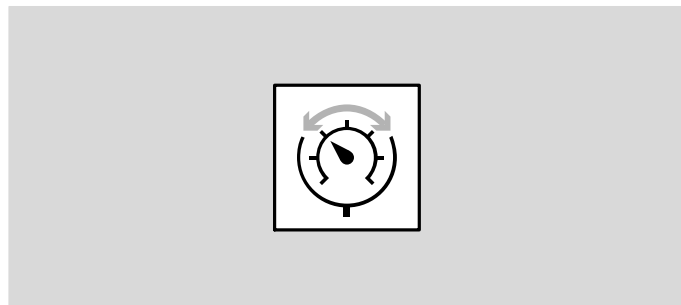
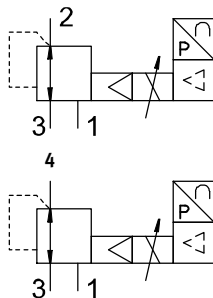
Valve to the controller

- Measured valve position (–100 ... +100%)

Data sheet – Motion App “Proportional pressure regulation”

Pressure –0.9 ... +7 bar

- Pressure regulation in duct 2
- Pressure regulation in duct 4



Mode of operation

The proportional pressure regulation function makes it possible to regulate the pressure at ducts 2 and 4 independently.

Thanks to the integrated sensors, the pressure can be precisely monitored.

The following control characteristics are available:

- Small volume
- Medium volume
- Large volume
- Self-configured setting

Benefits

- Two pressure regulators per valve position
- Easy parameterisation
- Vacuum regulation

Range of applications

- Regulating force with known effective area
- Regulating contact pressure
- Actuating process valves
- Vacuum control with ejector pulse

Scope

- For the entire Motion Terminal
- For each individual valve position in a Motion Terminal, depending on the assignment
- Cyclical assignment

Data

Controller to the valve

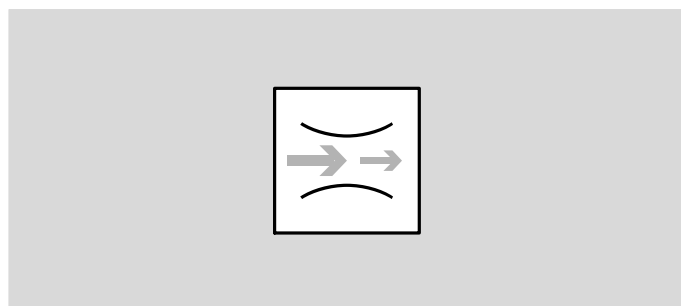
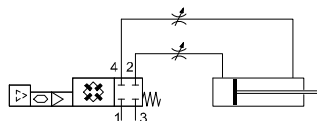
- Pressure at duct 2 (setpoint value)
- Pressure at duct 4 (setpoint value)

Valve to the controller

- Pressure at duct 2 (actual value)
- Pressure at duct 4 (actual value)

Data sheet – Motion App “Supply and exhaust air flow control”

- Supply air flow control
- Exhaust air flow control
- Included in the Start package



Mode of operation

The flow rate can be individually adjusted for each duct, the supply air and exhaust air flow control are independently adjusted.

It is no longer necessary to have a technician on site to change the flow control.

Benefits

- Flow control remotely adjustable during operation (adjustment via controller)
- Reproducible flow control cross sections adjustable via controller
- Reduced component variety since there is no mechanical flow control valve
- Flow control setting can be called up during operation
- Tamper-proof

Scope

- For the entire Motion Terminal
- For each individual valve position in a Motion Terminal, depending on the assignment
- Cyclical assignment
- Control precision $\pm 3\%$

Data

Controller to the valve

- Supply air flow control setting 0 ... 100% (recommended values: 5 ... 100%)
- Exhaust air flow control setting 0 ... 100% (recommended values: 5 ... 100%)
- Increments 0.01%

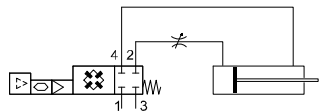
Valve to the controller

- Supply air flow control setting
- Exhaust air flow control setting

Motion Terminal VTEM

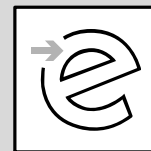
Data sheet – Motion App “ECO drive”

- Supply air flow control with end-position switch-off
- Can be used to save energy when advancing and retracting the cylinder



Also required:

- A digital input module CTMM
- Two digital sensors (PNP, N/O contact) for determining the end position of the drive



Mode of operation

To save energy during cylinder movement, the supply air is restricted when advancing the cylinder while the exhaust air is unthrottled.

The supply air side is shut off when the end position is reached so the pressure level and cylinder position can be maintained.

For this function, the cylinder position is sensed via two end-position switches.

Benefits

- Supply air flow control and pressure switch-off in the end position considerably increase energy efficiency
- Energy/pressure consumption is automatically adapted to the load
- Readjustment in case of deviation from the end position
- Suitable for moving low loads at low speed

Scope

- For the entire Motion Terminal
- For each individual valve position in a Motion Terminal, depending on the assignment
- Cyclical assignment

Data

Controller to the valve

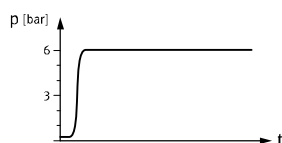
- Supply air flow control setting 5 ... 100%

Valve to the controller

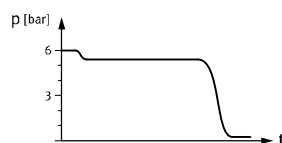
- Pressure at duct 2
- Pressure at duct 4
- End position reached

Pressure curve without ECO drive

Pressure at duct 2



Pressure at duct 4

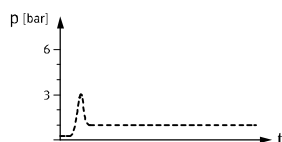


- High pressure at duct 2
- High pressure at duct 4
- Supply air unthrottled
- Exhaust air flow control

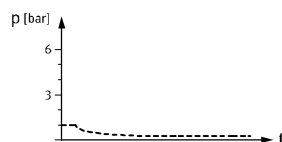
- Differential pressure in line with the amount of force required for the movement
- High force in the end position
- High energy consumption

Pressure curve with ECO drive

Pressure at duct 2



Pressure at duct 4



- Low pressure at duct 2
- Low pressure at duct 4
- Supply air flow control
- Exhaust air unthrottled

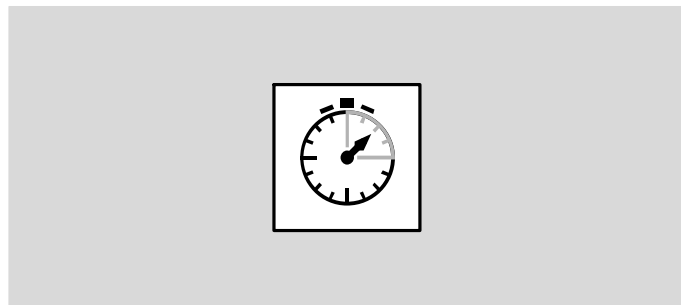
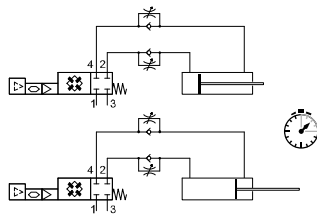
- Differential pressure in line with the amount of force required for the movement
- Low force in the end position
- Low energy consumption

Data sheet – Motion App “Presetting of travel time”

- Self-learning exhaust air flow control for regulating the travel time

Also required:

- A digital input module CTMM
- Two digital sensors (PNP, N/O contact) for determining the end position of the drive



Mode of operation

The travel time for retracting and advancing is preset in the Motion Terminal VTEM. The real travel time is autonomously determined using the sensor data from the end-position switches and the exhaust air flow control is adapted until the specified travel time is achieved. Continuous monitoring and adaptation compensate for changes to the system.

Benefits

- Adaptive and self-adjusting
- Constant cycle times
- Travel time can be changed via the controller
- Variations in the supply or exhaust air pressure are automatically sensed and taken into consideration
- Password-protected access
- A simple proximity sensor is used
- Pressure build-up function to prevent dangerous cylinder movements

Scope

- For the entire Motion Terminal
- For each individual valve position in a Motion Terminal, depending on the assignment
- Cyclical assignment
- In combination with end-position switches

Data

Controller to the valve

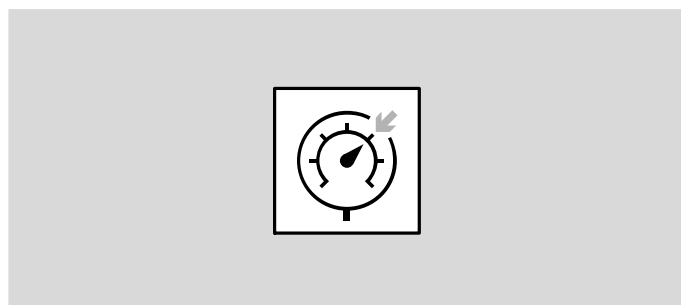
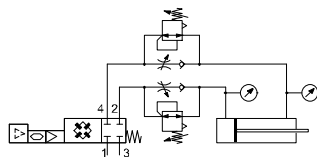
- Advancing
- Retracting
- Exhausting both chambers
- Shutting off both chambers

Valve to the controller

- Measured travel time
- End position reached

Data sheet – Motion App “Selectable pressure level”

- Pressure regulation at duct 2 and flow rate at duct 4
- Pressure regulation at duct 4 and flow rate at duct 2
- Included in the Start package



Mode of operation

The required setpoint value can be independently preset for ducts 2 and 4. The Motion Terminal VTEM autonomously regulates the pressure and signals the actual pressure in ducts 2 and 4 and to the higher-order controller. Pressure regulation takes place in the supply duct, while the preset exhaust air flow control is active in the other duct.

Benefits

- Energy-saving movement with reduced pressure
- Pressure regulation in the end position
- Pressure can be changed remotely and individually preset for each drive and direction of movement
- Variably adjustable pressures in the end position enable a defined force (e.g. press-fitting) to be reproduced in the application

Scope

- For the entire Motion Terminal
- For each individual valve position in a Motion Terminal, depending on the assignment
- Cyclical assignment
- For cylinders with pneumatic cushioning

Data

Controller to the valve

- Pressure at duct 2 and flow control opening at duct 4
- Pressure at duct 4 and flow control opening at duct 2
- Stopping
- Advancing
- Retracting
- Exhausting both chambers

Valve to the controller

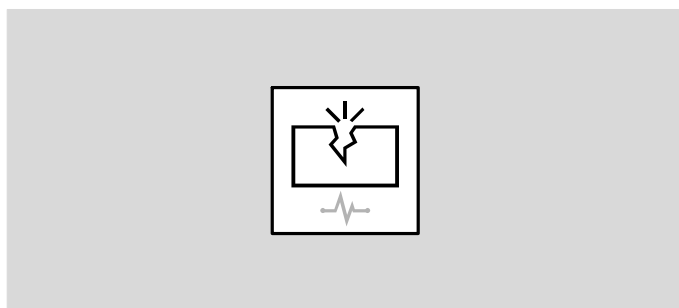
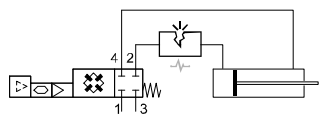
- Pressure at duct 2 and duct 4

Motion Terminal VTEM

Data sheet – Motion App “Leakage diagnostics”

Flow rate

Measuring range 2 ... 50 l/h



Mode of operation

To calculate the leakage, the pressure drop at a valve (drive in end position) is determined.

To be able to evaluate this value, a reference value is determined using a measurement taken at the start of the observation period.

The Motion Terminal VTEM compares the value of further measurements against this reference value.

This comparison provides the basis for an evaluation using adjustable limits.

The evaluation and the difference between the measured value and the reference value are fed back.

During the diagnostics, the motion task independently advances and retracts the cylinder.

Leakage testing is not performed during operation; it is started separately as a test cycle.

Benefits

Increased leakage can be caused by a critical fault (damaged tubing) or by wear and aging of the connected components.

Regular leakage testing can therefore:

- Determine a sudden leak
- Detect wear to cylinders and valves in good time

Scope

- For all valve positions of a Motion Terminal
- Requires a measurement run
- Not for vacuum applications
- For all types of pneumatic consumers

Data

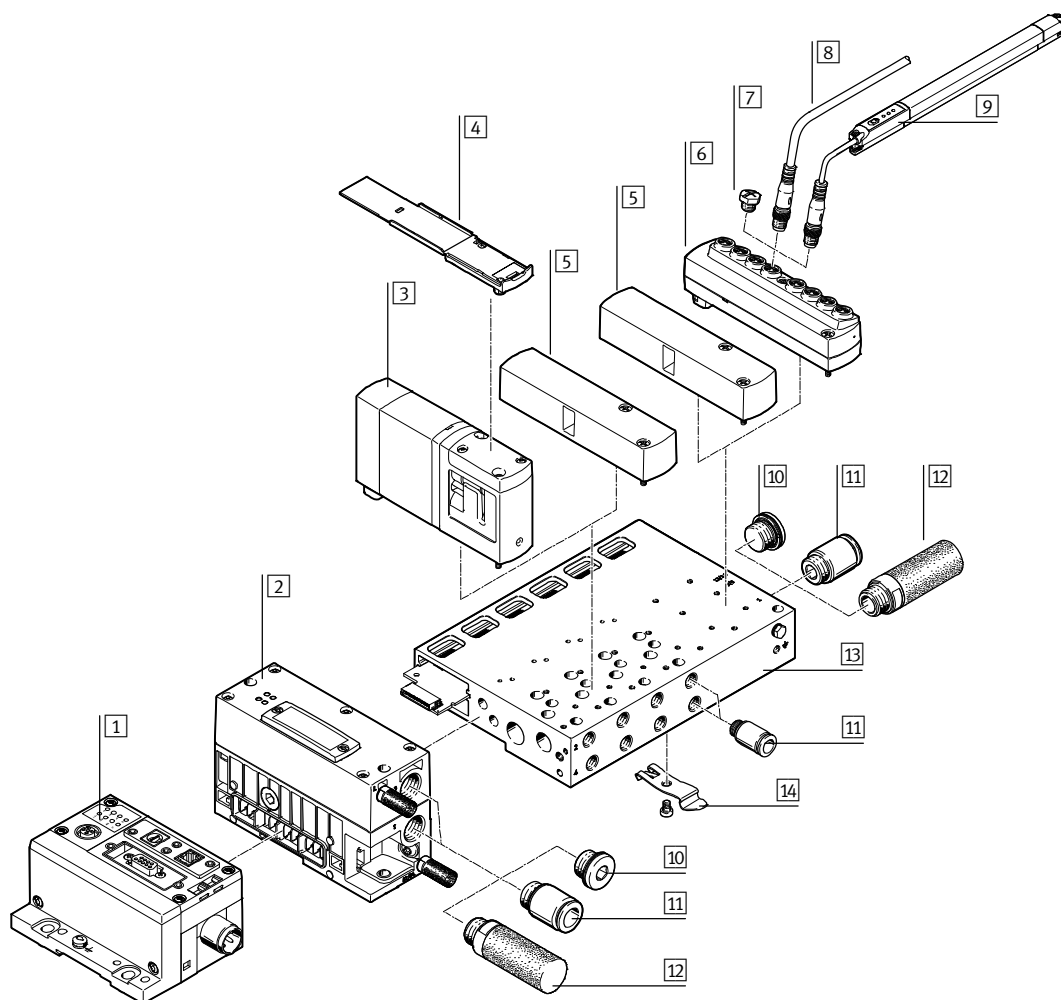
Controller to the valve

- Starting diagnostics
- Terminating diagnostics
- Starting reference measurement
- Terminating reference measurement
- Exhausting

Valve to the controller

- Detecting the status
- Change in leakage for duct 2
- Change in leakage for duct 4
- Evaluation of leakage at duct 2
- Evaluation of leakage at duct 4

Accessories

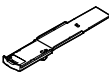
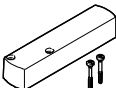
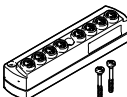
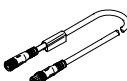
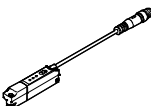


Designation	Description	→ Page/online
1 CPX modules CPX	Bus node, control block, input and output modules	1597
2 Controller CTMM	For VTEM and pneumatic interface to the terminal CPX	vtem
3 Valve body VEM	Contains 4 interconnected piston poppet valves with piezo pilot control	vtem
4 Inscription label holder ASCF	For a valve	1182
5 Blanking plate VABB	For unoccupied valve position (vacant position) or input module position	1182
6 Input module CTMM	For connecting sensors to the VTEM	1182
7 Cover cap ISK	For sealing unused ports	1182
8 Connecting cable NEBU	For connecting sensors	1182
9 Position sensor SDAP	Analogue position sensor for VTEM input module CTMM	1182
10 Blanking plug B	For sealing unused ports	1182
11 Fittings QS	For connecting compressed air tubing	1182
12 Silencer U	For exhaust ports	1182
13 Manifold rail VABM	Pneumatic and electrical interlinking	vtem
14 H-rail mounting VAME	For CPX and VTEM	1182

Motion Terminal >

Motion Terminal VTEM

Accessories – Ordering data

				Part no.	Type code	PU ¹⁾
4 Inscription label holder						
	Inscription label holder for a valve			8047501	ASCF-H-P11	4
5 Cover plate						
	Cover plate for a valve position or input module position			8047504	VABB-P11-27-T	1
6 Input module						
	Module with 8 inputs	Digital inputs	8047505	CTMM-S1-D-8E-M8-3	1	
		Analogue inputs	8047506	CTMM-S1-A-8E-A-M8-4	1	
7 Cover cap						
	Cover cap for sealing unused ports	For M8 connections	177672	ISK-M8	10	
8 Connecting cable						
	Modular system for connecting cables - Straight plug, 4-pin - Straight socket, M8x1, 4-pin	Cable length 0.1 ... 30 m	539052	NEBU-...	–	
		Cable length 2.5 m	554035	NEBU-M8G4-K-2.5-M8G4	1	
9 Position sensor						
	Analogue sensor for VTEM input module	Sensing range 0 ... 50 mm	8050120	SDAP-MHS-M50-1L-A-E-Q3-M8	1	
		Sensing range 0 ... 100 mm	8050121	SDAP-MHS-M100-1L-A-E-Q3-M8	1	
		Sensing range 0 ... 160 mm	8050122	SDAP-MHS-M160-1L-A-E-Q3-M8	1	
10 Blanking plug						
	For sealing unused ports	M5 thread	★ 3843	B-M5	10	
		G1/8 thread	★ 3568	B-1/8	10	
		Thread G3/8	★ 3570	B-3/8	10	
12 Silencer						
	For thread M7		161418	UC-M7	1	
	For G3/8 thread		★ 6843	U-3/8-B	1	
14 H-rail mounting						
	H-rail mounting		8047542	VAME-P11-MK	1	
11 Push-in fitting, straight						
	Connecting thread M5 for tubing O.D.	4 mm	★ 153315	QSM-M5-4-I	10	
	Connecting thread M7 for tubing O.D.	6 mm	★ 153321	QSM-M7-6-I	10	
	Connecting thread G1/8 for tubing O.D.	4 mm	★ 186095	QS-G1/8-4	10	
		6 mm	★ 186096	QS-G1/8-6	10	
		8 mm	★ 186098	QS-G1/8-8	10	
		10 mm	★ 132999	QS-G1/8-10-I	10	
	Connecting thread G3/8 for tubing O.D.	8 mm	★ 186111	QS-G3/8-8-I	10	
		10 mm	★ 186113	QS-G3/8-10-I	10	
12 mm		★ 186114	QS-G3/8-12-I	10		
16 mm		★ 186347	QS-G3/8-16	1		

1) Packaging unit.

11 Sensors

- + Proximity sensors specially adapted for use with Festo drives
- + Inductive sensors for detection and distance measurement of metal objects
- + Position sensors
- + Pressure sensors and vacuum switches
- + Flow sensors for flow and quality inspection
- + Opto-electrical sensors for colour recognition, distance measurement and part recognition
- + Signal converters
- + Air gap sensors for end-position sensing and position control
- + Sensor boxes for the process industry
- + Electrical limit switches





SMT-8★
SME-8★

Proximity sensors, for T-slot

- + Short design
- + Variants suitable for use with energy chains and robots

→ page 1197



SIEN★

Proximity sensors, inductive

- + PNP, NPN
- + Flush or non-flush mounting
- + Standard switching distance

→ page 1227



SDE5★

Pressure sensors

- + Pressure switches
- + Vacuum switches
- + Switching status indicated by an LED visible from all sides

→ page 1245



SPAN★

Pressure sensors

- + Pressure and vacuum
- + 13 pressure measuring ranges
- + All standard pressure units

→ page 1251

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Product overview

Software tool

Configurator 	Design a product with numerous features reliably and quickly with the help of the configurator. Select all the relevant product features step-by-step. The use of logic checks ensures that only correct configurations are available for selection.	The configurator is part of the electronic catalogue and is not available as a separate software program.
Festo Design Tool 3D 	The Festo Design Tool 3D is a 3D product configurator for generating specific CAD product combinations from Festo. The configurator makes your search for the right accessory easier, more reliable and faster. You can then order the module that has been created with a single order item – either completely pre-assembled or as individual parts in a single box. As a result, your bill of materials is considerably shortened and downstream processes such as product ordering, order picking and assembly are significantly simplified.	All ordering options are available in the following countries: AT, BE, CH, CZ, DE, DK, ES, EST, FI, FR, GB, GR, HU, IE, IT, NL, NO, PL, PT, RU, SE, SI, SK, TR, ZA. This tool can be found via the address: www.festo.com/fdt-3d-online in the above listed countries.

