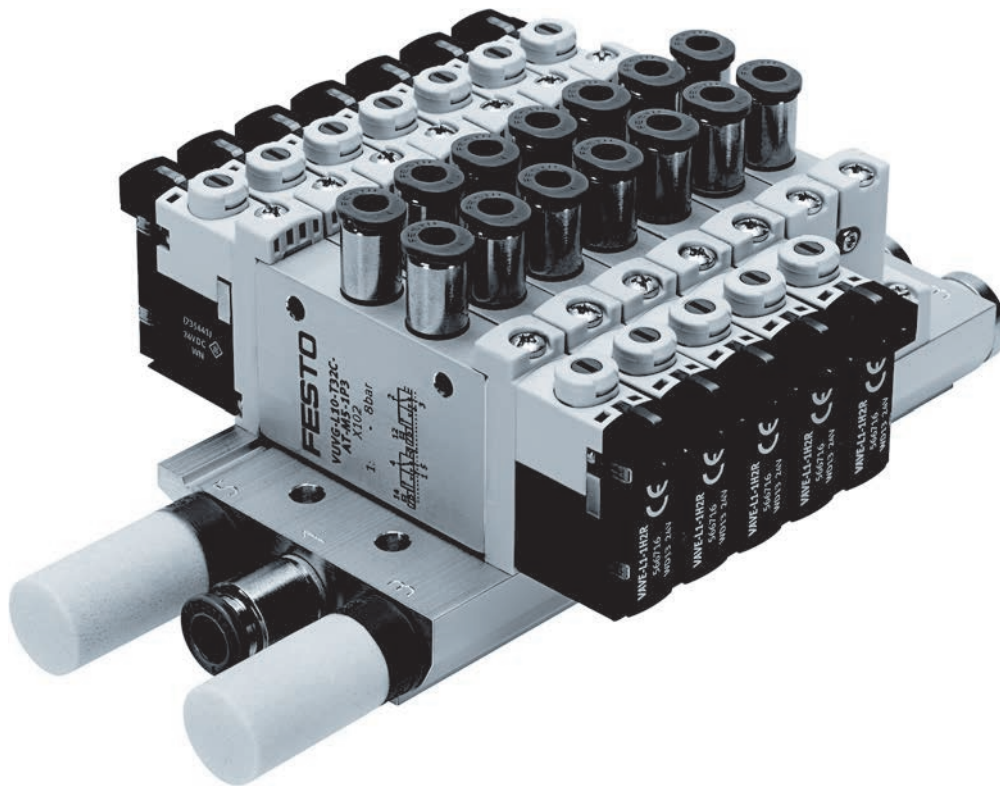
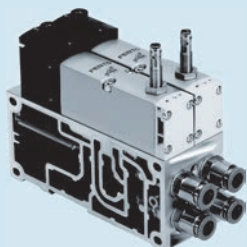


# 8 Valves



- + Standard directional control valves, universal directional control valve and application-specific directional control valves with electrical or pneumatic actuation
- + Directional control valves with mechanical actuating elements such as plunger, rolls, roller lever, swivel lever, whisker 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 electric, pneumatic or mechanical actuation

## Highlights

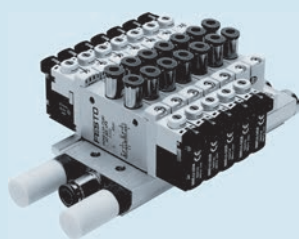


### VSVA

Standard valve acc. to ISO 15407-1

- + Corresponds to ISO 15407-1 and to ISO 15218 for pilot valve with interface
- + For valve terminal VTSA/VTSA-F

Page 658



### VUVG

Solenoid valve





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

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## Standard directional control valves

Type	 Solenoid valve VSNC	 Standard valve with central plug VSVA-R5, VSVA-R2	 Standard valve with individual plug VSVA-C1	 Standard valve, plug-in VSVA-T1
<b>Type of actuation</b>	Electric	Electric	Electric	