Proximity sensors, for T-slot

				 NEW
Type	Proximity sensors SMT-8M-A ★	Proximity sensors SME-8, SME-8M ★	Proximity sensors SDBT	Proximity sensors SMT-8F, SMT-8G, SMT-8-SL
Electrical connection	2-wire, 3-wire, 2-pin, 3-pin, cable, cable with plug, M8x1, M12x1, rotatable thread	2-wire, 3-wire, 3-pin, cable, cable with plug, M8x1, plug	2-wire, 3-wire, 2-pin, 3-pin, cable, cable with plug, M12x1, rotatable thread	2-wire, 3-wire, 3-pin, cable, cable with plug, M8x1, plug, rotatable thread
Operating voltage range DC	5 ... 30 V	0 ... 230 V	10 ... 30 V	10 ... 30 V
Switching element function	N/C contact, N/C contact or N/O contact switchable, N/O contact	N/O contact, N/C contact	N/O contact	NAMUR, N/O contact
Switching output	Non-contacting, 2-wire, NPN, PNP, PNP/NPN switchable	Contacting, bipolar, without LED function	Non-contacting, 2-wire, NPN, PNP	PNP, NAMUR
NEW				Additional versions
Description	- Measuring principle: magneto-resistive - Short design - Variant Ex2 for use in potentially explosive areas - Insertable in the slot from above, flush with the cylinder profile - LED switching status indication - LED operating reserve indication - Cable length 01 ... 30 m	- Measuring principle: magnetic reed - SME-8-...S6: heat-resistant design - Variants suitable for use with energy chains and robots - Screw-clamped or clamped in the slot, insertable in the slot from above or lengthwise - LED switching status indication - Cable length 03, 2.5, 5, 7.5, 02 ... 10 m	- Measuring principle: magneto-resistive - Oil resistant, welding field resistant, resistant to welding spatter - Screw-clamped in slot, insertable from above - LED switching status indication - Cable length 03 ... 5 m - SDBT-EX6: to EU Explosion Protection Directive (ATEX)	- Measuring principle: magneto-resistive - SMT-8-F: in accordance with the ATEX Directive for explosive atmospheres - SMT-8G: design ideally matched to gripper sensing - SMT-8-SL: sturdy thanks to long guides and plug directly at the sensor - Variants suitable for use with energy chains and robots - Insertable in the slot lengthwise or from above - LED switching status indication - Cable length 03, 2.5, 5 m
→ Page/online	1197	1197	sdbt	smt-8

Product overview

Proximity sensors, for T-slot

				
Type	Proximity sensors CRSMT-8	Proximity sensors CRSMT-8M	Proximity sensors SMEO-8E	Proximity sensors SMT0-8E
Electrical connection	3-wire, cable	3-wire, 3-pin, rotatable thread, cable, cable with plug, M12x1, M8x1	2-wire, 3-pin, cable, M8x1, M12x1, plug	3-pin, M12x1, M8x1, plug
Operating voltage range DC	10 ... 30 V	5 ... 30 V	0 ... 250 V	10 ... 30 V
Switching element function	N/O contact	N/O contact	N/O contact	N/O contact
Switching output	PNP	PNP	Contacting, contacting bipolar, without LED function	NPN, PNP
Description	- Measuring principle: magneto-resistive - Corrosion-resistant design - Suitable for use in the food industry (see www.festo.com/sp/crsmt-8 > "Certificates" tab), resistant to acids, lye and cooling lubricants - Insertable in the slot lengthwise, flush with the cylinder profile - LED switching status indication - Cable length 2.5, 5 m	- Measuring principle: magneto-resistive - Corrosion-resistant design - Suitable for use in the food industry (see www.festo.com/sp/crsmt-8m > "Certificates" tab), resistant to acids and cooling lubricants - Insertable in the slot from above, flush with the cylinder profile - LED switching status indication - Cable length 0.3, 5, 10 m	- Measuring principle: magnetic reed - Sturdy sensor in block design - Plug integrated in housing - LED switching status indication - Cable length 2.5 m	- Measuring principle: magneto-resistive - Sturdy sensor in block design - Plug integrated in housing - LED switching status indication
→ Page/online	crsmt-8	1197	smeo	smt0

Proximity sensors, for T-slot

		
Type	Proximity sensors SMTSO-8E	Proximity sensors SMP0-8E
Electrical connection	3-pin, M12x1, plug	
Operating voltage range DC	10 ... 30 V	
Switching element function	N/O contact	
Switching output	NPN, PNP	
Description	- Measuring principle: magneto-inductive - Welding field-resistant design - Sturdy sensor in block design - Plug integrated in housing - LED switching status indication	- Pneumatic proximity sensor - Measuring principle: magnetic - Function: 3/2-way valve, normally closed - Pneumatic connection via female thread M5 - Visual switching status indication
→ Page/online	smtso	smpo

Proximity sensors, for C-slot

		
Type	Proximity sensors SME-10, SME-10M	Proximity sensors SMT-10M, SMT-10G
Electrical connection	2-pin, 3-pin, 3-wire, cable, cable with plug, M12, M8x1, snap collar, plug, rotatable thread, open end	2-pin, 3-pin, 3-wire, cable, cable with plug, M12, M8x1, snap collar, rotatable thread, open end
Operating voltage range DC	5 ... 30 V	5 ... 30 V
Switching element function	N/O contact	N/O contact
Switching output	Contacting, bipolar	NPN, PNP, non-contacting, 2-wire
Description	- Measuring principle: magnetic reed - Clamped in C-slot, insertable in the slot from above or lengthwise - LED switching status indication - Cable length 0.3, 2.5 m	- Measuring principle: magneto-resistive - Clamped in C-slot, insertable in the slot from above or lengthwise, secured with screw - LED switching status indication - Cable length 0.3, 2.5 m
→ Page/online	1215	1215

Product overview

Proximity sensors, block design

			
Type	Proximity sensors SME-1	Proximity sensors SMT-C1	Proximity sensors SMEO-1
Electrical connection	2-wire, 3-wire, 3-pin, cable, M8x1, plug	3-wire, 3-pin, cable, cable with plug, M8x1, M12x1, rotatable thread	2-wire, 3-wire, 3-pin, cable, M8x1, plug
Operating voltage range DC	0 ... 200 V	10 ... 30 V	0 ... 200 V
Switching element function	N/O contact	N/O contact	N/O contact
Switching output	Contacting, bipolar	PNP	Contacting, bipolar
Description	- Measuring principle: magneto-inductive - For mounting kit - With or without LED switching status indication	- Measuring principle: magneto-inductive - For Clean Design standards-based cylinder DSBF with mounting rail for sensors - LED switching status indication	- Measuring principle: magnetic reed - SMEO-1-S6: heat-resistant design - With or without LED switching status indication - Cable length 2.5, 5 m
→ Page/online	sme-1	smt-c1	smeo-1

Proximity sensors, block design

			
Type	Proximity sensors SMT0-1	Proximity sensors SMTSO-1	Proximity sensors SMP0-1
Electrical connection	3-wire, 3-pin, cable, M8x1, plug	3-pin, M12x1, plug	
Operating voltage range DC	10 ... 30 V	10 ... 30 V	
Switching element function	N/O contact	N/O contact	
Switching output	NPN, PNP	PNP	
Description	- Measuring principle: magneto-resistive - LED switching status indication - Cable length 2.5 m	- Measuring principle: magneto-resistive - Welding field-resistant design - LED switching status indication	- Measuring principle: magnetic - Pneumatic proximity sensor - Function: 3/2-way valve, normally closed - Pneumatic connection via barbed connector for tubing I.D. 3 mm - Visual switching status indication
→ Page/online	smt0-1	smtso-1	smpo

Cylinder signal generators

	
Type	Cylinder signal generators PPL
Standard nominal flow rate	48 l/min
Operating pressure	1 ... 8 bar
Pneumatic connection	Barbed connector for 3 mm I.D. plastic tubing
Type of mounting	Hollow bolt G1/8, G1/4
Description	- For contactless pneumatic signal generation at the end of cylinder strokes - Function: 3/2-way valve, normally closed - Can be screwed directly into the supply port of the cylinder using a hollow bolt
→ Page/online	ppl

Product overview

Inductive sensors

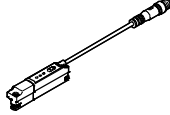
				
Type	Proximity sensors SIEN	Proximity sensors SIEA	Proximity sensors SIED	Proximity sensors SIEF
Size	4 mm, 6.5 mm, M5x0.5, M8x1, M12, M12x1, M18, M18x1, M30, M30x1.5	M8, M12, M18, M30	M12, M18, M30	40x40x65 mm, M8, M12, M18, M30
Switching output	NPN, PNP		Non-contacting, 2-wire	NPN, PNP
Switching element function	N/O contact, N/C contact		N/O contact, N/C contact	Antivalent, N/O contact
Electrical connection	3-wire, 3-pin, cable, M8x1, M12x1, plug	3-pin, 4-pin, M8x1, M12x1, plug	2-wire, 2-pin, cable, M12x1, plug	3-wire, 3-pin, 4-pin, Fixcon, cable, M8x1, M12x1, plug
Operating voltage range DC	10 ... 30 V	15 ... 30 V	10 ... 320 V	10 ... 65 V
Description	• With standard switching distance • For DC voltage • Round design • Metric thread • Flush or non-flush mounting • LED switching status indication • Design with metal or polyamide housing	• With analogue output • Flush installation • Metric thread	• With standard switching distance • For DC and AC voltage • Metric thread • Flush or non-flush mounting • LED switching status indication • Design with metal or polyamide housing	• Reduction factor 1 for all metals • Welding field resistant • Design with housing resistant to welding spatter • Flush, partially flush or non-flush mounting • LED switching status indication
→ Page/online	1227	siea	sied	sief

Inductive sensors

			
Type	Proximity sensors SIEH	Proximity sensors SIES-Q	Proximity sensors SIES-8M
Size	3 mm, M12, M18	12x26x40 mm, 40x40x120 mm, 5x5x25 mm, 8x8x40 mm, 8x8x59 mm	T-slot
Switching output	NPN, PNP	NPN, PNP	NPN, PNP
Switching element function	N/O contact, N/C contact	Antivalent, N/O contact, N/C contact	N/O contact, N/C contact
Electrical connection	3-wire, 3-pin, cable, cable with plug, M8x1, M12x1, plug	3-wire, 3-pin, cable, M8x1, screw terminal, plug	3-wire, 3-pin, cable, cable with plug, M8x1, rotatable thread
Operating voltage range DC	10 ... 30 V	10 ... 30 V	10 ... 30 V
Description	• With increased switching distance • Flush installation • Metric thread • LED switching status indication • Design with stainless steel housing	• Block design • Flush installation • LED switching status indication	• Suitable for position sensing for electric axes and grippers with T-slot • Flush installation • Switching status indication with 2 LEDs for better visibility regardless of the direction from which it is approached • Only inductive sensor for 8 slot with patented LED status indicator
→ Page/online	sieh	sies	1227

Product overview

Position sensors

			
Type	Position sensors SRBS	★ Position sensors SDAP-MHS	Position sensors SDAT-MHS
Design	Round	For T-slot	For T-slot
Position measuring range	>270°	0 ... 160 mm	0 ... 160 mm
Analogue output	50 mA	4 ... 20 mA	4 ... 20 mA
Electrical connection	4-pin, cable with plug, M8, rotatable thread	4-pin, cable with plug, M8, rotatable thread	4-pin, cable with plug, M8, rotatable thread
Description	- Used to detect rotation of the shaft on rotary drives DRVS and DSM - The sensor can be quickly assembled without having to manually search for switching points - Simple and reliable operation using just one push-button directly on the device	- Only for use with Festo Motion Terminal VTEM - Measuring principle: magnetic Hall - Insertable in the slot from above, secured with screw - Suitable for use with energy chain and robot lines - LED status indications - Cable length 0.3 m	- Measuring principle: magnetic Hall - Insertable in the slot from above, secured with screw - Suitable for use with energy chain and robot lines - LED status indications - Cable length 0.3 m - Programmable IO-Link/switching output
→ Page/online	1239	sdap	sdatt

Position sensors

			
Type	Position transmitters SMAT-8E	Position transmitters SMAT-8M	Position sensors SMH
Design	For T-slot	For T-slot	For grippers
Position measuring range	48 ... 52 mm	40 mm	
Analogue output	0 ... 10 V, 4 ... 20 mA	0 ... 10 V	
Electrical connection	4-pin, M8x1, plug	4-pin, cable with plug, M8x1, rotatable thread	M8x1, cable with plug, 4-pin
Description	- Measuring principle: magnetic Hall - Current and voltage signal at the analogue output - Insertable in the slot lengthwise - Suitable for use with energy chain and robot lines - LED status indications - Cable length 2.5 m, 5 m	- Measuring principle: magnetic Hall - Displacement-proportional analogue output signal - Insertable in the slot from above, central clamping - Suitable for use with energy chain and robot lines - LED status indications - Cable length 0.3 m	- Measuring principle: magnetic Hall 3 gripper positions can be recorded via the evaluation unit - Freely selectable switching points
→ Page/online	smat-8e	smat-8m	smh-h1

Displacement encoders

			
Type	Displacement encoders MME-MTS-TLF	Displacement encoders MLO-POT-TLF	Displacement encoders MLO-POT-LWG
Stroke	225 ... 2000 mm	225 ... 2000 mm	100 ... 750 mm
Measuring principle of displacement encoder	Digital	Analogue	Analogue
Output signal	CAN protocol type SPC-AIF	Analogue	Analogue
Path resolution	0 ... 0.01 mm	0.01 mm	0.01 mm
Description	- Measuring principle: magnetostrictive - Contactless with absolute measurement - High travel speed - System product for servo-pneumatic positioning technology and Soft Stop - IP65 degree of protection	- Conductive plastic potentiometer - Absolute measurement with high resolution - High travel speed and long service life - Plug-in connections	- Connecting rod potentiometer - Absolute measurement with high resolution - Long service life - High degree of protection - Plug-in connections
→ Page/online	mme	mlo	mlo

Product overview

Pressure and vacuum sensors

				
Type	Pressure sensors SDE5	Pressure sensors SPAN	Pressure sensors SPAE	Pressure sensors SPAU
Pressure measuring range	-1 ... 10 bar	-1 ... 16 bar	-1 ... 10 bar	-1 ... 16 bar
Switching element function	N/O contact, switchable, N/C contact	N/C or N/O contact, switchable	N/O contact, switchable, N/C contact	N/C or N/O contact, switchable
Pneumatic connection	QS-5/32, QS-1/4, QS-4, QS-6	Male thread G1/8, NPT1/8-27, R1/8, female thread M5, G1/8, push-in connector QS4	Flange, QS-3, QS-4, push-in sleeve QS-4, push-in sleeve QS-6	G1/8, M5, M7, NPT1/8-27, QS-4, QS-5/32, QS-6, R1/4, R1/8
Electrical connection	3-wire, 3-pin, cable, M8x1, plug, to EN 60947-5-2, round design	Plug connector, square design, 4-pin	3-wire, cable, open end	4-pin, M12x1, M8x1, plug, to EN 60947-5-2, round design
Display type		Illuminated LCD	LED display, 2-digit	LED, illuminated LCD
Description	• Programmable and configurable pressure switch for simple pressure sensing tasks • Threshold/window comparator • Switching point adjustment by teach-in function • Integrated microprocessor • Switching status indicated by an LED visible from all sides • Certification: c UL us Listed (OL), C-Tick	• For monitoring compressed air and non-corrosive gases • For network monitoring, regulator monitoring, leak test, object detection • Relative method of measurement based on a piezoresistive measuring cell • Serial communication integrated using IO-Link 1.1 • Compact design • High-contrast, blue backlit display	• Electronic pressure sensor with piezoresistive pressure measuring cell, integrated signal processing, numeric pressure indicator in percent, operating key and a switching output, PNP/NPN switchable • Display of minimum and maximum readings • All parameters entered can be transferred to other SPAEs (replicator function) • Communication interface IO-Link®	• For monitoring compressed air and non-corrosive gases • With and without display • Transfer of the pressure value as switching signal, analogue signal or via IO-Link® to the connected control system • Maximum flexibility through various pneumatic adaptation options and switchable electric outputs
→ Page/online	1245	1251	spae	1259

Pressure and vacuum sensors

				
Type	Pressure sensors SPAW	Pressure switches SPBA	Pressure transmitters SPTE	Pressure transmitters SPTW
Pressure measuring range	-1 ... 100 bar	-1 ... 10 bar	-1 ... 10 bar	-1 ... 10 bar
Switching element function	Switchable	Antivalent, changeover switch		
Pneumatic connection	Male thread G1/2, female thread G1/4	G1/8	Flange, QS-4, push-in sleeve QS-3, QS-4, QS-6	G1/4
Electrical connection	Plug, to EN 60947-5-2, M12x1, 4-pin, 5-pin, round design	Plug, to EN 60947-5-2, M12x1, 4-pin, round	3-wire, cable, open end	4-pin, M12x1, plug, to EN 60947-5-2, round design
Display type	4-character alphanumeric, LED indicator			
Description	• Highly robust • For liquid and gaseous media • Quick and easy setting of the switching outputs using three pushbuttons • Optimum legibility: display housing rotatable 320°, display at an angle of 45°	• Pressure sensor with permanently set switching point • For solenoid valve VSVA • Mounting: screw-in	• Piezoresistive pressure sensor • Measured variable: relative pressure • Cable length 2.5 m • Compact: 8-way wall bracket for manifold assembly	• Sensor versions: piezoresistive pressure sensor or metal thin-film pressure sensor • Measured variable: relative pressure • Operating medium: liquid and gaseous media • No seal: pressure measuring cell and stainless steel interfaces • IP67 degree of protection
→ Page/online	spaw	spba	spte	sptw

Product overview

Pressure and vacuum sensors

				
Type	Pressure switches, vacuum switches PEV, VPEV	PE-converters PEN, PE, VPE	Pressure sensors SDE1	Pressure sensors SDE3
Pressure measuring range	-1 ... 10 bar	-1 ... 0 bar	-1 ... 10 bar	-1 ... 10 bar
Switching element function	Changeover switch	N/O contact, changeover switch	Switchable	Switchable
Pneumatic connection	G1/8, G1/4, M5	G1/8, M5, PK-4	G1/8, QS-4, R1/4, R1/8	QS-5/32, QS-4
Electrical connection	4-pin, type A, M8x1, M12x1, screw terminal, plug, to DIN 43650, to EN 60947-5-2, round design, square design	3 flying leads, 3-wire, 4-wire, cable, open end	M8x1, M12x1, cable with plug, plug, round design, to EN 60947-5-2, 3-pin, 4-pin	4-pin, 5-pin, cable, cable with plug, M8x1, M12x1, plug, to EN 60947-5-2, round design
Display type			Illuminated LCD, backlit LCD	Illuminated LCD
Description	- Mechanical pressure and vacuum switch - Adjustable switching point - Mounting: screw-in, via through-holes or via H-rail - Visual scale for pressure adjustment - Certification: CCC	- Pneumatic/electric differential pressure switch - Pneumatic/electric pressure transducer - Design for vacuum - Mounting on mounting frame 2N - Splash-proof design - Certification: CCC	- Five pressure measuring ranges - Measurement of relative or differential pressure - Switching output PNP, NPN and with analogue power or voltage output - Display with LCD or illuminated LCD - Mounting: via H-rail, via wall/surface bracket, front panel mounting - Certification: c UL us Listed (OL), C-Tick	- Five pressure measuring ranges - Measurement of relative or differential pressure or two independent pressure inputs - Switching output 2x PNP or 2x NPN - Numerical and graphical pressure indication - Mounting: via H-rail, via wall/surface bracket, front panel mounting, via through-holes - Certification: C-Tick, ATEX, c UL us Listed (OL)
→ Page/online	pev	pen	sde1	sde3

Flow sensors

			
Type	Flow sensors SFAH	Flow sensors SFAW	Flow sensors SFAB
Flow measuring range	0.1 ... 200 l/min	1.8 ... 100 l/min	10 ... 1000 l/min
Operating medium	Compressed air ISO 8573-1:2010 [6:4:4], nitrogen	Liquid media, water, neutral liquids	Compressed air to ISO 8573-1:2010 [6:4:4], compressed air to ISO 8573-1:2010 [7:4:4], nitrogen
Operating pressure	-0.9 ... 10 bar	0 ... 12 bar	0 ... 10 bar
Pneumatic connection	Female thread G1/4, G1/8, for tubing O.D. 4, 6, 8		QS-5/16, QS-1/4, QS-3/8, QS-6, QS-8, QS-10, QS-12
Electrical connection		Straight plug, M12x1, 5-pin, A-coded	5-pin, M12x1, straight plug
NEW	• New series		
Description	- Process monitoring, compressed air monitoring, forming gas monitoring, pneumatic object monitoring, parts handling of ultra-small parts, leak test - Compact design 20x58 mm - Clear 2-line display - Mounting: H-rail mounting, wall or surface mounting, front panel mounting - Serial communication integrated using IO-Link 1.1	- Cooling circuit monitoring, leakage or line break monitoring, process water monitoring, fill level monitoring - Input connection: clamped terminal connection DN15, DN20, barbed hose fitting 13 mm, female thread G1/2, G3/4, G1, user-specific connection - With optional integrated temperature sensor - Connection to higher-level systems is provided by two switching outputs, an analogue output and/or an IO-Link® interface - Certification: RCM, c UL us Listed (OL) - Display is rotatable 90° anti-clockwise and 180° clockwise	- Flow sensor with integrated digital display - With unidirectional flow input - Mounting: H-rail mounting, wall or surface mounting - Certification: C-Tick
→ Page/online	sfah	sfaw	sfab

Product overview

Flow sensors

		
Type	Flow sensors SFAM	Flow sensors SFET
Flow measuring range	1000 ... 15000 l/min	0.05 ... 50 l/min
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4], nitrogen	Compressed air to ISO 8573-1:2010 [1:4:2], nitrogen
Operating pressure	0 ... 16 bar	~0.9 ... 7 bar
Pneumatic connection	Battery module, G1/2, G1, G1 1/2, NPT1 1/2-11 1/2, NPT1-1 11/2, NPT1/2-14	Female thread G1/8, QS-4, QS-6
Electrical connection	5--pin, M12x1, straight plug	Cable
Description	• Stand-alone device or combined with MS series service units • Supplies absolute flow information and accumulated air consumption measurements • Covers large measuring range with great precision thanks to high dynamic response • Large, illuminated LCD display	• With bidirectional flow input • Mounting: through-holes • Electrical connection via open cable end • Cable length 3 m • Certification: C-Tick
→ Page/online	sfam	sfet

Force sensors

	
Type	Sensors SKDA
Electrical connection	M12x1, socket, 4-pin, A-coded
Operating voltage range DC	10 ... 30 V
Degree of protection	IP67
Force measuring range	0 ... 17 kN
Description	• Robust metal housing • Thin film sensor
→ Page/online	skda

Product overview

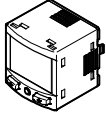
Opto-electrical sensors

				
Type	Diffuse sensors SOEG-RT, retro-reflective sensors SOEG-RS	Through-beam sensors SOEG-E (receiver), SOEG-S (transmitter)	Fibre-optic units SOEG-L	Laser diffuse sensors SOEL-RT, laser retro-reflective sensors SOEL-RS
Method of measurement	Diffuse sensor, retro-reflective sensor, diffuse sensor with background suppression, distance sensor, for transparent objects	Through-beam sensor, receiver, transmitter	Fibre-optic unit	Distance sensor, diffuse sensor, retro-reflective sensor, diffuse sensor with background suppression
Working range	0 ... 5500 mm	0 ... 20000 mm	0 ... 250 mm	0 ... 20000 mm
Size	20x32x12 mm, 30x30x15 mm, 50x50x17 mm, M5x0.5, M12x1, M18x1, M12, M18, 4 mm	M18x1, 20x32x12 mm, 30x30x15 mm, 50x50x17 mm	20x32x12 mm, 30x30x15 mm	20x32x12 mm, 50x50x17 mm
Setting options	Teach-in, teach-in via electrical connection, potentiometer	Teach-in, teach-in via electrical connection, potentiometer	Teach-in, teach-in via electrical connection, potentiometer	Teach-in, teach-in via electrical connection, potentiometer
Type of light	Infrared, red, red polarised	Infrared, red	Red	Laser, pulsed laser, red, red 650 nm, red polarised
Switching output	NPN, PNP	NPN, PNP	NPN, PNP	NPN, PNP
Description	- Round design, block design - Electrical connection via open cable end or plug	- Round design, block design - Electrical connection via open cable end or plug	- Block design - Electrical connection via open cable end or plug	Electrical connection via open cable end or plug
→ Page/online	soeg	soeg	soeg	soel

Opto-electrical sensors

				
Type	Colour sensors SOEC	Fibre-optic units SOE4	Fork light barriers SOOF	Fibre-optic cables SOOC, SOEZ
Method of measurement	Colour sensor	Fibre-optic unit	Fork light barrier	Through-beam sensor, fixed focus, fork light barrier, diffuse sensor, fibre-optic cable
Working range	12 ... 32 mm	2 ... 2000 mm		2 ... 650 mm
Size	50x50x17 mm		Fork 120x60 mm, fork 30x35 mm, fork 50x55 mm, fork, 80x55 mm	M4, M6
Setting options	Teach-in, teach-in via electrical connection	Teach-in, teach-in via electrical connection	Teach-in, potentiometer	
Type of light	White	Red	Red	
Switching output	PNP	NPN, PNP	NPN, PNP	
Description	- Diffuse sensor - Block design - Electrical connection via M12x1 plug, 8-pin - Display via 7 LEDs	- Use for precise and space-saving position sensing in electronics and light assembly - Switching frequencies up to 8000 Hz - Operational with fibre-optic cable SOOC as accessory - Variants: LED or LED display, timer function - Mounting: H-rail mounting or via through-holes - With protection against mutual interference	- Through-beam sensor with minimal installation effort - Design: polymer or metal - Sturdy housing: high shock and vibration resistance - IP67 degree of protection - Electrical connection via M8x1 plug, 3-pin - LED displays	Cable connection, push-in connector
→ Page/online	soec	soe4	soof	sooc

Signal converters

		
Type	Signal converters SVE4	Signal converters SCDN
Signal range	0 ... 10 V +/-0.3 V, 0 ... 20 mA +/-0.6 mA, adapted for position sensors SMH-S1-HG	0 ... 20 mA, 0 ... 10 V
Switching output	2x NPN, 2x PNP	2 x PNP or 2 x NPN, switchable
Switching function	Freely programmable	Freely programmable
Electrical connection Output	4-pin, M8x1, plug, to EN 60947-5-2	Plug, plug pattern L1J, 4-pin
Electrical connection Input	4-pin, socket, M8x1, to EN 60947-5-2	4-pin, analogue input, power supply, 2x socket, plug pattern EC
Description	- Converts analogue signals into switching points - Switching function freely programmable with teach-in - Threshold value, hysteresis or window comparator - Mounting: H-rail mounting or via adapter plate - LED switching status indication - Certification: c UL us Listed (OL), C-Tick	- Converts analogue signals into IO-Link® - Switching function freely programmable with teach-in - Large, high-contrast display - Mounting: wall or surface mounting, front panel mounting, manifold mounting using mounting brackets
→ Page/online	sve4	scdn

Air gap sensors

				
Type	Air gap sensors SOPA	Micro reflex sensors, reflex sensors RML, RFL	Back pressure end stops SD-2, SD-3, SD-3-N	Air barriers SFL, SML
Sensing range	20 ... 200 µm	Distance between nozzles 4.8 ... 5.1 mm, 4.5 ... 15.5 mm	Distance between nozzles 0 ... 0.5 mm	Distance between nozzles 5 ... 50 mm, to 100 mm
Operating pressure	4 ... 7 bar	0.075 ... 0.5 bar, 0.1 ... 1.5 bar	0 ... 8 bar	0.1 ... 0.4 bar, 0.1 ... 4 bar, 0 ... 8 bar
Display type	Illuminated LCD, multi-colour	Signal pressure ≥0.5 mbar	Pressure signal 0 ... 8 bar	Pressure signal
Operating medium	Compressed air to ISO 8573--1:2010 [7:4:4]	Filtered, unlubricated compressed air	Compressed air, filtered, lubricated or unlubricated	Filtered, unlubricated compressed air
Description	- Convenient solution for high-precision contact and distance monitoring - Setting option: teach-in or numerical setting using three-button operation - Integrated air jet function - Multi-coloured LCD display - Mounting: H-rail mounting, wall mounting, through-hole - Certification: C-Tick	- Back pressure actuated valve - For contactless sensing of indicating instruments, checking pressing and stamping tools, edge control, magazine control, for measuring and counting - Can be used even in very dirty environments, in complete darkness, with translucent or magnetic objects	- Can be used for stroke-dependent signal generation as a limit switch and fixed stop - Ideal for end-position sensing and position control with high accuracy requirements and small actuating forces - SD-3-N for sensing fluid levels and heavily foaming liquids - For use in inaccessible places	- Sender nozzle, receiver nozzle, gap sensor - Back pressure actuated valve - Operational reliability even in very dirty environments - Reliable even with high ambient temperatures - Insensitive to mechanical influences and sound waves - Reliable even in complete darkness and when sensing translucent objects
→ Page/online	sopa	rfl	sd	sml

Product overview

Sensor boxes

			
Type	Sensor boxes SRBC	★ Sensor boxes SRBG	Sensor boxes SRBE
Measured variable			
Operating voltage range AC	0 ... 250 V		0 ... 250 V
Operating voltage range DC	0 ... 175 V	6 ... 60 V	0 ... 60 V
Electrical connection	Screw terminal, 10-pin		Screw terminal, 10-pin, 14-pin
Type of mounting	On flange ISO 5211, via mounting bracket		On flange ISO 5211, via mounting bracket
Description	- Pre-assembled mounting adapter for ease of installation - Trip cams can be set easily without additional tools - Sturdy, corrosion-resistant design, ideal for use in harsh operating conditions - Clearly visible 3D position indicator allows rapid detection of the current position of the quarter turn actuator	- Compact housing with M12 plug connection - Direct mounting on quarter turn actuators to VDI/VDE 3845 - AS-Interface version with extended addressing - Intrinsically safe version to ATEX and SIL 2 to IEC 61508	- Trip cams can be set easily without additional tools - Sturdy, corrosion-resistant design, ideal for use in harsh operating conditions - Clearly visible 3D position indicator allows rapid detection of the current position of the quarter turn actuator
→ Page/online	srbc	srbg	srbe

Sensor boxes

		
Type	Limit switch attachments SRAP	Limit switch attachments DAPZ-AR
Measured variable	Rotation angle	
Operating voltage range AC		4 ... 250 V
Operating voltage range DC	15 ... 30 V	4 ... 250 V
Electrical connection		
Type of mounting	Screw terminal, 9-pin, plug-in	Screw terminal
Description	- Based on standard VDI/VDE 3845 (NAMUR) - Analogue - For monitoring the position of quarter turn actuators - Sensors based on 2D Hall technology	- Round design - Drive interface to standard VDI/VDE 3845 (NAMUR) - With display
→ Page/online	srp	dapz

Electromechanical switches

	
Type	Micro switch S-3
Operating voltage range AC	12 ... 250 V
Operating voltage range DC	12 ... 250 V
Electrical connection	Screw connector
Degree of protection	IP00
Type of mounting	Two through-holes in housing, mounting plate
Description	- Electric limit switch - N/C contact, N/O contact, changeover switch - Actuator attachments: roller lever type AR, roller lever with idle return type AL, whisker actuator type AF
→ Page/online	s-3



Enjoy the benefits of truly reliable cylinder sensing

- + Optimised for drive solutions from Festo
- + The right variant for your application
- + Adjustment components reduce assembly time

Proximity sensors › For T-slot ›

Proximity sensors, for T-slot

SME-8 ★

SMT-8 ★

Proximity sensors > For T-slot >

Proximity sensors, for T-slot

SME-8★ / SMT-8★



Overview, configuration and ordering

→ www.festo.com/catalogue/sme-8



Additional information, support and user documentation

→ www.festo.com/sp/sme-8



Quick ordering of basic designs

→ page 1202, 1209



Selected types in accordance with the ATEX Directive for explosive atmospheres

→ www.festo.com/catalogue/ex



- + SME-8: magnetic reed measuring principle
- + SMT-8: magneto-resistive measuring principle
- + Screw-clamped or clamped in the slot, insertable in the slot from above or lengthwise
- + Cable length 0.1 ... 30 m
- + Variant suitable for use with energy chains and robots
- + SME8...S6: heat-resistant design
- + SMT-8-...-Ex2: variant for use in potentially explosive areas

Proximity sensors SME/SMT-8 ★ for T-slot

Product range overview

Measuring principle	Type	Electrical connection	Operating voltage range	Switching output	Switching element function	→ Page/ online
Magnetic reed	Standard					
	SME-8M	Cable – 2-wire – 3-wire Cable with plug, 2-pin Cable with plug, 3-pin – M8x1, rotatable thread – M8x1, snap-on flange – M12x1, rotatable thread	5 ... 30 V AC 5 ... 30 V DC	Contacting, bipolar	N/O contact N/C contact	1201
	SME-8	Cable – 2-wire – 3-wire Cable with plug, 3-pin – M8x1	3 ... 230 V AC 3 ... 230 V DC	Contacting, bipolar	N/O contact N/C contact	1203
	SME-8-SL	Plug, 3-pin – M8x1	10 ... 30 V AC 10 ... 30 V DC	Contacting, bipolar	N/O contact	sme
	SME-8-FM	Cable – 2-wire – 3-wire	10 ... 30 V AC 10 ... 30 V DC	Contacting, bipolar	N/O contact	sme
	Block design					
	SMEO-8E	Plug, 3-pin – M8x1 – M12x1	3 ... 230 V AC 3 ... 250 V DC	Contacting, bipolar	N/O contact	smeo
	Heat-resistant up to 120°C					
	SME-8-...-S6	Cable – 2-wire	0 ... 30 V AC 0 ... 30 V DC	Contacting, bipolar	N/O contact	1203
	SMEO-8E-...-S6	Cable – 2-wire	0 ... 30 V AC 0 ... 30 V DC	Contacting	N/O contact	smeo

Proximity sensors > For T-slot >

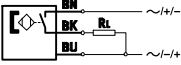
Proximity sensors SME/SMT-8 ★ for T-slot

Product range overview

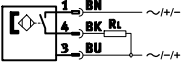
Measuring principle	Type	Electrical connection	Operating voltage range	Switching output	Switching element function	➔ Page/ online
Magneto-resistive	Short design					
	SMT-8M-A	Cable, 3-wire Cable with plug, 3-pin – M8x1, rotatable thread – M12x1, rotatable thread	5 ... 30 V DC	PNP	N/O contact	1206
				NPN Non-contacting, 2-wire	N/C contact	
	Standard					
	SMT-8	Cable, 3-wire Cable with plug, 3-wire – M8x1	10 ... 30 V DC	PNP NPN	N/O contact	smt
	SMT-8-SL	Plug, 3-pin – M8x1	10 ... 30 V DC	PNP	N/O contact	smt
	SMT-8G	Cable, 3-wire Cable with plug, rotatable thread – M8x1, 3-pin	10 ... 30 V DC	PNP NPN	N/O contact	smt
	Corrosion resistant					
	CRSMT-8M	Cable, 3-wire Cable with plug, rotatable thread	5 ... 30 V DC	PNP	N/O contact	1210
	CRSMT-8	Cable, 3-wire	10 ... 30 V DC	PNP	N/O contact	crsmt
	Block design					
	SMT0-8E	Plug, 3-pin – M8x1 – M12x1	10 ... 30 V DC	PNP NPN	N/O contact	smt0
	Welding field resistant					
	SDBT-BSW	Cable with plug, 3-pin, rotatable thread – Cable, 3-wire – Cable, 2-wire	10 ... 30 V DC	PNP NPN Non-contacting, 2-wire	N/O contact	sdbt
To EU Explosion Protection Directive (ATEX)						
	SDBT-MS-...-EX6	– Cable, 2-wire, open end	8.2 V DC	NAMUR	NAMUR	sdbt
Magneto-inductive	SMTSO-8E	Plug, 3-pin – M12x1	10 ... 30 V DC	PNP NPN	N/O contact	smtso

Proximity sensors SME-8M★ for T-slot

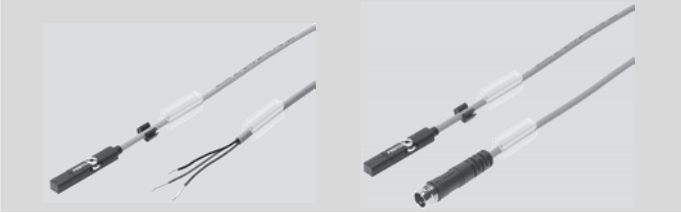
Data sheet



E.g. N/O contact, 3-wire, with cable



E.g. N/O contact, 3-wire, with plug



Technical data		Download CAD data → www.festo.com		
SME-8M-	DS	ZS	DO	
Measuring principle	Magnetic reed			
Switching output	Contacting, bipolar			
Switching element function	N/O contact		N/O contact	N/C contact
Operating voltage range [V DC]	5 ... 30			
Operating voltage range [V AC]	5 ... 30			
Max. output current [mA]	500	80	80	
Type of mounting	Screw-clamped, insertable in the slot from above			
Special features	Oil resistant			
Cable length [m]	0.2 ... 10			
Max. connecting cable length [m]	10			
Length/width/height [mm]	32/5/5			

Pin allocation to EN 60947-5-2

DS				ZS				DO			
Plug, 3-pin				Plug, 3-pin				Plug, 2-pin			
M12x1	Pin	Wire colour	Allocation	M8x1	Pin	Wire colour	Allocation	M8x1	Pin	Wire colour	Allocation
	1	Brown	+		1	Brown	+		1	Brown	+
	3	Blue	–		3	Blue	–		3	Blue	–
	4	Black	Output		4	Black	Output		2	White	Output
ZS				DO				DO			
Plug, 2-pin				Plug, 3-pin				Plug, 3-pin			
M12x1	Pin	Wire colour	Allocation	M8x1	Pin	Wire colour	Allocation	M12x1	Pin	Wire colour	Allocation
	1	Brown	+		1	Brown	+		1	Brown	+
	4	Blue	–		3	Blue	–		3	Blue	–
					4	Black	Output		2	White	Output

Operating conditions		
Ambient temperature [°C]	–40 ... +70	
Ambient temperature [°C]	–5 ... +70	
with flexible cable installation		

Materials	
Housing	PA, TPE-(PU), high-alloy stainless steel, nickel-plated brass
Cable sheath	TPE-U (PU), oil resistant

Mechanics		
Electrical connection	OE	M...
Type of mounting	Screw-clamped, insertable in the slot from above	
Housing	PA	PA
	High-alloy stainless steel	High-alloy stainless steel
	–	Nickel-plated brass
	–	TPE-U(PUR)

Proximity sensors > For T-slot >

Proximity sensors SME-8M★ for T-slot

Order code

SME

8M

24 V

Type	
SME	Proximity sensor, magnetic reed

Design	
8M	For T-slot, insertable in the slot from above

Switching output, switching element function	
ZS	N/O contact, 2-wire
DS	N/O contact, 3-wire
DO	N/C contact, 3-wire

Rated operating voltage	
24 V	24 V DC

Cable characteristic	
K	Standard + energy chain
E	Energy chain + robot

Cable length	
...	0.2 m ... 10 m (0.2 ... 5.0 m in 0.1 m increments, 5.0 ... 10 m in 0.5 m increments)

Connection technology	
OE	Open end
M8	Cable with plug M8x1, snap-on flange
M8D	Cable with plug M8x1, rotatable thread
M12	Cable with plug M12x1, rotatable thread

Order example:

SME-8M-DS-24 V-K-2,5-OE

Proximity sensor, magnetic reed - for T-slot, insertable in the slot from above - N/O contact, 3-wire - 24 V DC - standard + energy chain - cable 2.5 m - open end

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
→ [www.festo.com/catalogue/...](#)

Enter the type code in the search field.

★ Quick ordering¹⁾

N/O contact, contacting, bipolar

Part no.	Type
Electrical connection – Cable, 3-wire	
543862	SME-8M-DS-24 V-K-2,5-OE
543863	SME-8M-DS-24 V-K-5,0-OE
Cable with plug, M8x1, rotatable thread, 3-pin	
543861	SME-8M-DS-24 V-K-0,3-M8D
Cable, 2-wire	
543872	SME-8M-ZS-24 V-K-2,5-OE

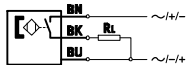
N/C contact, contacting, bipolar

Part no.	Type
Cable, 3-wire	
546799	SME-8M-DO-24 V-K-7,5-OE

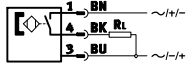
1) All products in this table are easy to select and quick to order.

Proximity sensors SME-8, for T-slot

Data sheet



E.g. N/O contact, 3-wire, with cable



E.g. N/O contact, 3-wire, with plug



Technical data				Download CAD data → www.festo.com		
Electrical connection	3-wire			2-wire		
Outlet direction of connection	In-line			In-line		
Variant	Standard			Heat resistant	Standard	
SME-8-	K	S	O	K-24-S6	K-LED-230	ZS
Measuring principle	Magnetic reed					
Switching output	Contacting, bipolar					
	–				Without LED function	
Switching element function	N/O contact	N/O contact	N/C contact	N/O contact	N/O contact	N/O contact
Operating voltage range [V DC]	12 ... 30	12 ... 30	12 ... 30	0 ... 30	3 ... 230	12 ... 27
Operating voltage range [V AC]	12 ... 30	12 ... 30	12 ... 30	0 ... 30	3 ... 230	–
Max. output current [mA]	500	500	50	500	120	80
Type of mounting	Clamped in T-slot, insertable in the slot lengthwise					
Cable length [m]	2.5	0.3	7.5	2.5	2.5	2.5
	5					
	7.5					
Length/width/height [mm]	29/7/5	29/7/5	31/7/5	29/7/5	27/7/10	31/7/5

Pin allocation to EN 60947-5-2			
Plug, 3-pin, M8x1	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	–
	4	Black	Output

Operating conditions	K	K5	K-7,5	S	O	K-24-S6	K-LED-230	ZS
Ambient temperature [°C]	–40 ... +60	–40 ... +70	–40 ... +70	–40 ... +70	–40 ... +60	–40 ... +120	–30 ... +60	–40 ... +60
Ambient temperature with flexible cable installation [°C]	–5 ... +60	–5 ... +70	–5 ... +70	–5 ... +70	–5 ... +60	–5 ... +120	–5 ... +60	–5 ... +60

Materials	SME-8	SME-8-...-S6
Housing	Epoxy resin, PC, PET, high-alloy stainless steel	
Cable sheath	TPE-U(PUR)	TPE-S

Proximity sensors > For T-slot >

Proximity sensors SME-8, for T-slot

Order code – 3-wire

SME

8

LED

24

Type		
SME	Proximity sensor, magnetic reed	
Design		
8	For T-slot, insertable in the slot lengthwise	
Switching element function		
–	N/O contact, 3-wire	
0	N/C contact, 3-wire	
Electrical connection, cable length		
K	Cable, 2.5 m (N/O contact)	
	Cable, 7.5 m (N/C contact)	
K5	Cable, 5 m	1
K-7,5	Cable, 7.5 m	1
S	Cable with plug M8x1, 0.3 m	1
Switching status indication		
LED	Yellow LED	
Rated operating voltage		
24	24 V DC	

1 Not with switching element function 0.

Order example:

SME-8-K-LED-24

Proximity sensor, magnetic reed - for T-slot, insertable in the slot lengthwise - N/O contact, 3-wire - cable 2.5 m - yellow LED - 24 V DC

Order code – 2-wire, heat resistant

SME

8

K

24

S6

Type		
SME	Proximity sensor, magnetic reed	
Design		
8	For T-slot, insertable in the slot lengthwise	
Switching element function		
–	N/O contact, 2-wire	
Electrical connection, cable length		
K	Cable, 2.5 m	
Rated operating voltage		
24	24 V DC	
Variant		
S6	Heat resistant	

Order example:

SME-8-K-24-S6

Proximity sensor, magnetic reed - for T-slot, insertable in the slot lengthwise - N/O contact, 2-wire - cable 2.5 m - 24 V DC - heat resistant

Proximity sensors SME-8, for T-slot

Order code – 2-wire, in-line connection

SME

8

LED

Type	
SME	Proximity sensor, magnetic reed
Design	
8	For T-slot, insertable in the slot lengthwise
Switching element function	
–	N/O contact, 2-wire
ZS	N/O contact, without LED function, 2-wire
Electrical connection, cable length	
K	Cable, 2.5 m
KL	Cable, 2.5 m
Switching status indication	
LED	Yellow LED
Rated operating voltage	
24	24 V DC
230	230 V AC

- 1 Not with switching element function ZS.
- 2 Only with switching element function ZS.

Order example:
SME-8-K-LED-230
Proximity sensor, magnetic reed - for T-slot, insertable in the slot lengthwise - N/O contact, 2-wire - cable 2.5 m - yellow LED - 230 V DC

Ordering – Product options

Configurable product

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

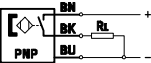
The configurator can be found under Products on the DVD or
➔ www.festo.com/catalogue/...

Enter the type code in the search field.

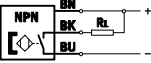
Proximity sensors > For T-slot >

Proximity sensors SMT-8M-A★ for T-slot

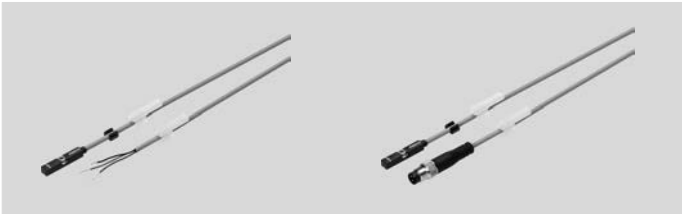
Data sheet



E.g. N/O contact, PNP, with cable



E.g. N/O contact, NPN, with cable



Technical data		Download CAD data → www.festo.com				
SMT-8M-A		PS	NS	PO	ZS	PN
Measuring principle	Magneto-resistive					
Switching output		PNP	NPN	PNP	Non-contacting, 2-wire	PNP, NPN switchable
Switching element function		N/O contact	N/O contact	N/C contact	N/O contact	N/O contact
Operating voltage range	[V DC]	5 ... 30				7 ... 30
Max. output current	[mA]	100 ¹⁾	100 ¹⁾	100 ¹⁾	80 ¹⁾	100
Max. output current in mounting kits	[mA]	100	100	100	80 ¹⁾	100
Max. switching capacity DC	[W]	2.8	2.8	2.8	1.9	2.7
Max. switching capacity DC in mounting kits	[W]	2.8 ²⁾	2.8 ²⁾	2.8 ²⁾	1.5 ²⁾	2.7
Type of mounting	Screw-clamped, insertable in the slot from above					
Cable length	[m]	0.1 ... 30				
Max. connecting cable length	[m]	30				
Length/width/height	[mm]	29/5/5				35/5/5

1) Variant ...PS/NS/PO-...-Ex2: max. output current in mounting kits 80 mA, T_a 70°C.
Variant ...ZS-...-Ex2: max. output current in mounting kits 50 mA, T_a 70°C.
2) Variant ...PS/NS/PO-...-Ex2: max. switching capacity 2.2 W.
Variant ...ZS-...-Ex2: max. switching capacity 1.2 W.

Pin allocation to EN 60947-5-2

ZS			
M8x1, 2-pin			
M8x1	Pin	Wire colour	Allocation
	1	Brown	+
	4	Blue	-

ZS			
M12x1, 2-pin			
M12x1	Pin	Wire colour	Allocation
	1	Brown	+
	4	Blue	-

Pin allocation to EN 60947-5-2

PS/NS/PO			
Plug, 3-pin			
M8x1	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	-
	4	Black	Output

PS/NS			
Plug, 3-pin			
M12x1	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	-
	4	Black	Output

PO			
Plug, 3-pin			
M12x1	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	-
	2	White	Output

Data sheet

Operating conditions		
Ambient temperature	[°C]	−40 ... +85
Ambient temperature with flexible cable installation	[°C]	−20 ... +85
ATEX		
SMT-8M-A-...-		Ex2
ATEX category for gas		II 3G
Type of ignition protection for gas		Ex nA IIC T4 X Gc
ATEX category for dust		II 3D
Type of ignition protection for dust		Ex tc IIIC T120°C X Dc IP65
Explosion-proof temperature rating		−40°C ≤ Ta ≤ +70°C
ATEX certification		For zone 2/22
CE marking (see declaration of conformity)		To EU Explosion Protection Directive (ATEX)
Materials		
Housing		PA reinforced, high-alloy stainless steel, nickel-plated brass
Cable sheath		TPE-U(PUR)

Proximity sensors > For T-slot >

Proximity sensors SMT-8M-A★ for T-slot

Order code

SMT-8M - A - - 24V - E - - - -

Type	
SMT-8M	Proximity sensor, magneto-resistive, for T-slot, insertable in the slot from above
Design	
A	Short design
Switching output	
PS	PNP, N/O contact, 3-wire
PO	PNP, N/C contact, 3-wire
NS	NPN, N/O contact, 3-wire
ZS	N/O contact, 2-wire
PNS	PNP, NPN switchable
PSO	PNP, N/C contact, N/O contact switchable
Rated operating voltage	
24 V	24 V DC
Cable characteristic	
E	Energy chain + robot
Cable length	
...	0.1 m ... 30 m (0.1 ... 5.0 m in 0.1 m increments, 5.0 ... 30 m in 0.5 m increments)
Cable designation	
-	With inscription label holder
N	Without inscription label holder
Electrical connection	
OE	Open end
M8	Cable with plug M8x1, snap-on flange
M8D	Cable with plug M8x1, rotatable thread
M12	Cable with plug M12x1, rotatable thread
EU certification	
EX2	II 3GD to EU Explosion Protection Directive (ATEX)

1 Not with switching output PNS, PSO.
Minimum cable length 0.2 m.

Order example:

SMT-8M-A-PS-24 V-E-0,3-M8D

Proximity sensor, magneto-resistive, for T-slot, insertable in the slot from above - short design - PNP, N/O contact, 3-wire - 24 V DC - energy chain + robot - cable 0.3 m - with inscription label holder - cable with plug M8x1, rotatable thread

Proximity sensors SMT-8M-A★ for T-slot

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

★ Quick ordering¹⁾

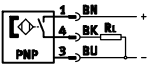
Switching output	Electrical connection			Cable length [m]	Part no.	Type
	Cable	Cable with plug, rotatable thread				
		M8x1	M12x1			
N/O contact						
PNP	–	3-pin	–	0.3	574334	SMT-8M-A-PS-24 V-E-0,3-M8D
PNP	3-wire	–	–	2.5	574335	SMT-8M-A-PS-24 V-E-2,5-OE
PNP	3-wire	–	–	5	574336	SMT-8M-A-PS-24 V-E-5,0-OE
PNP	–	–	3-pin	0.3	574337	SMT-8M-A-PS-24 V-E-0,3-M12
NPN	3-wire	–	–	2.5	574338	SMT-8M-A-NS-24 V-E-2,5-OE
PNP	–	–	3-pin	0.3	574339	SMT-8M-A-NS-24 V-E-0,3-M8D
Contactless	2-wire	–	–	5	574341	SMT-8M-A-ZS-24 V-E-5,0-OE-EX2
N/C contact						
PNP	3-wire	–	–	7.5	574340	SMT-8M-A-PO-24 V-E-7,5-OE

1) All products in this table are easy to select and quick to order.

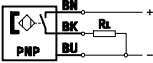
Proximity sensors > For T-slot >

Proximity sensors CRSMT-8M, for T-slot

Data sheet



E.g. N/O contact, PNP, with cable



- Suitable for use in the food industry
- Acid resistant
- Alkali resistant
- Resistant to cooling lubricants



Technical data		Download CAD data → www.festo.com
CRSMT-8M		
Measuring principle	Magneto-resistive	
Switching output	PNP	
Switching element function	N/O contact	
Operating voltage range	[V DC]	5 ... 30
Max. output current	[mA]	100
Max. switching capacity DC	[W]	2.8
Type of mounting	Screw-clamped, insertable in the slot from above	
Cable length	[m]	0.3 ... 10
Max. connecting cable length	[m]	10
Length/width/height	[mm]	29/5/5

Pin allocation to EN 60947-5-2			
M8x1, 3-pin			
N/O contact			
	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	-
	4	Black	Output
M12x1, 3-pin			
N/O contact			
	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	-
	4	Black	Output

Data sheet

Operating conditions	
Ambient temperature	[°C] -40 ... +85
Materials	
Housing	High-alloy stainless steel, PA, PP
Cable sheath	TPE-O

Proximity sensors CRSMT-8M, for T-slot

Order code

CRSMT

8M

PS

24 V

K

Type		
CRSMT	Proximity sensor, magneto-resistive, suitable for use in the food industry, resistant to acids and cooling lubricants	
Design		
8M	For T-slot, insertable in the slot from above	
Switching output		
PS	PNP, N/O contact, 3-wire	
Rated operating voltage		
24 V	24 V DC	
Cable characteristic		
K	Standard and energy chain	
Cable length		
0.3	Cable, 0.3 m	1
5.0	Cable, 5 m, open end	2
10.0	Cable, 10 m, open end	2
Connection		
OE	Open end	
M8D	M8x1, rotatable thread	
M12	M12	

- 1 Only with M8D or M12 connection.
- 2 Only with OE connection.

Order example:
CRSMT-8M-PS-24 V-K-5,0-OE
Proximity sensor, magneto-resistive, suitable for the food industry, resistant to acids and cooling lubricants - for T-slot, insertable in the slot from above - PNP, N/O contact, 3-wire - 24 V DC - standard and energy chain - cable 5 m - open end

Ordering – Product options

Configurable product

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

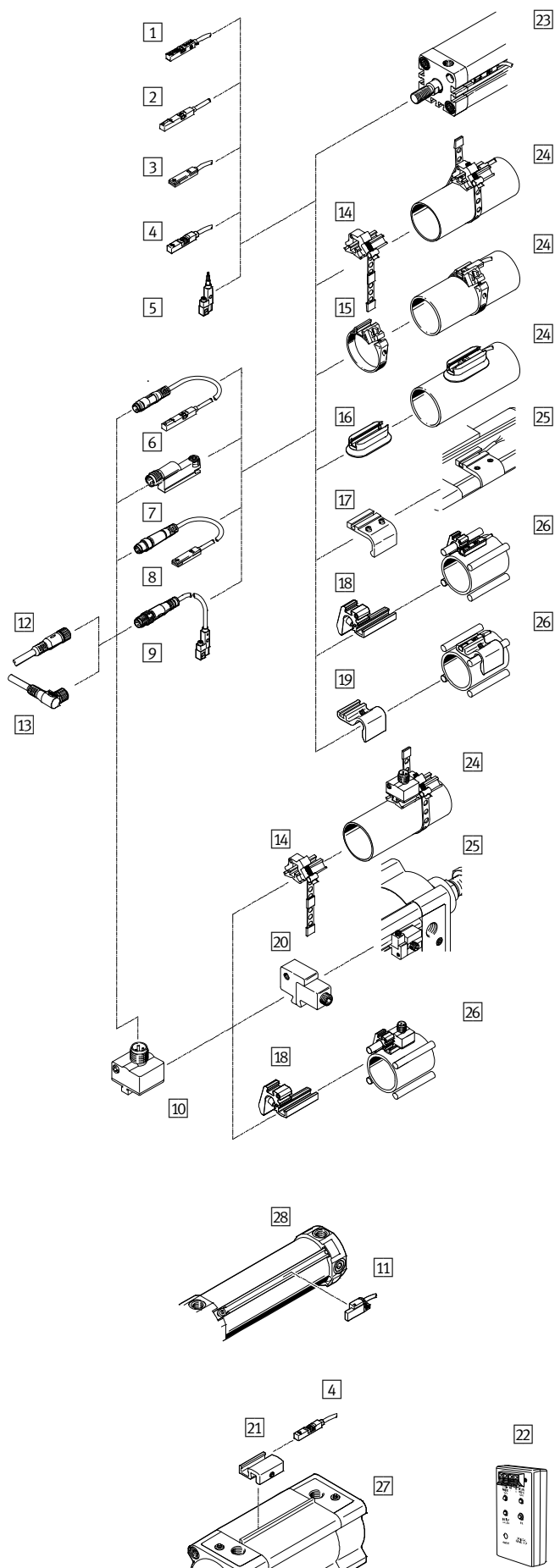
The configurator can be found under Products on the DVD or
➔ www.festo.com/catalogue/...

Enter the type code in the search field.

Proximity sensors > For T-slot >

Proximity sensors SME/SMT-8, for T-slot

Accessories



		→ Page/ online
Proximity sensor		
1	SMT-8M-A, with cable	1206
2	SME-8M-...-OE, with cable	1201
	SDBT-MS-...-EX6, with explosion protection	sdbt
3	SME-8-FM-...-K, with cable	sme
	CRSMT-8-K, with cable, corrosion resistant	crsmt
4	CRSMT-8-M, with cable	1210
5	SMT-8G-...-OE, with cable	smt
6	SME-8M-...-M, with cable and plug	1201
7	SME-8-SL, with plug	sme
	SMT-8-SL, with plug	smt
8	SME-8, with cable and plug	1203
9	SMT-8G-...-M, with cable and plug	smt
10	SME0-8E, with plug, block design	smeo
	SMT0-8E, with plug, block design	smt0
	SMTS0-8E, with plug, welding field resistant	smtso
11	SDBT-BSW, welding field resistant	sdbt
Accessories		
12	Connecting cable NEBU-M...G	1213
13	Connecting cable NEBU-M...W	1213
14	Mounting kit SMBR-8-8/100-S6, heat resistant	1213
15	Mounting kit SMBR	1213
16	Mounting kit CRSMB, corrosion resistant	1213
17	Mounting kit SMB-8-FENG	1213
18	Mounting SMBZ-8	1213
19	Sensor bracket DASP-M4	1213
20	Mounting kit SMB-8E	1213
21	Mounting kit SMB-8-C	1213
22	Sensor tester SM-TEST-1	sm-test-1
-	Positioning element SMM-8	1213
	Inscription label ASLR	1213
	Clip SMBK-8	1213
	Safety clip NEAU	neau
Drives		
23	Drives with T-slot	-
24	Round cylinders	-
25	Standards-based cylinders DSBC	-
26	Drives with tie or mounting rod	-
27	Standards-based cylinders DSBF	-
28	Hinge cylinders DFAW	-

Proximity sensors SME/SMT-8, for T-slot

Accessories – Ordering data

	Cable length [m]	Part no.	Type
12 Connecting cable, straight socket M8x1 Data sheets → Page 1543			
	2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
	5	★ 541334	NEBU-M8G3-K-5-LE3
13 Angled socket M8x1 Data sheets → Page 1543			
	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
	5	★ 541341	NEBU-M8W3-K-5-LE3
12 Straight socket M12x1 Data sheets → Page 1543			
	2.5	★ 541363	NEBU-M12G5-K-2.5-LE3
	5	★ 541364	NEBU-M12G5-K-5-LE3
13 Angled socket M12x1 Data sheets → Page 1543			
	2.5	541367	NEBU-M12W5-K-2.5-LE3
	5	541370	NEBU-M12W5-K-5-LE3

	For Ø	Part no.	Type
14 Mounting kit, max. ambient temperature 120°C			
	8 ... 100	★ 538937	SMBR-8-8/100-S6
15 Max. ambient temperature 70°C			
	8	175091	SMBR-8-8
	10	175092	SMBR-8-10
	12	★ 175093	SMBR-8-12
	16	★ 175094	SMBR-8-16
	20	★ 175095	SMBR-8-20
	25	★ 175096	SMBR-8-25
	32	175097	SMBR-8-32
	40	175098	SMBR-8-40
	50	175099	SMBR-8-50
	63	175100	SMBR-8-63

	For Ø	Part no.	Type
16 ... 21 Mounting kit			
	32 ... 100	525565	CRSMB-8-32/100
	32/40	175705	SMB-8-FENG-32/40
	50/63	175706	SMB-8-FENG-50/63
	80/100	175707	SMB-8-FENG-80/100
	32 ... 100	537806	SMBZ-8-32/100
	125 ... 320	537808	SMBZ-8-125/320
	125	1451483	DASP-M4-125-A
	160	1553813	DASP-M4-160-A
	250	1456781	DASP-M4-250-A
	320	3015256	DASP-M4-320-A
	–	178230	SMB-8E
	–	1806790	SMB-8-C

	Size	Part no.	Type	PU ¹⁾
Positioning element				
	10	547941	SMM-8	10
Inscription label				
	23x4 mm	541598	ASLR-L-423	34
Clip				
	–	534254	SMBK-8	1

1) Packaging unit quantity.

Proximity sensors > For T-slot >



For reliable cylinder position detection

- + Optimised for drives from Festo
- + Safe stop thanks to patented mounting

Proximity sensors › For C-slot ›

Proximity sensors, for C-slot

SME-10 ★
SMT-10 ★

Proximity sensors > For C-slot >

Proximity sensors, for C-slot

SME-10★ / SMT-10★



Overview, configuration and ordering

→ www.festo.com/catalogue/sme-10



Additional information, support and user documentation

→ www.festo.com/sp/sme-10



Quick ordering of basic designs

→ page 1219, 1224



Selected types in accordance with the ATEX Directive for explosive atmospheres

→ www.festo.com/catalogue/ex



- + SME-10: magnetic reed measuring principle
- + SMT-10: magneto-resistive measuring principle
- + Clamped in C-slot, insertable in the slot from above or lengthwise
- + Cable length 0.2 ... 10 m

Proximity sensors SME/SMT-10 ★ for C-slot

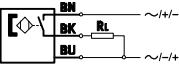
Product range overview

Measuring principle	Type	Electrical connection	Operating voltage range	Switching output	Switching element function	→ Page/ online
Magnetic reed	SME-10M	Cable – 2-wire – 3-wire Cable with plug, 2-pin Cable with plug, 3-pin – M8x1, rotatable thread – M8x1, snap-on flange – M12x1, rotatable thread	5 ... 30 V AC 5 ... 30 V DC	Contacting, bipolar	N/O contact	1218
	SME-10	Cable – 3-wire Cable with plug, 3-pin – M8x1	12 ... 27 V AC 12 ... 27 V DC	Contacting, bipolar	N/O contact	1220
Magneto-resistive	SMT-10M	Cable – 2-wire – 3-wire Cable with plug, 2-pin Cable with plug, 3-pin – M8x1, rotatable thread – M8x1, snap-on flange – M12x1, rotatable thread	10 ... 30 V DC	PNP NPN Non-contacting, 2-wire	N/O contact	1222
	SMT-10G	Cable – 3-wire Cable with plug, 3-pin – M8x1, rotatable thread	10 ... 30 V DC	PNP, NPN	N/O contact	smt-10

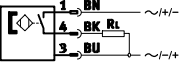
Proximity sensors > For C-slot >

Proximity sensors SME-10M ★ for C-slot

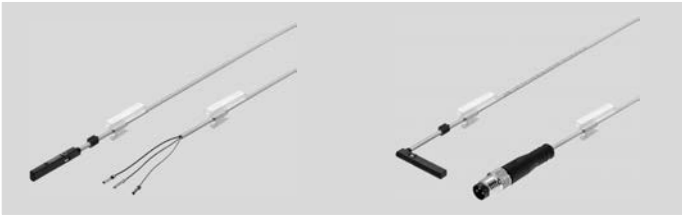
Data sheet



E.g. N/O contact, 3-wire, with cable



E.g. N/O contact, 3-wire, with plug



Technical data		Download CAD data → www.festo.com	
SME-10M-	DS	ZS	
Measuring principle	Magnetic reed		
Switching output	Contacting, bipolar		
Switching element function	N/O contact		
Operating voltage range	[V DC]	5 ... 30	
Operating voltage range	[V AC]	5 ... 30	
Max. output current	[mA]	300	100
Type of mounting	Screw-clamped, insertable in the slot from above		
Outlet direction of connection	In-line		
	Lateral		
Special features	Oil resistant		
Cable length	[m]	0.2 ... 10	
Max. connecting cable length	[m]	10	
Length/width/height	[mm]	27/3/5 (25/3/6) ¹⁾	

1) Value in brackets for lateral connection.

Pin allocation to EN 60947-5-2

M8x1							
2-pin	Pin	Wire colour	Allocation	3-pin	Pin	Wire colour	Allocation
	1	Brown	+		1	Brown	+
	4	Black	Output		3	Blue	–
					4	Black	Output

M12x1							
2-pin	Pin	Wire colour	Allocation	3-pin	Pin	Wire colour	Allocation
	1	Brown	+		1	Brown	+
	4	Black	Output		3	Blue	–
					4	Black	Output

Operating conditions

Ambient temperature	[°C]	–40 ... +70
Ambient temperature with flexible cable installation	[°C]	–20 ... +70

Materials

Housing	PA reinforced, high-alloy stainless steel
Cable sheath	TPE-U (PUR)

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

Proximity sensors SME-10M ★ for C-slot

Order code

	SME	–	10M	–		–	24 V	–	E	–		–		–		–	
Type																	
SME	Proximity sensor, magnetic reed																
Design																	
10M	For C-slot, insertable in the slot from above																
Switching output, switching element function																	
DS	N/O contact, 3-wire																
ZS	N/O contact, 2-wire																
Rated operating voltage																	
24 V	24 V DC																
Cable characteristic																	
E	Energy chain + robot																
Cable length																	
...	0.2 m ... 10 m (0.2 ... 5.0 m in 0.1 m increments, 5.0 ... 10 m in 0.5 m increments)																
Connection direction																	
L	In-line																
Q	Lateral																
Cable designation																	
–	With inscription label holder																
N	Without inscription label holder																
Connection technology																	
OE	Open end																
M8	Cable with plug M8x1, snap-on flange																
M8D	Cable with plug M8x1, rotatable thread																
M12	Cable with plug M12x1, rotatable thread																

Order example:

SME-10M-DS-24 V-E-2,5-L-OE

Proximity sensor, magnetic reed - for C-slot, insertable in the slot from above - N/O contact, 3-wire - 24 V DC - energy chain + robot - cable 2.5 m - in-line - with inscription label holder - open end

★ Quick ordering¹⁾

N/O contact, contacting, bipolar

Part no.	Type
Electrical connection – Cable, 3-wire	
551365	SME-10M-DS-24 V-E-2,5-L-OE
Cable, 2-wire with plug, rotatable thread	
551367	SME-10M-DS-24 V-E-0,3-L-M8D

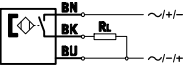
Part no.	Type
Electrical connection – Cable, 2-wire	
551369	SME-10M-ZS-24 V-E-2,5-L-OE

1) All products in this table are easy to select and quick to order.

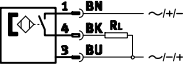
Proximity sensors > For C-slot >

Proximity sensors SME-10, for C-slot

Data sheet



N/O contact, 3-wire, with cable



N/O contact, 3-wire, with plug



Technical data		Download CAD data → www.festo.com	
SME-10-...-		K	S
Measuring principle		Magnetic reed	
Switching output		Contacting, bipolar	
Switching element function		N/O contact	
Operating voltage range	[V DC]	12 ... 27	
Operating voltage range	[V AC]	12 ... 27	
Max. output current	[mA]	100	
Type of mounting		Clamped in C-slot, insertable in the slot lengthwise	
Outlet direction of connection		In-line	
		Lateral	
Cable length	[m]	2.5	0.3
Length/width/height	[mm]	22/4/6 (19/6/9) ¹⁾	

1) Value in brackets for lateral connection.

Pin allocation to EN 60947-5-2

Plug, 3-pin			
M8x1	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	-
	4	Black	Output
	2		

Operating conditions

Ambient temperature	[°C]	-20 ... +70
Ambient temperature with flexible cable installation	[°C]	-5 ... +70

Materials	K	S
Housing	High-alloy stainless steel, PPS	High-alloy stainless steel, nickel-plated brass, PPS, TPE-U (PU)
Cable sheath	TPE-U (PUR)	

Proximity sensors SME-10, for C-slot

Order code

SME

10

LED

24

Type	
SME	Proximity sensor, magnetic reed
Design	
10	For C-slot, insertable in the slot lengthwise
Electrical connection, cable length, outlet direction of connection	
KL	Cable, 2.5 m, in-line
KQ	Cable, 2.5 m, lateral
SL	Cable with plug M8x1, 0.3 m, in-line
SQ	Cable with plug M8x1, 0.3 m, lateral
Switching status indication	
LED	Yellow LED
Rated operating voltage	
24	24 V DC

Order example:
SME-10-KL-LED-24
Proximity sensor, magnetic reed - for C-slot, insertable in the slot lengthwise - cable 2.5 m, in-line - yellow LED - 24 V DC

Ordering – Product options

Configurable product

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

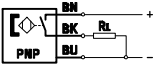
The configurator can be found under Products on the DVD or
➔ www.festo.com/catalogue/...

Enter the type code in the search field.

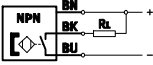
Proximity sensors > For C-slot >

Proximity sensors SMT-10M★ for C-slot

Data sheet



E.g. PNP, N/O contact, with cable



E.g. NPN, N/O contact, with cable



Technical data		Download CAD data → www.festo.com	
SMT-10M-	PS	NS	ZS
Measuring principle	Magneto-resistive		
Switching output	PNP	NPN	Non-contacting, 2-wire
Switching element function	N/O contact		
Operating voltage range [V DC]	10 ... 30		
Max. output current [mA]	100		
Type of mounting	Screw-clamped, insertable in the slot from above		
Outlet direction of connection	In-line		
	Lateral		
Cable length [m]	0.2 ... 30		
Max. connecting cable length [m]	30		
Length/width/height [mm]	23/3/5 (21/3/6) ¹⁾		

1) Value in brackets for lateral connection.

Pin allocation to EN 60947-5-2			
M8x1			
2-pin	Pin	Wire colour	Allocation
	1	Brown	+
	4	Black	Output
3-pin	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	–
	4	Black	Output

M12x1			
2-pin	Pin	Wire colour	Allocation
	1	Brown	+
	4	Black	Output
3-pin	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	–
	4	Black	Output

Operating conditions	
Ambient temperature [°C]	–40 ... +70

Materials	
Housing	High-alloy stainless steel, PA reinforced
Cable sheath	TPE-U(PUR)

Proximity sensors SMT-10M★ for C-slot

Order code

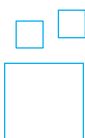
	SMT	–	10M	–		–	24 V	–	E	–		–		–		–	
Type																	
SMT	Proximity sensor, magneto-resistive																
Design																	
10M	For C-slot, insertable in the slot from above																
Switching output, switching element function																	
PS	PNP, N/O contact, 3-wire																
NS	NPN, N/O contact, 3-wire																
ZS	N/O contact, 2-wire																
Rated operating voltage																	
24 V	24 V DC																
Cable characteristic																	
E	Energy chain + robot																
Cable length																	
...	0.2 m ... 30 m (0.2 ... 5.0 m in 0.1 m increments, 5.0 ... 30 m in 0.5 m increments)																
Connection direction																	
L	In-line																
Q	Lateral																
Cable designation																	
–	With inscription label holder																
N	Without inscription label holder																
Connection technology																	
OE	Open end																
M8	Cable with plug M8x1, snap-on flange																
M8D	Cable with plug M8x1, rotatable thread																
M12	Cable with plug M12x1, rotatable thread																

Order example:

SMT-10M-PS-24V-E-2,5-L-OE

Proximity sensor, magneto-resistive - for C-slot, insertable in the slot from above - PNP, N/O contact, 3-wire - 24 V DC - energy chain + robot - cable 2.5 m - in-line - with inscription label holder - open end

Ordering – Product options

**Configurable
product****This product and all its options can
be ordered using the configurator.**The configurator can be found under
Products on the DVD or→ www.festo.com/catalogue/...

Enter the type code in the search field.

Proximity sensors > For C-slot >

Proximity sensors SMT-10M★ for C-slot

★ Quick ordering¹⁾

N/O contact

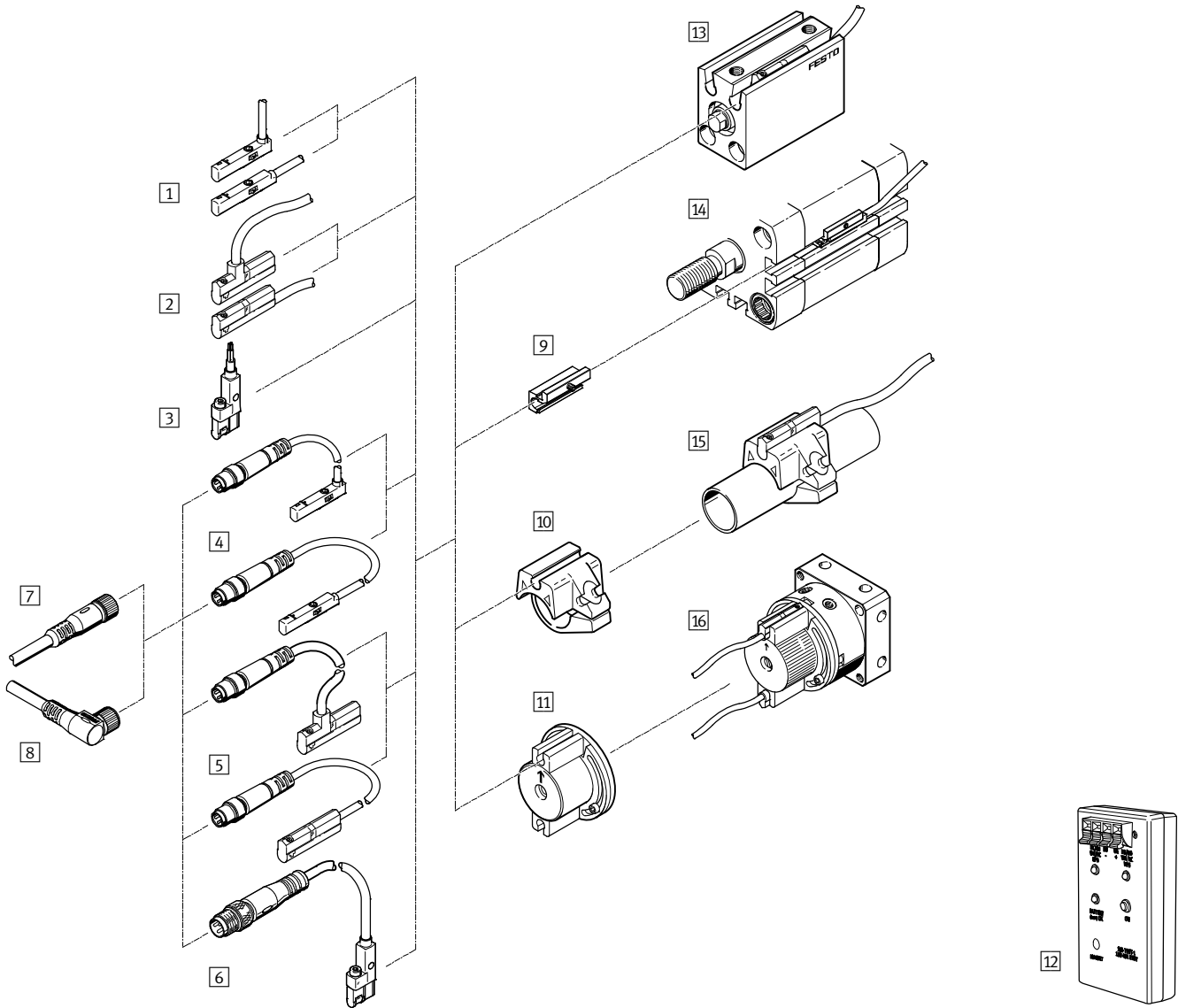
Part no.	Type
Electrical connection – Cable, 3-wire, PNP	
551373	SMT-10M-PS-24 V-E-2,5-L-OE
Cable with plug, M8x1, rotatable thread, 3-pin, PNP	
551375	SMT-10M-PS-24 V-E-0,3-L-M8D
Electrical connection – Cable, 3-wire, NPN	
551377	SMT-10M-NS-24 V-E-2,5-L-OE
Cable with plug, M8x1, rotatable thread, 3-pin, NPN	
551379	SMT-10M-NS-24 V-E-0,3-L-M8D

Part no.	Type
Cable, 2-wire, non-contacting	
551382	SMT-10M-ZS-24 V-E-2,5-L-OE

1) All products in this table are easy to select and quick to order.

Proximity sensors SME/SMT-10, for C-slot

Accessories



		→ Page/ online
Proximity sensor		
1	SME-10M-...-OE, with cable	1218
	SMT-10M-...-OE, with cable	1222
2	SME-10-...-K, with cable	1220
3	SMT-10G-...-OE, with cable	smt-10
4	SME-10M-...-M..., with cable with plug	1218
	SMT-10M-...-M..., with cable with plug	1222
5	SME-10-...-S..., with cable with plug	1220
6	SMT-10G-...-M..., with cable with plug	smt-10

		→ Page/ online
Accessories		
7	Connecting cable NEBU-M8G3	1226
8	Connecting cable NEBU-M8W3	1226
9	Mounting SMBN-10	1226
10	Mounting kit SMBR-10	1226
11	Mounting kit WSM-...-SME-10	1226
12	Sensor tester SM-TEST-1	sm-test-1
-	Positioning element SMM-10	1226
	Inscription label ASLR	1226
	Safety clip NEAU	neau
	Clip SMBK-8	smbk
Drives		
13	Drives with C-slot	-
14	Drives with T-slot	
15	Round cylinders	
16	Swivel module DSM	

Proximity sensors > For C-slot >

Proximity sensors SME/SMT-10, for C-slot

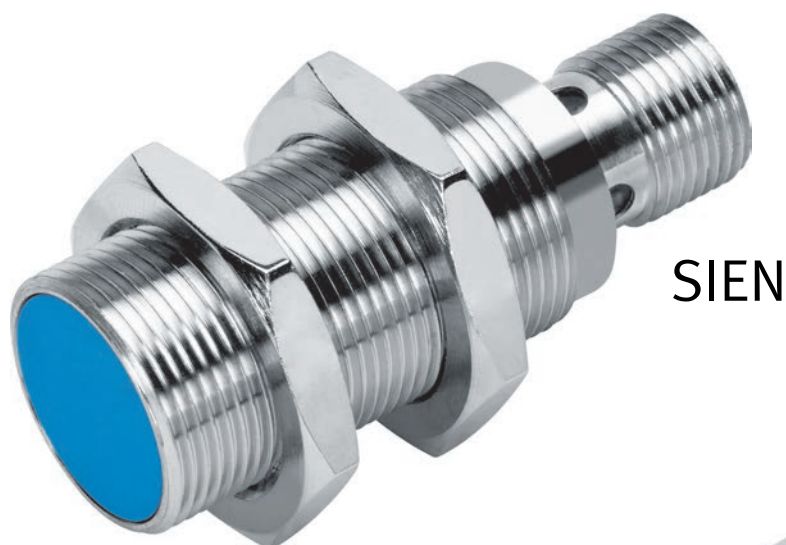
Accessories – Ordering data

	Cable length [m]		Part no.	Type
7 Connecting cable, straight socket M8x1 Data sheets → Page 1543				
	2.5	★	541333	NEBU-M8G3-K-2.5-LE3
	5	★	541334	NEBU-M8G3-K-5-LE3
8 Angled socket M8x1				
	2.5	★	541338	NEBU-M8W3-K-2.5-LE3
	5	★	541341	NEBU-M8W3-K-5-LE3

	For Ø		Part no.	Type
9 Mounting				
	125 ... 320		537809	SMBN-10
10 Mounting kit for round cylinders				
	8		175101	SMBR-10-8
	10		173227	SMBR-10-10
	12		175102	SMBR-10-12
	16		173228	SMBR-10-16
	20		175103	SMBR-10-20
	25		175104	SMBR-10-25
	32		175105	SMBR-10-32
	40		175106	SMBR-10-40
	50		175107	SMBR-10-50
	63		175108	SMBR-10-63
11 For swivel module				
	6		173205	WSM-6-SME-10
	8		173206	WSM-8-SME-10
	10		173207	WSM-10-SME-10

	Size		Part no.	Type	PU ¹⁾
Positioning element					
	10		547942	SMM-10	10
Inscription label					
	23x4 mm		541598	ASLR-L-423	34

1) Packaging unit quantity.



SIEN



SIES-8M

Detect metal objects
in your system safely
and reliably

- + Wide range of designs
- + Optional variants and materials depending on the application

Inductive sensors ›

Proximity sensors, inductive

SIEN ★
SIES-8M

Inductive sensors >

Proximity sensors, inductive

SIEN★ / SIES-8M



Overview, configuration and ordering

→ www.festo.com/catalogue/sie



Additional information, support and user documentation

→ www.festo.com/sp/sie



Quick ordering of basic designs

→ page 1233



SIEN



SIES-8M

- + With standard switching distance
- + Round design, metric thread, for T-slot
- + Flush or non-flush mounting
- + With switching status indication
- + Design with metal housing
- + Design with polyamide housing

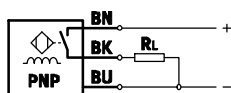
Product range overview

Version	Type	Operating voltage	Switching output/ analogue output	Type of mounting	Size	→ Page/ online
Reduction factor, material-specific						
Standard switching distance	SIEN Basic design	10 ... 30 V DC 15 ... 34 V DC	PNP NPN	Flush Not flush	Ø 4 mm, M5, Ø 6.5 mm, M8, M12, M18, M30	1230
	SIEN-...-PA Polyamide housing	10 ... 30 V DC	PNP NPN	Flush Not flush	M12, M18, M30	1231
	SIED Basic design	20 ... 265 V AC 20 ... 320 V DC	Non-contacting, 2-wire	Flush Not flush	M12, M18, M30	sied
	SIED-...-PA Polyamide housing	20 ... 250 V AC 10 ... 300 V DC	Non-contacting, 2-wire	Flush Not flush	M12, M18, M30	sied
	SIES Special design	10 ... 30 V DC	PNP NPN	Flush	5x5x25 mm ... 40x40x120 mm	sies
	Increased sensing distance					
Increased sensing distance	SIEH Basic design	10 ... 30 V DC 15 ... 34 V DC	PNP NPN	Flush	Ø 3 mm, M12, M18	sieh
	SIEH-...-CR Stainless steel housing	10 ... 30 V DC	PNP NPN	Flush	M12, M18	sieh
Analogue output	SIEA	15 ... 30 V DC	0 ... 10 V and 4 ... 20 mA	Flush	M8, M12, M18, M30	siea
Reduction factor 1 for all metals, welding field resistant						
Increased sensing distance	SIEF Basic design	10 ... 65 V DC	PNP NPN	Flush Partially flush	M8, M12, M18, M30, 40x40x65 mm	sief
	SIEF-...-WA Housing resistant to welding spatter	10 ... 30 V DC	PNP NPN	Flush Partially flush	M12, M18, M30	sief

Sensors > Inductive sensors >

Proximity sensors SIEN ★ inductive

Data sheet – With standard switching distance



E.g. N/O contact, PNP, with cable



Technical data			Download CAD data → www.festo.com						
Size			4 mm	6.5 mm	M5	M8	M12	M18	M30
Rated operating distance	Flush	[mm]	0.8	1.5	0.8	1.5	2	5	10
	Not flush	[mm]	–	–	–	2.5	4	8	15
Switching output			PNP						
			NPN						
Switching element function			N/O contact						
			N/C contact						
Type of mounting			Flush						
			–				Not flush		
Type of mounting			Clamped			Via lock nut			
Electrical connection			Cable, 3-wire						
			Plug connector M8x1, 3-pin				Plug connector M12x1, 3-pin		
Operating voltage range	[V DC]		10 ... 30						
Max. output current	[mA]		200						
Ø/length	[mm]		8/42 (4/25) ¹⁾	8/45 (6.5/35) ¹⁾	8/42 (5/25) ¹⁾	8/45 (8/35) ¹⁾	12/45 (12/35) ¹⁾	18/48.5 (18/35) ¹⁾	30/48.5 (30/35) ¹⁾
Max. connecting cable length	[m]		2.5						

1) Value in brackets for electrical connection via cable.

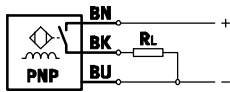
Pin allocation to EN 60947-5-2

M8x1, 3-pin				M12x1, 3-pin				M12x1, 3-pin			
N/O contact and N/C contact				N/O contact				N/C contact			
	Pin	Wire colour	Allocation		Pin	Wire colour	Allocation		Pin	Wire colour	Allocation
	1	Brown	+		1	Brown	+		1	Brown	+
	3	Blue	–		3	Blue	–		3	Blue	–
	4	Black	Output		4	Black	Output		2	White	Output

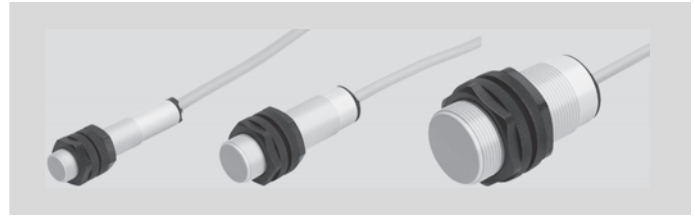
Operating conditions			4 mm	6.5 mm	M5	M8	M12	M18	M30
Ambient temperature	[°C]		–25 ... +70						
Ambient temperature with flexible cable installation	[°C]		–	–5 ... +70					

Materials							
	4 mm	6.5 mm	M5	M8	M12	M18	M30
Housing	High-alloy stainless steel				Nickel-plated brass		Chrome-plated brass
	–	PA			PBTP		
Cable sheath	TPE-U (PUR)						

Data sheet – With standard switching distance, polyamide housing



E.g. N/O contact, PNP, with cable



Technical data			Download CAD data → www.festo.com		
Size			M12	M18	M30
Rated operating distance	Flush	[mm]	2	5	10
	Not flush	[mm]	4	8	15
Switching output			PNP		
			NPN		
Switching element function			N/O contact		
Type of mounting			Flush		
			Not flush		
Type of mounting			Via lock nut		
Electrical connection			Cable, 3-wire		
Operating voltage range		[V DC]	10 ... 30		
Max. output current		[mA]	200		
Ø/length		[mm]	12/60	18/60	30/60
Max. connecting cable length		[m]	2.5		

Operating conditions		
Ambient temperature	[°C]	–25 ... +70
Ambient temperature with flexible cable installation	[°C]	0 ... +70

Materials	
Housing	PA reinforced
Cable sheath	PVC

Sensors > Inductive sensors >

Proximity sensors SIEN/SIEN-...-PA ★ inductive

Order code – With standard switching distance

		SIEN	–		–		–		–		–	L	–	
Type														
SIEN	Proximity sensor with standard switching distance													
Design/size														
4, 6.5	Round O.D. 4 or 6.5 mm													
M5, M8, M12, M18, M30	Metric thread M5, M8, M12, M18, M30													
Type of mounting														
B	Flush													
NB	Not flush 1													
Switching output														
P	PNP													
N	NPN													
Switching element function														
S	N/O contact													
O	N/C contact													
Electrical connection														
K	Cable													
S	Plug													
Display														
L	Switching status													
Version														
–	Basic design													
PA	Polyamide housing 2													

- 1 Only with design/size M8 ... M30,
- 2 Only with design/size M12 ... M30, and switching element function S, and electrical connection K.

Order example:

SIEN-M5B-PS-K-L

Proximity sensor with standard switching distance - metric thread M5 - flush fitting - switching output PNP - switching element function N/O contact - electrical cable connection - switching status display - basic design

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

★ Quick ordering¹⁾

Size	Electrical connection	Part no.	Type
	Cable	150368	SIEN-M5B-NS-K-L
		150370	SIEN-M5B-PS-K-L
	Plug	150369	SIEN-M5B-NS-S-L
		150371	SIEN-M5B-PS-S-L

Size	Electrical connection	Part no.	Type
	Cable	150384	SIEN-M8B-NS-K-L
		150386	SIEN-M8B-PS-K-L
	Plug	150385	SIEN-M8B-NS-S-L
		150387	SIEN-M8B-PS-S-L

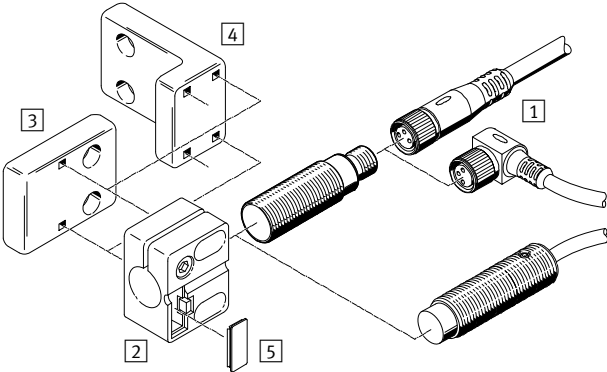
1) All products in this table are easy to select and quick to order.

Sensors > Inductive sensors >

Proximity sensors SIE ★ inductive

Accessories

SIE



		→ Page/online
1	Connecting cable NEBU	1234
2	Sensor bracket SIEZ-...B	1234
3	Sensor bracket SIEZ-UV	1234

		→ Page/online
4	Sensor bracket SIEZ-UH	1234
5	Inscription label SIEZ-LB	1234

Accessories – Ordering data

	Cable length [m]		Part no.	Type
1 Connecting cable, straight socket Data sheets → Page 1543				
	2.5	★	541333	NEBU-M8G3-K-2.5-LE3
	5	★	541334	NEBU-M8G3-K-5-LE3
	2.5	★	541363	NEBU-M12G5-K-2.5-LE3
	5	★	541364	NEBU-M12G5-K-5-LE3
	2.5	★	550326	NEBU-M12G5-K-2.5-LE4 ¹⁾
	5	★	541328	NEBU-M12G5-K-5-LE4 ¹⁾
Angled socket				
	2.5	★	541338	NEBU-M8W3-K-2.5-LE3
	5	★	541341	NEBU-M8W3-K-5-LE3
	2.5	★	541367	NEBU-M12W5-K-2.5-LE3
	5	★	541370	NEBU-M12W5-K-5-LE3
	2.5	★	550325	NEBU-M12W5-K-2.5-LE4 ¹⁾
	5	★	541329	NEBU-M12W5-K-5-LE4 ¹⁾

1) For connecting proximity sensor SIE...-M12/M18/M30 in N/C contact version with plug.

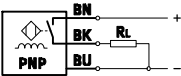
	For design	Part no.	Type
2 Sensor bracket, with stop for flush fitting			
	M8	538346	SIEZ-B-8
	M12	538348	SIEZ-B-12
	M18	538350	SIEZ-B-18
	M30	538352	SIEZ-B-30
3 Without stop			
	4	538343	SIEZ-NB-4
	6.5	538344	SIEZ-NB-6,5
	M8	538345	SIEZ-NB-8
	M12	538347	SIEZ-NB-12
	M18	538349	SIEZ-NB-18
	M30	538351	SIEZ-NB-30
	M12, M18	538355	SIEZ-UV
4 Without stop			
	M12, M18	538354	SIEZ-UH
5 Inscription label			
	M12 ... M30	538353	SIEZ-LB

Proximity sensors SIES-8M, inductive for T-slot

Product range overview

Version	Type code	Operating voltage	Switching output	Design type
Standard switching distance	SIES	10 ... 30 V DC	PNP	For T-slot
	Special design		NPN	

Data sheet



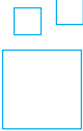
E.g. N/O, PNP, with cable

Technical data			Download CAD data → www.festo.com
Rated operating distance Sn	[mm]	1.5	
Switching output		PNP or NPN	
Switching element function		N/O or N/C	
Type of mounting		Screw-clamped, insertable from above, flush with T-slot	
Electrical connection		Cable, 3-wire	
		Cable with plug M8x1, 3-pin, rotatable thread	
Operating voltage range	[V DC]	10 ... 30	
Max. output current	[mA]	150	
Length/width/height	[mm]	5/5/32	

Operating conditions		
Ambient temperature	[°C]	−25 ... +70
Ambient temperature with flexible cable installation	[°C]	−5 ... +70

Materials	SIES-8M-...-OE	SIES-8M-...-M8D
Housing	PA, PUR, high-alloy stainless steel	PA, PUR, nickel-plated brass, high-alloy stainless steel
Cable sheath	TPE-U (PU)	

Ordering – Product options



Configurable product

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

The configurator can be found under Products on the DVD or → www.festo.com/catalogue/...

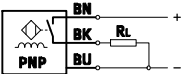
Enter the type code in the search field.

Data sheet

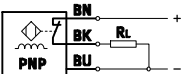
Pin allocation

Cable

PNP, N/O



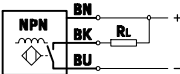
PNP, N/C



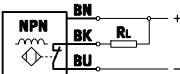
Wire colours

BN = Brown

NPN, N/O



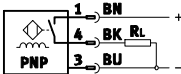
NPN, N/C



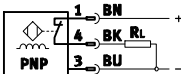
BK = Black

Plug

PNP, N/O

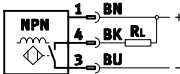


PNP, N/C

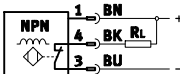


BU = Blue

NPN, N/O



NPN, N/C



Sensors > Inductive sensors >

Proximity sensors SIES-8M, inductive for T-slot

Order code – Special design

		SIES	S	–	8M	–		–	24 V	–	K	–		–	
Type code															
SIE	Proximity sensor, inductive														
Design															
S	Special design														
Design type															
8M	For T-slot														
Switching output															
P	PNP														
N	NPN														
Switching element function															
S	N/O contact														
O	N/C contact														
Rated operating voltage															
24 V	24 V DC														
Cable property															
K	Standard + energy chain														
Cable length															
0.3	0.3 m	2													
2.5	2.5 m	2													
5	5 m	2													
7.5	7.5 m	1													
10	10 m	2													
Electrical connection															
OE	Cable, 3-wire, open end														
M8D	Cable with plug M8x1, 3-pin, rotatable thread														

- 1 Only with electrical connection OE
- 2 Only with electrical connection M8D

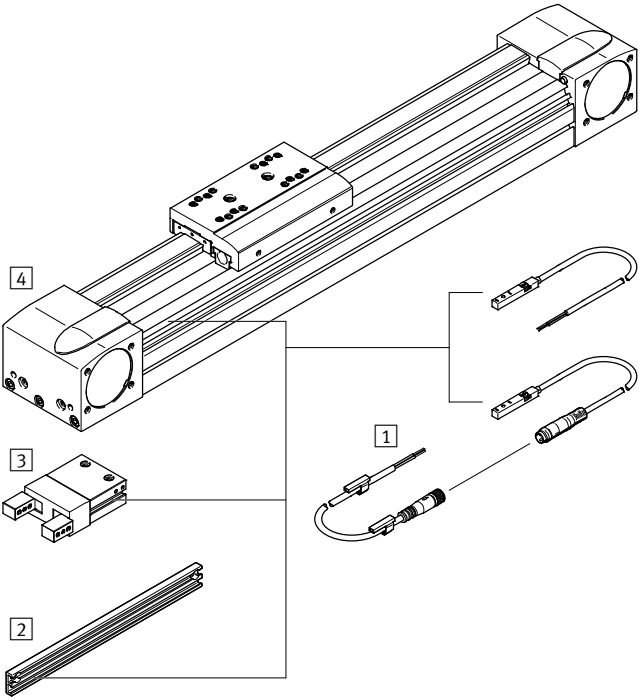
Order example:

SIES-8M-PS-24 V-K-0,3-M8D

Sensor, special design for T-slot - switching output PNP - switching element function N/O - rated operating voltage 24 V DC - cable characteristic standard + energy chain - cable length 0.3 m - cable with plug M8x1, 3-pin, rotatable thread

Proximity sensors SIES-8M, inductive for T-slot

Accessories



		→ Page/online
1	Connecting cable NEBU-M8...3	1237
2	Sensor bracket SIEZ-8M	1237
3	Gripper with T-slot, e.g. parallel gripper DHPS	gripper
4	Electric axes, e.g. toothed belt axis EGC-...-TB	egc egsk egsp
–	Slot cover	1237

Accessories – Ordering data

	Cable length [m]	Part no.	Type code
1 Connecting cable, straight socket Data sheets → Page 1543			
	2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
	5	★ 541334	NEBU-M8G3-K-5-LE3
	10	★ 541332	NEBU-M8G3-K-10-LE3
Angled socket			
	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
	5	★ 541341	NEBU-M8W3-K-5-LE3
	10	★ 541335	NEBU-M8W3-K-10-LE3

	Length [m]	Part no.	Type code
2 Sensor bracket			
	0.2	551406	SIEZ-8M-200
	0.4	551407	SIEZ-8M-400
Slot cover for T-slot			
	2x 0.5	563360	ABP-5-S1



Innovative sensing for semi-rotary drives

- + Quick and easy installation
- + Encapsulated design for reliable operation
- + Fast adjustment with just a press of a button

Position sensors ›

Position sensors

SRBS ★

Position sensors >

Position sensors

SRBS



Overview, configuration and ordering

→ www.festo.com/catalogue/srbs



Additional information, support and user documentation

→ www.festo.com/sp/srbs



Quick ordering of basic designs

→ page 1243

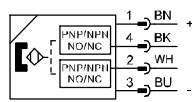


- + Switching output 2x PNP or 2x NPN (programmable)
- + Sensing range 0 ... 270 °
- + Cable length 0.3 m
- + Electrical connection, 4-pin, M8x1 plug
- + Design for semi-rotary drives DSM and DRVS

Product range overview

Version	Type	Suitable for rotary drives	Special features	Sensing range [deg]	Switching output	→ Page/online
Position sensor	SRBS-Q12-6-E270-EP-1-S-M8	DSM 6, DRVS 6	Oil resistant	> 270	2x PNP or 2x NPN Switchable	1241
	SRBS-Q12-8-E270-EP-1-S-M8	DSM 8, DRVS 8				
	SRBS-Q1-10-E270-EP-1-S-M8	DSM 10				
	SRBS-Q12-12-E270-EP-1-S-M8	DRVS 12				
	SRBS-Q12-16-E270-EP-1-S-M8	DRVS 16				
	SRBS-Q12-25-E270-EP-1-S-M8	DRVS 25				
	SRBS-Q12-32-E270-EP-1-S-M8	DRVS 32				
	SRBS-Q12-40-E270-EP-1-S-M8	DRVS 40				

Data sheet – With standard switching distance



Technical data		Download CAD data → www.festo.com
Size		
Design		Round
Type of mounting		Screw-clamped
Mounting position		Any
Special features		Oil resistant
Ø/length	[mm]	29.4 ... 98.3/25.4 ... 40.4
Input signal/measuring element		
Measuring principle		Magnetic Hall
Measured variable		Rotation angle
Sensing range	[deg]	> 270
Ambient temperature	[°C]	−20 ... +70
Ambient temperature with flexible cable installation	[°C]	−20 ... +70
Electronic components		
Operating voltage range	[V DC]	10 ... 30
Rated operating voltage	[V DC]	24
Switch-on time	[ms]	< 4
Switch-off time	[ms]	< 4
Switching output		2 x PNP or 2 x NPN, switchable
Switching element function		N/C or N/O contact, switchable
Electromechanical components		
Electrical connection		4-pin, cable with plug, rotatable thread M8
Cable length	[m]	0.3
Materials		
Housing		Nickel-plated brass, PA reinforced, polyester
Union nut		Nickel-plated brass
Cable sheath, grey		TPE-U(PUR)
Foil		Polyester
Pin contacts		Gold-plated copper alloy

Position sensors SRBS★

Order code – With standard switching distance

SRBS

–

–

–

E

–

270

–

EP

–

1

–

S

–

M8

Type	
SRBS	Position sensor

Allocation	
Q1	Version Q1 1
Q12	Version Q12

Size	
6	6
8	8
10	10
12	12
16	16
25	25
32	32
40	40
63	63

Display type	
E	LED

Measuring range	
270	0 ... 270

Sensor principle	
EP	Non-contacting, programmable switching function

Nominal operating voltage	
1	24 V DC

Electrical output	
S	PNP or NPN

Electrical connection	
M8	M8 plug

1

 Version Q1 only with size 10

Order example:

SRBS-Q12-6-E270-EP-1-S-M8

Position sensor - version Q12 - size 6 - display type - measuring range - sensor principle - nominal operating voltage - electrical output - electrical connection

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or

[www.festo.com/catalogue/...](#)

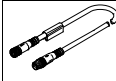
Enter the type code in the search field.

★ Quick ordering¹⁾

	For rotary drives	Part no.	Type		For rotary drives	Part no.	Type
	DSM 6, DRVS 6	2619969	SRBS-Q12-6-E270-EP-1-S-M8		DRVS 16	2393547	SRBS-Q12-16-E270-EP-1-S-M8
	DSM 8, DRVS 8	2619972	SRBS-Q12-8-E270-EP-1-S-M8		DRVS 25	2393548	SRBS-Q12-25-E270-EP-1-S-M8
	DSM 10	2412001	SRBS-Q1-10-E270-EP-1-S-M8		DRVS-32	2393549	SRBS-Q12-32-E270-EP-1-S-M8
	DRVS 12	2393546	SRBS-Q12-12-E270-EP-1-S-M8		DRVS 40	2393550	SRBS-Q12-40-E270-EP-1-S-M8

1) All products in this table are easy to select and quick to order.

Accessories – Ordering data

	Cable length [m]	Part no.	Type	
Connecting cable, open cable end				Data sheets → Page 1543
	2.5	★ 541342	NEBU-M8G4-K-2.5-LE4	
	5	★ 541343	NEBU-M8G4-K-5-LE4	
Connecting cable, plug connector, M8				Data sheets → Page 1543
	2.5	★ 554035	NEBU-M8G4-K-2.5-M8G4	



For compact and simple pressure monitoring

- + Quick and easy parameterisation at the touch of a button thanks to teach-in
- + Reliable operation with contactless sensor technology

Pressure and vacuum sensors ›
Pressure sensors

SDE5 ★

Pressure and vacuum sensors >

Pressure sensors

SDE5★



Overview, configuration and ordering

→ www.festo.com/catalogue/sde5



Additional information, support and user documentation

→ www.festo.com/sp/sde5



Quick ordering of basic designs

→ page 1250



- + PNP, NPN
- + Pressure switches
- + Vacuum switches
- + Switching status indicated by an LED visible from all sides
- + Pneumatic push-in connector
- + Can be freely parameterised
- + Adjustable switching point

Product range overview

Method of measurement	Pressure measuring range [bar]	Switching element function	Switching function	Pneumatic connection	Electrical output	Electrical connection
Piezoresistive	-1 ... 0 -1 ... 1 0 ... 2 0 ... 6 0 ... 10	N/O contact, N/C contact, switchable	Threshold value, window comparator	QS-4 QS-6 QS-1/4 QS-5/32	Switching output PNP, switching output NPN, analogue output	Plug M8x1, 3-pin; cable, 3-wire

Product options

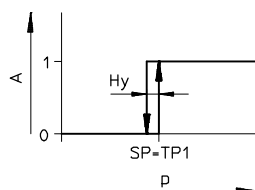
- Threshold value with fixed hysteresis
- Threshold value with variable hysteresis
- Window comparator with fixed hysteresis
- Connecting cable
- Teach-in points permanently set

Switching functions

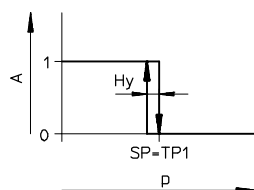
Operating mode 0

Threshold value with fixed hysteresis, 1 teach-in pressure

N/O switching element



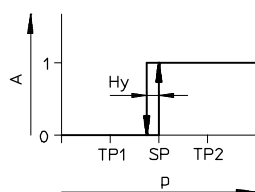
N/C switching element



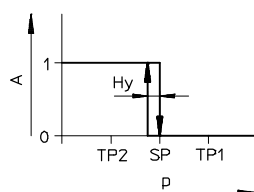
Operating mode 1

Threshold value with fixed hysteresis, 2 teach-in pressures

N/O switching element



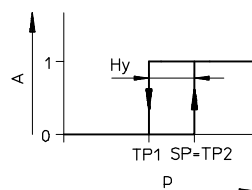
N/C switching element



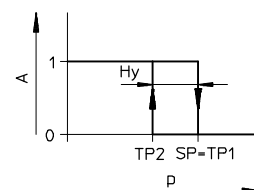
Operating mode 2

Threshold value with variable hysteresis, 2 teach-in pressures

N/O switching element



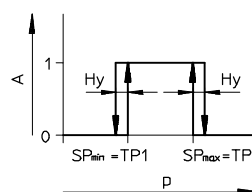
N/C switching element



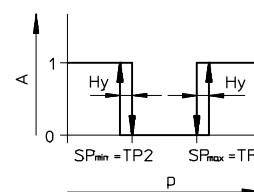
Operating mode 3

Window comparator with fixed hysteresis, 2 teach-in pressures

N/O switching element



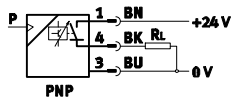
N/C switching element



- A Binary output signal
p Pressure
SP Switching point
TP Teach-in pressure
Hy Hysteresis

Pressure sensors SDE5 ★

Data sheet



E.g. N/O contact, PNP, with plug



Technical data		Download CAD data → www.festo.com	
Electrical connection		Plug M8x1, 3-pin	Cable
Pneumatic connection		QS-4	
		QS-6	
		QS-1/4	
Operating voltage range	[V DC]	15 ... 30	
Max. output current	[mA]	100	
Switching output		PNP	
		NPN	
Switching function		Freely programmable (switching/teach-in function, N/O contact, N/C contact)	
		Threshold value with fixed hysteresis	
		Threshold value with variable hysteresis	
		Window comparator with fixed hysteresis	
Switching element function		N/C contact	
		N/O contact	
		Switchable	
Output characteristic	[V]	0 ... 10	
Length/width/height	[mm]	56/16/25	45/16/25
Operating conditions			
SDE5-		V1	D10
Pressure measuring range	[bar]	−1 ... 0	0 ... +10
Threshold value setting range	[%]	0 ... 100	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Ambient temperature	[°C]	0 ... +50	
Temperature of medium	[°C]	0 ... +50	
Materials			
Housing	PA, POM		

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

Order code

SDE5

Sensor function	
SDE5	Pressure sensor

Pressure measuring range	
V1	–1 ... 0 bar
D10	0 ... 10 bar

Supply port	
–	Relative pressure
Z	Differential pressure

Output function	
FP	Freely programmable, N/O contact, N/C contact
0	Threshold value with fixed hysteresis, 1 teach-in pressure, N/O contact
C	Threshold value with fixed hysteresis, 1 teach-in pressure, N/C contact
O1	Threshold value with fixed hysteresis, 2 teach-in pressures, N/O contact
O2	Threshold value with variable hysteresis, 2 teach-in pressures, N/O contact
O3	Window comparator with fixed hysteresis, 2 teach-in pressures, N/O contact
C3	Window comparator with fixed hysteresis, 2 teach-in pressures, N/C contact
NF	No binary switching function (analogue output)

Pneumatic connection	
Push-in connector at both ends	
Q4	For tubing O.D. 4 mm
Q6	For tubing O.D. 6 mm
Push-in connector at one end	
Q4E	For tubing O.D. 4 mm
Q6E	For tubing O.D. 6 mm
T14E	For tubing O.D. 1/4

Electrical output	
P	1 switching output PNP
N	1 switching output NPN
V	1 analogue output 0 ... 10 V

Electrical connection	
K	Cable, 2.5 m
M8	Plug M8, 3 pin

Electrical accessories	
–	Without electrical accessories
G	Connecting cable, straight socket, 2.5 m

- 1

Not in combination with supply port Z.
- 2

Not in combination with output function NF.
- 3

Only in combination with output function NF.
- 4

Only in combination with M8.

Order example:
SDE5-D10Z-FP-Q6-P-M8
Pressure sensor - 0 ... 10 bar - differential pressure - freely programmable N/O contact, N/C contact - for tubing O.D. 6 mm - 1 switching output PNP - plug M8 - 3-pin

Pressure sensors SDE5

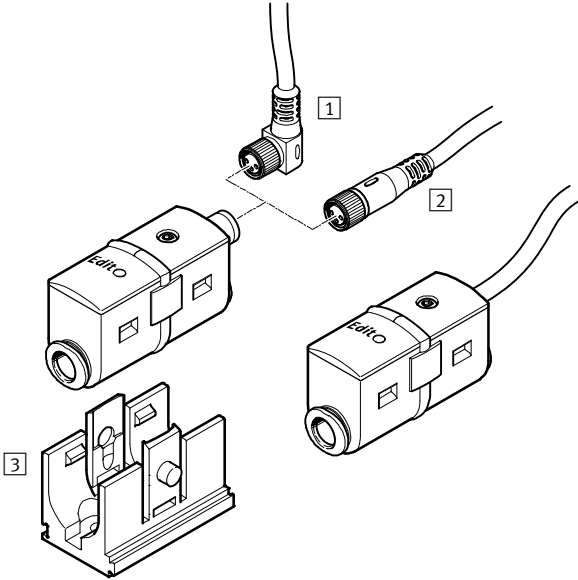
★ Quick ordering¹⁾

Pressure measuring range [bar]	Electrical output	Part no.	Type
Freely programmable (switching/teach-in function, N/O contact, N/C contact)			
0 ... -1	Plug M8x1, 3-pin	542887	SDE5-V1-FP-Q6-P-M8
0 ... +10	Plug M8x1, 3-pin	542900	SDE5-D10-FP-Q4E-P-M8
		542897	SDE5-D10-FP-Q6E-P-M8
		542898	SDE5-D10-FP-Q6-P-M8
	Cable, 3-wire	542901	SDE5-D10-FP-Q4E-P-K
		542899	SDE5-D10-FP-Q6-P-K
Threshold value with fixed hysteresis, 1 teach-in pressure, N/O contact			
0 ... -1	Plug M8x1, 3-pin	527460	SDE5-V1-O-Q4E-P-M8
		527461	SDE5-V1-O-Q6E-P-M8
		527457	SDE5-V1-O-Q4-P-M8
		527458	SDE5-V1-O-Q6-P-M8
0 ... +2	Cable, 3-wire	542888	SDE5-D2-O-Q6E-P-K
0 ... +10	Plug M8x1, 3-pin	527466	SDE5-D10-O-Q4E-P-M8
		527467	SDE5-D10-O-Q6E-P-M8
		527463	SDE5-D10-O-Q4-P-M8
		527464	SDE5-D10-O-Q6-P-M8
	Cable, 3-wire	542890	SDE5-D10-O-Q6E-P-K
N/C contact			
0 ... +10	Plug M8x1, 3-pin	542889	SDE5-D10-C-Q4E-P-M8
		542894	SDE5-D10-C-Q6E-P-M8
	Cable, 3-wire	542895	SDE5-D10-C-Q6E-P-K

Pressure measuring range [bar]	Electrical output	Part no.	Type
Threshold value with fixed hysteresis, 2 teach-in pressures with mean value calculation, N/O contact			
0 ... -1	Plug M8x1, 3-pin	542886	SDE5-V1-01-Q6-P-M8
Threshold value with variable hysteresis, 2 teach-in pressures, N/O contact			
0 ... +10	Plug M8x1, 3-pin	542891	SDE5-D10-02-Q6E-P-M8
		542892	SDE5-D10-02-Q6-P-M8
Window comparator with fixed hysteresis, 2 teach-in pressures, N/O contact			
0 ... +10	Cable, 3-wire	542893	SDE5-D10-03-Q6E-P-K
N/C contact			
0 ... +10	Cable, 3-wire	542896	SDE5-D10-C3-Q6E-P-K

1) All products in this table are easy to select and quick to order.

Accessories and ordering data



	→ Page/ online
1 Connecting cable NEBU-M8W3, angled socket	1250
2 Connecting cable NEBU-M8G3, straight socket	1250
3 Wall bracket (included in the scope of delivery)	–

	Cable length [m]	Part no.	Type
1 Connecting cable, angled socket M8x1			
Data sheets → Page 1543			
	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
	5	★ 541341	NEBU-M8W3-K-5-LE3
	10	★ 541335	NEBU-M8W3-K-10-LE3
2 Straight socket M8x1			
Data sheets → Page 1543			
	2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
	5	★ 541334	NEBU-M8G3-K-5-LE3
	10	★ 541332	NEBU-M8G3-K-10-LE3



Can be used universally

- + For network monitoring, regulator monitoring, leak test and object detection
- + Relative method of measurement, based on a piezoresistive measuring cell
- + Serial communication integrated using IO-Link® 1.1

Pressure and vacuum sensors ›

Pressure sensors

SPAN ★

Pressure and vacuum sensors >

Pressure sensors

SPAN



Overview, configuration and ordering

→ www.festo.com/catalogue/span



Additional information, support and user documentation

→ www.festo.com/sp/span



Quick ordering of basic designs

→ page 1256



- + For monitoring compressed air and non-corrosive gases
- + Compact design
- + High-contrast display with colour change
- + Data exchange and parameterisation using IO-Link®

Product range overview

Communication interface



Universal pressure measurement

- Pressure and vacuum
- 13 pressure measuring ranges
- All standard pressure units
- Optional inspection report

Quick installation

- L1 plug for fast commissioning
- M8 electrical adapters allow maximum flexibility
- Wide range of mounting options
- QS4 quick connector



Practical design

- Compact design 30x30 mm
- IP40 degree of protection
- Weight reduction with QS4

Single-start operation

- Clear 2-line display
- Configurable red surround for the entire display
- Intuitive menu navigation

Switchable electrical outputs

- Various switching functions
- Switching outputs (PNP/NPN, NO/NC)
- Analogue outputs (0...10 V, 1...5 V, 4...20 mA)

Product options

Product description

The pressure sensor SPAN is suitable for monitoring compressed air and non-corrosive gases. The sensor can be used in many industries thanks to its compact design. The measuring method is based on a piezoresistive measuring cell for relative pressure measurement. The pressure value is transmitted to the connected control system as a switching signal, as an analogue signal or via IO-Link® depending on the sensor variant and selected parameters.

Area of application

- Network monitoring (pressure present)
- Regulator monitoring (pressure in desired range)
- Vacuum (part picked up)
- Leak test (pressure drop over time)
- Object detection (back pressure present)

Functions

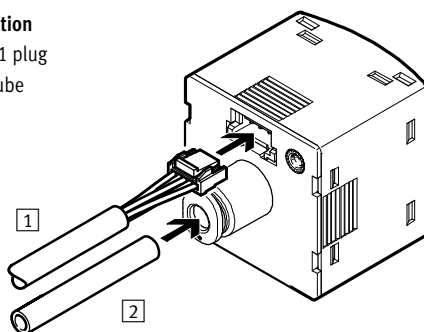
- Monitoring and setting a pressure threshold, a pressure range or differential pressure monitoring with teach-in function or by entering values
- ECO function with option to switch off the display
- Optional security code can be freely chosen (4-digit code)
- Adjustable low-pass filter to smooth the pressure signal
- Scaling the analogue output to increase the signal dynamics
- Offset compensation possible
- Min./max. value memory for monitoring compressed air
- All settings that have been carried out on one sensor (master) can be transferred (replication) to identical sensors (device)

Variants with IO-Link®

- Serial communication integrated using IO-Link® 1.1
- Cyclical transfer of two operating statuses and the measured pressure value
- The sensor can be parameterised remotely using an IO-Link® master
- Sensor can be changed easily using automatic parameterisation (hot-swap)
- Sensor identification, diagnostics and teach-in via IO-Link® possible

2-step connection

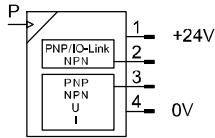
- 1 Push in L1 plug
- 2 Push in tube



Pressure sensors SPAN★

Data sheet

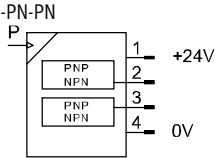
Variant with IO-Link® and analogue outputs ... -PNLK-PNVBA



- Compact design 30x30
- 13 pressure measuring ranges
–1 ... +16 bar to choose from
- Voltage 15 ... 30 V DC
- Temperature range 0 ... +50 °C
- IP40 degree of protection



Variant with 2 switching outputs ...



Technical data

Download CAD data → www.festo.com

Type of mounting		
Operating voltage range	[V DC]	15 ... 30
Electrical connection		Plug, 4-pin, square design
Length/width/height	[mm]	Max. 52/24.5/30

Input signal, measuring element

SPAN	-B2	-B11	-V025	-V05	-V1	-P025	-P05	-P1	-P2	-P6	-P10	-P12	-P16
Pressure measuring range [bar]	-1		0										
start value													
Pressure measuring range [bar]	1	10	-0.25	-0.5	-1	0.25	0.5	1	2	6	10	12	16
end value													
Max. overload pressure [bar]	5	15	1	2	5	1	2	5	6	15	15	15	20
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]												
	Inert gases												
Note on the operating/pilot medium	Operation with lubricated medium possible												
Ambient temperature [°C]	0 ... +50												
Temperature of medium [°C]	0 ... +50												

Switching output

Switching output	2 x PNP or 2 x NPN, switchable
Switching function	Window comparator
	Threshold value comparator
	Auto difference monitoring
Switching element function	N/C or N/O contact, switchable

Analogue output

		-PNLK, -PNVBA	PN-PN
Analogue output	[V]	0 ... 10	–
	[V]	1 ... 5	–
	[mA]	4 ... 20	–

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or
→ www.festo.com/catalogue/...

Enter the type code in the search field.

Order code

SPAN

—

R

—

—

—

→

Type code

SPAN	Pressure sensor
------	-----------------

Pressure measuring range [bar]

B2	−1 ... 1
B11	−1 ... 10
P025	0 ... 0.25
P05	0 ... 0.5
P1	0 ... 1
P2	0 ... 2
P6	0 ... 6
P10	0 ... 10
P12	0 ... 12
P16	0 ... 16
V025	0 ... −0.25
V05	0 ... −0.5
V1	0 ... −1

Supply port

R	Relative pressure
---	-------------------

Pneumatic connection

G18	G1/8
R18	R1/8
N18	NPT1/8
M5	M5
Q4	Push-in connector 4 mm

Thread type

—	None
F	Female thread
M	Male thread

1

Not with PNP or NPN or IO-Link® (-PNLK)

2

Not with PNP or NPN

3

Only with pneumatic connection M5
Not with push-in connector NPT1/8 (-N18), R1/8 (-R18)

4

Only with pneumatic connection G1/8 (-G18)
Not with push-in connector 4 mm (-Q4)

5

Only with NPT1/8 (-N18), R1/8 (-R18)
Not with pneumatic connection M5

7

Not with pressure measuring range P16

Sensors > Pressure and vacuum sensors >

Pressure sensors SPAN★

Order code

Electrical output 1	
PN	PNP or NPN 6
PNLK	PNP, NPN or IO-Link®

Electrical output 2	
PN	PNP or NPN 1
PNVBA	PNP, NPN 2
	0 ... 10 V
	1 ... 5 V
	40 ... 20 mA

Electrical connection	
L1	Plug, design L1

Certificate	
–	None
T	Test report

- 1

Not with PNP or NPN or IO-Link® (-PNLK)
- 2

Not with PNP or NPN
- 6

Not with pressure measuring range 0 ... 2 bar, 0 ... 6 bar, –1 ... 10 bar, 0 ... 0.5 bar, 0 ... 12 bar, 0 ... 16 bar, 0 ... –0.5 bar, 0 ... 0.25 bar, 0 ... –0.25 bar, 0 ... 1 bar

Order example:
SPAN-V1R-G18M-PN-PN-L1
Pressure sensor with display - pressure measuring range 0... –1 bar - supply port relative pressure - pneumatic connection G1/8 - thread type male thread - electrical output 1 PNP or NPN - electrical output 2 PNP or NPN - electrical connection plug, design L1

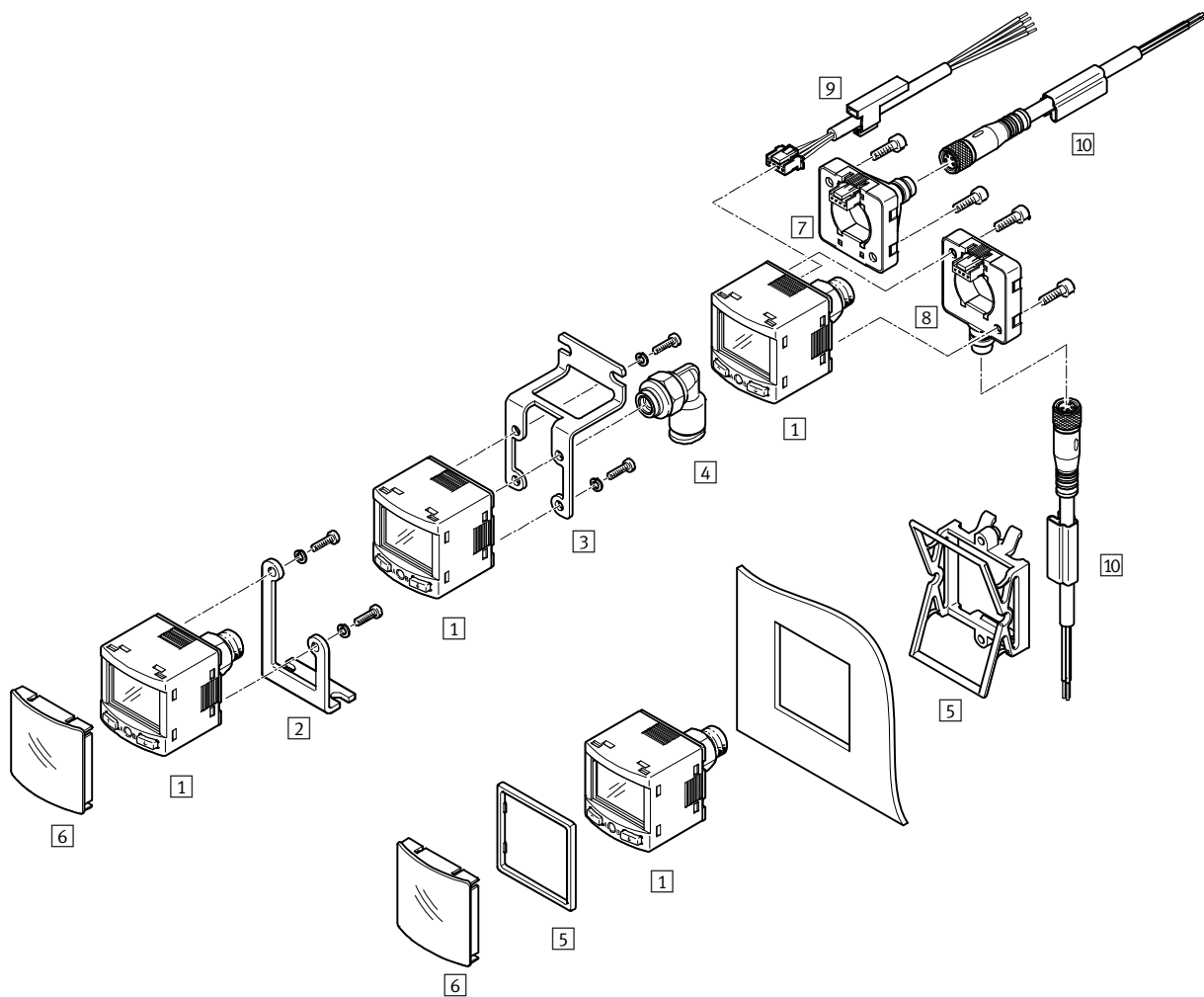
★ Quick ordering¹⁾

	Part no.	Type code
Pressure measuring range –1 ... +1 bar		
2 x PNP/NPN	8035545	SPAN-B2R-G18M-PN-PN-L1
switchable	8035551	SPAN-B2R-M5F-PN-PN-L1
	8035548	SPAN-B2R-R18M-PN-PN-L1

	Part no.	Type code
Pressure measuring range 0 ... +10 bar		
2 x PNP/NPN	8035544	SPAN-P10R-G18M-PN-PN-L1
switchable	8035547	SPAN-P10R-R18M-PN-PN-L1

1) All products in this table are easy to select and quick to order.

Accessories



	→ Page/ online
1 Pressure sensors SPAN	span
2 Mounting bracket SAMH-PU-A	1258
3 Wall mounting SAMH-PN-W	1258
4 Push-in fitting QSML-M5	1258
5 Front panel mounting kit SAMH-PN-F	1258

	→ Page/ online
6 Safety guard SACC-PN-G	1258
7 Electric adapter SASC-P4-A-M8-S	1258
8 Electric adapter SASC-P4-A-M8-A	1258
9 Connecting cable NEBS-L1G4	1258
10 Connecting cable NEBU-M8	1258

Pressure sensors SPAN★

Accessories – Ordering data

	Part no.	Type code
2 Mounting bracket		
	8003354	SAMH-PU-A
3 Wall mounting		
	★ 8035563	SAMH-PN-W

	O.D.	Tubing O.D.	Part no.	Type code
4 Push-in fittings				
Straight connection				
	M5	4 mm	★ 153304	QSM-M5-4
		6 mm	★ 153306	QSM-M5-6
	G1/8	4 mm	★ 186264	QSM-G $\frac{1}{8}$ -4
		6 mm	★ 186265	QSM-G $\frac{1}{8}$ -6
90° connection				
	M5	4 mm	★ 153333	QSML-5-4
		6 mm	★ 153335	QSML-5-6
	G1/8	4 mm	★ 186268	QSML-G $\frac{1}{8}$ -4
		6 mm	★ 186269	QSML-G $\frac{1}{8}$ -6
90° connection				
	G1/8	G1/8 internal to G1/8 internal	8030209	NPFC-L-2G18-F
	R1/8	R1/8 external to R1/8 external	8030223	NPFC-L-2R18-M
	M5	M5 internal to M5 external	8030215	NPFC-L-2M5-MF

	Part no.	Type code
5 Front panel mounting kit		
	★ 8035561	SAMH-PN-F
6 Safety guard		
	★ 8035560	SACC-PN-G
7 Electric adapter		
	8000326	SASC-P4-A-M8-A
8 Electric adapter		
	8000327	SASC-P4-A-M8-S

	Wires	Cable length [m]	Part no.	Type code
[9] Connecting cables				
Socket, rectangular design L1				
	4	2.5	572576	NEBS-L1G4-K-2,5-LE4
		5	572577	NEBS-L1G4-K-5-LE4
[10] Connecting cables				
M8x1, straight socket				
	4	2.5	★ 541342	NEBU-M8G4-K-2.5-LE4
		5	★ 541343	NEBU-M8G4-K-5-LE4
M8x1, angled socket				
	4	2.5	★ 541344	NEBU-M8W4-K-2.5-LE4
		5	★ 541345	NEBU-M8W4-K-5-LE4



Monitor pressure intelligently

- + IO-Link® for future security
- + Easy-to-read display
with colour change

Pressure and vacuum sensors ›
Pressure sensors

SPAU

Pressure and vacuum sensors >

Pressure sensors

SPAU



Overview, configuration and ordering

→ www.festo.com/catalogue/spau



Additional information, support and user documentation

→ www.festo.com/sp/spau



- + Switching output 2x PNP or 2x NPN, switchable
- + Electrical output 0.1 ... 10 V, 1 ... 5 V, 4 ... 20 mA
- + Pneumatic connection G1/8, R1/8, R1/4, 1/8 NPT, M5, M7, push-in connector 4 mm, 6 mm, 5/32"
- + Pressure switches
- + Vacuum switches

Pressure sensors SPAU

Product range overview

Method of measurement	Pressure measuring range [bar]	Measured variable	Switching element function	Switching function	Pneumatic connection	Electrical connection	Electrical output	
							1	2
Piezoresistive pressure sensor with display	-1... 1 bar	Relative pressure	Switchable	Freely programmable	G1/8 M5 M7 NPT1/8 Plug connector 4 mm Plug connector 6 mm R1/4 R1/8 Push-in connector 5/32	Plug M8x1 Plug M12x1	IO-Link PNP or NPN or IO-Link	4 ... 20 mA
	-1... 10 bar							1 ... 5 V
	0... -0.25 bar							PNP or NPN or
	0... -0.5 bar							0 ... 10 V or
	0... -1 bar							1 ... 5 V
	0... 0.25 bar							4 ... 20 mA
	0... 0.5 bar							
	0... 1 bar							
	0... 2 bar							
	0... 6 bar							
	0... 10 bar							
	0... 12 bar							
	0... 16 bar							

Product options

- Variants with display

 - Pressure display, pressure switching outputs and readout of analogue value from a device can be set on site
 - Quick commissioning of the pressure sensor thanks to straightforward menu navigation
 - Display colour blue/red as visual feedback about the pressure of the medium
 - Min./max. value memory for monitoring compressed air (display of rapid pressure peaks that are not visible to the human eye)
 - Adjustable filter attenuates the sensor signal generated by pressure peaks
 - Scaling the analogue output to increase the signal dynamics
- Choice of pressure units: bar, MPa, PSI and more
 - Offset compensation possible
 - ECO function “Switch off display” available
 - Optional security code can be freely chosen (4-digit code)
 - All settings that have been carried out on one sensor (master) can be transferred (replication) to other, identical sensors (device). This enables the commissioning time to be significantly shortened
- Variants without display

 - Analogue value output and pressure switching outputs proportional to the pressure
 - Switching output behaviour can be set on the machine display using IO-Link
 - Other functions can be set using IO-Link
- Variants with IO-Link:

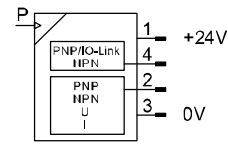
 - With and without display
 - Serial communication integrated using IO-Link 1.1
 - Analogue process value is provided digitally
 - The sensor can be parameterised and maintained remotely at control level using an IO-Link master
 - Automatic parameterisation following sensor change: no need to repeat parameterisation and sensor settings after changing the sensor

Sensors > Pressure and vacuum sensors >

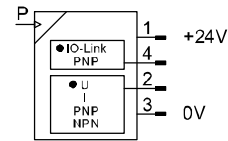
Pressure sensors SPAU

Data sheet

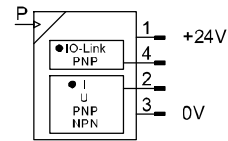
Display ... -L



Variant without display
Output preset to voltage ... -LK-V



Variant without display
Output preset to current
... -LK-A



Technical data		Download CAD data → www.festo.com	
Type of mounting	Display variant	Display variant for front panel mounting	Variant without display
Operating voltage range [V DC]	20 ... 30	20 ... 30	20 ... 30
Electrical connection	Plug M8, plug M12, A-coded	Plug M8, plug M12, A-coded	Plug M12, A-coded
Length/width/height [mm]	64/32/83	67/40/55	83/32/57

Input signal, measuring element													
SPAUA	-B2	-B11	-V025	-V05	-V1	-P025	-P05	-P1	-P2	-P6	-P10	-P12	-P16
Pressure measuring range [bar]	-1		0										
starting value													
Pressure measuring range [bar]	1	10	-0.25	-0.5	-1	0.25	0.5	1	2	6	10	12	16
final value													
Overload range [bar]	5	15	1	2	5	1	2	5	6	15	15	15	20
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4], inert gases												
Note on operating/pilot medium	Operation with lubricated medium possible												
Ambient temperature [°C]	0 ... +50												
Temperature of medium [°C]	0 ... +50												

Switching output		-PNLK, -PNVBA	-LK
Switching output	2 x PNP or 2 x NPN, switchable		2 x PNP ¹⁾
Switching function	Freely programmable		
Switching element function	N/C or N/O contact, switchable		

1) Second PNP output can only be activated via IO-Link

Analogue output		-PNLK, -PNVBA	-LK-A	-LK-V	-LK-B
Analogue output	[V]	0 ... 10	– ¹⁾	0 ... 10	– ¹⁾
	[V]	1 ... 5	– ²⁾	– ²⁾	1 ... 5
	[mA]	4 ... 20	4 ... 20	– ³⁾	– ³⁾

1) 0 ... 10 V analogue output can only be activated using IO-Link
2) 1 ... 5 V analogue output can only be activated using IO-Link
3) 4 ... 20 mA analogue output can only be activated using IO-Link

Ordering – Product options

Configurable product

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

The configurator can be found under Products on the DVD or

→ www.festo.com/catalogue/...

Enter the type code in the search field.

Order code

		SPAU	—		R	—		—		—		—		→
Type														
SPAU	Pressure sensor													
Pressure measuring range [bar]														
P025	0 ... 0.25													
P05	0 ... 0.5													
P1	0 ... 1													
P2	0 ... 2													
P6	0 ... 6													
P10	0 ... 10													
P12	0 ... 12													
P16	0 ... 16													
B2	−1 ... 1													
B11	−1 ... 10													
V025	0 ... −0.25													
V05	0 ... −0.5													
V1	0 ... −1													
Supply port														
R	Relative pressure													
Type of mounting														
T	Threaded mounting													
H	H-rail mounting													
W	Wall mounting													
A	Mounting bracket													
F	Front panel mounting													
Pneumatic connection														
G18	G1/8													
R14	R1/4	15												
R18	R1/8													
N18	NPT1/8													
M5	M5	1												
M7	M7													
Q4	Push-in connector 4 mm	2												
Q6	Push-in connector 6 mm	2												
T532	Push-in connector 5/32	2												
Thread type														
—	None													
M	Male thread	3 4												
F	Female thread	3 5												
Outlet direction														
—	At rear	6												
D	Underneath	7												

1 Only with mounting type A, F

2 Not with type of mounting T, not with pressure measuring range P16

3 Only in combination with pneumatic connection G18, N18, R18, R14, M7, M5

4 Not with type of mounting W, H, not with pneumatic connection Q4, Q6, T532, M7, M5

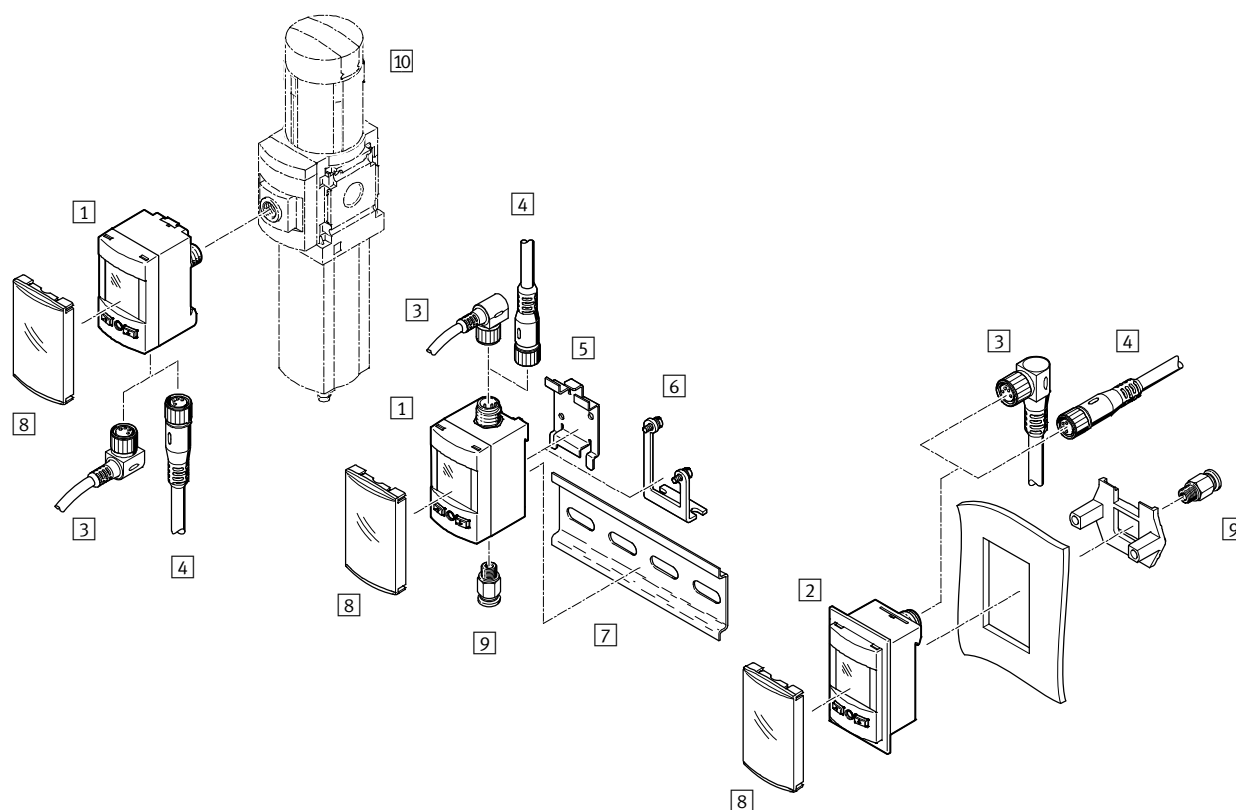
5 Not with type of mounting A if pneumatic connection G18, N18, R18

6 Not with type of mounting W, H, not with thread type F if pneumatic connection G18, N18, R18

7 Not with pneumatic connection M5, not with type of mounting A, not with thread type M

15 Only with thread type M, only outlet direction at rear, not with type of mounting W or H, not with electrical outlet direction at rear

Accessories



	→ Page/ online
1 Pressure sensors SPAU, display variants for threaded mounting	spau
2 Pressure sensors SPAU, display variants for front panel mounting	spau
3 Connecting cable, angled socket M8x1	1266
4 Connecting cable, straight socket M8x1	1266
3 Connecting cable, angled socket M12x1	1266
4 Connecting cable, straight socket M12x1	1266

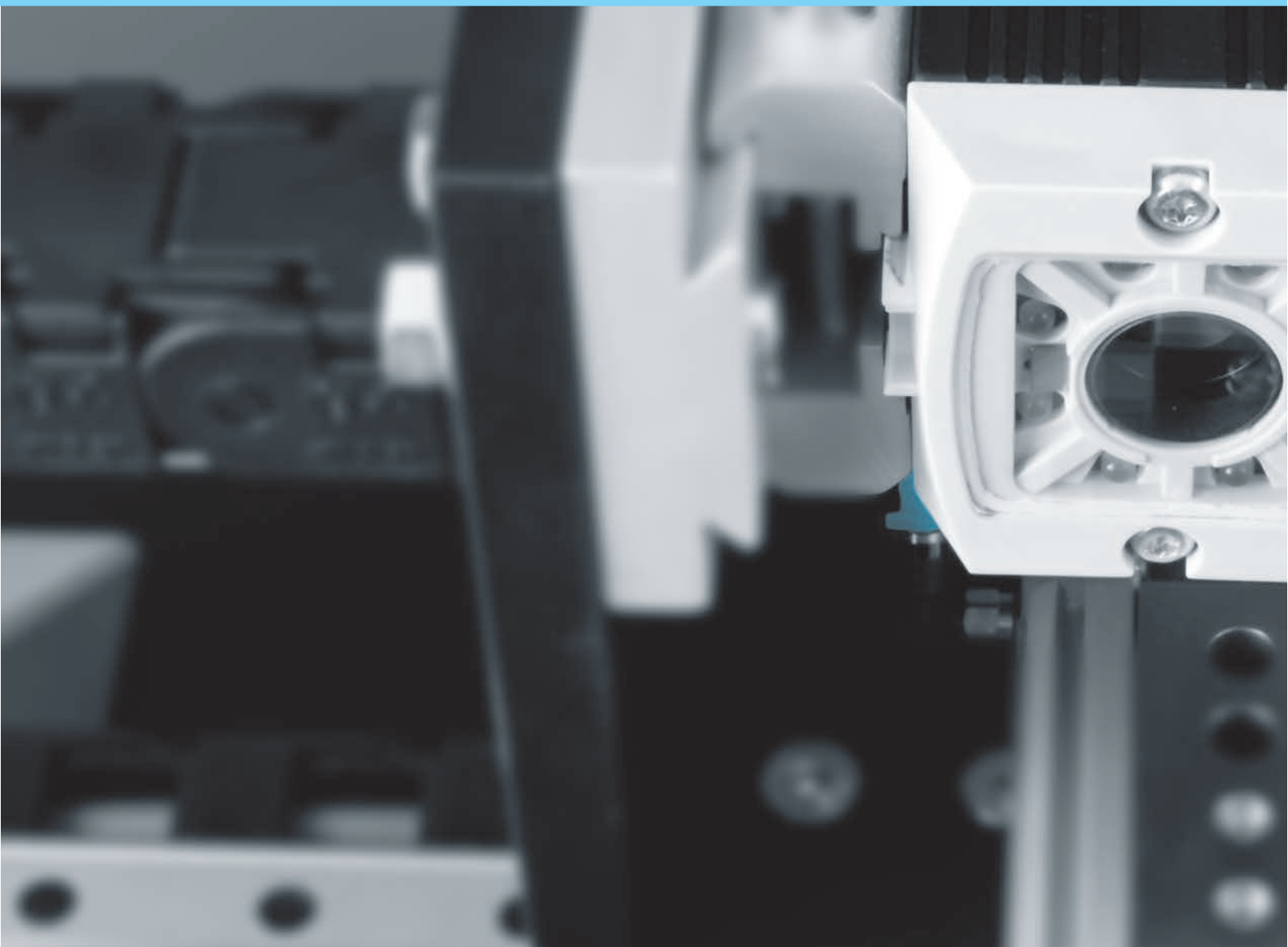
	→ Page/ online
5 Wall mounting SAMH-PU-W	1266
6 Mounting bracket SAMH-PU-A	1266
7 H-rail to DIN EN 60715	nrh
8 Safety guard SACC-PU-G	1266
9 Pressure supply port	qs
10 Service unit	ms4

Pressure sensors SPAU

Accessories – Ordering data

	Electrical connection	Number of wires	Cable length [m]	Part no.	Type
Connecting cables M12x1,					
4	Straight socket				Data sheets → Page 1543
	M8x1, 4-pin	4	2.5	★ 541342	NEBU-M8G4-K-2.5-LE4
			5	★ 541343	NEBU-M8G4-K-5-LE4
	M12x1, 5-pin	4	2.5	★ 550326	NEBU-M12G5-K-2.5-LE4
			5	★ 541328	NEBU-M12G5-K-5-LE4
3 Angled socket Data sheets → Page 1543					
	M8x1, 4-pin	4	2.5	★ 541344	NEBU-M8W4-K-2.5-LE4
			5	★ 541345	NEBU-M8W4-K-5-LE4
	M12x1, 5-pin	4	2.5	★ 550325	NEBU-M12W5-K-2.5-LE4
			5	★ 541329	NEBU-M12W5-K-5-LE4
Wall mounting					
	–			8003355	SAMH-PU-W
Mounting bracket					
	–			8003354	SAMH-PU-A
Safety guard					
	–			8003353	SACC-PU-G

12 Image processing systems



Keeping an eye on productivity and quality!

- + The vision sensors SBSx are the easy way to get started with image processing and, depending on the model, enable reading of 1D/2D codes or quality inspection of parts
- + Compact vision systems SBOx-M: intelligent compact vision systems for diagnostics and function monitoring of fast motion sequences
- + Compact vision systems SBOx-Q: intelligent cameras for precise positioning of axes, type identification, position detection and 2D quality inspection of moving and stationary parts

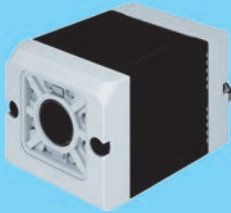


SBPB

Camera head

- + High speed and high resolution
- + High-quality robust housing

→ page 1270



SBSI

Code reader/object sensor

- + Vision sensor with integrated lighting/lens
- + Enables reading of 1D/2D codes or quality inspection of parts

→ page 1270



SBSC

Colour sensor/ universal sensor

- + Vision sensor with C mount
- + Enables reading of 1D/2D codes or quality inspection of parts

→ page 1271



CHB-C-N

Vision system

- + Intelligent line-scan camera
- + For orientation recognition and quality inspection of small moving parts
- + Encoder connection

→ page 1271

Contents

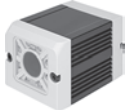
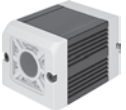
Product overview	1270
Camera heads SBPB	1270
NEW New series	

Product overview

Camera heads

		NEW
Type	Camera heads SBPB	
Sensor resolution	1280 x 1024 pixels (SXGA), 1600 x 1200 pixels (UXGA), 2456 x 2054 pixels (5MPix)	
Lens mounting	C mount	
Sensor type	Colour, monochrome	
Frame rate (full image)	36, 60	
Exposure time	9 ... 10,000,000 µs	
NEW	New series	
Description	- High-speed and high-resolution USB camera - High-quality, robust housing	
➔ Page/online	sbpb	

Vision sensors

				
Type	Code readers SBSI-B, SBSC-B	Object sensors SBSI-Q, SBSC-Q	Colour sensors SBSI-F, SBSC-F	Universal sensors SBSC-U
Sensor resolution	1280x1024 pixels (SXGA), 736x480 pixels (Wide VGA)	1280x1024 pixels (SXGA), 736x480 pixels (Wide VGA)	736x480 pixels (Wide VGA)	1280x1024 pixels (SXGA), 736x480 pixels (Wide VGA)
Working distance	6 mm ... infinite	6 mm ... infinite	6 mm ... infinite	
Field of view	Depends on the lens chosen, min. 5x4 mm, min. 8x6 mm, min. 16x13 mm	Depends on the lens chosen, min. 5x4 mm, min. 8x6 mm, min. 16x13 mm	Depends on the lens chosen, min. 5x4 mm, min. 8x6 mm	Depends on the lens chosen
Frame rate (full image)	40 ... 50 fps	40 ... 50 fps	40 fps	50 fps
Max. number of inspection programs/jobs	255	255	255	255
Description	• Reading 1D barcodes, 2D matrix codes and directly marked codes • Equipped with position tracking and additional inspection algorithms • High resolution of 1.3 megapixels • Vision sensor with integrated lighting/lens or with CS mount	• Easy quality inspection • 360° position tracking • Quick and powerful recognition algorithms • BLOB function for position sensing, quality inspection or for counting multiple parts in the image • Calliper function for measuring products (distance, edge position) • Vision sensor with integrated lighting/lens or with CS mount	• With detectors for contrast, position tracking based on contour, colour field, grey threshold, brightness, contour matching, pattern matching, edge detection, BLOB, colour value and list • Vision sensor with integrated lighting/lens or with CS mount	• Field of view can be individually determined using a suitable lens • OCR function (Optical Character Recognition) • BLOB function for position sensing, quality inspection or for counting multiple parts in the image • Calliper function for measuring products (distance, edge position) • Calibration function • Vision sensor with CS mount
→ Page/online	sbsi	sbsi	sbsi	sbsi

Product overview

Compact vision systems

				
Type	Compact vision system SBOA-M	Compact vision system SBOC-M	Compact vision system SBOC-Q	Compact vision system SBOI-Q
Sensor resolution	640x480 pixels (VGA)	640 x 480 pixels (VGA)	752x480 pixels (Wide VGA)	752x480 pixels (Wide VGA)
Working distance	Depends on the lens chosen	Depends on the lens chosen	Depends on the lens chosen	20 ... 550 mm
Field of view	Depends on the lens chosen	Depends on the lens chosen	Depends on the lens chosen	7.9x5.5 mm ... 195x125 mm
Frame rate (full image)	27 ... 241 fps	241 fps	60 fps	60 fps
Exposure time	1 ... 1,000,000 µs	1 ... 1,000,000 µs	18 ... 200,000 µs	18 ... 200,000 µs
Description	• Systainer with compact vision system SBOC-M and accessories, e.g. lens 4-48 mm, LED lights 84 W/9000 lumen, two tripods, cable	• High-speed camera for diagnostics and commissioning as well as for function monitoring of fast motion sequences • Recording and storage electronics integrated in the camera • For standard lens with C mount connection • Can be networked via Ethernet • Compact dimensions, low weight	• Intelligent field-based camera • For 2D quality inspection, position and rotary orientation detection, reading 1D and 2D codes, reading optical characters (OCR) • Integrated full PLC (CODESYS) • Ethernet and CAN for communicating with higher-order controllers • For standard lens with C mount connection	• Intelligent field-based camera • For 2D quality inspection, position and rotary orientation detection, reading 1D and 2D codes, reading optical characters (OCR) • Integrated full PLC (CODESYS) • Ethernet and CAN for communicating with higher-order controllers
→ Page/online	sbox	sbox	sbox	sbox

Checkbox Compact

	
Type	Vision system CHB-C-N
Sensor resolution	2048 pixels/line
Sensor type	CMOS line scan
Max. Number of inspection programs	256
Min. part length	1 mm
Max. part length	Depends on belt speed and resolution required
Description	• Intelligent line-scan camera • For orientation recognition and quality inspection of small moving parts • Encoder connection • Teach-in function
→ Page/online	chb-c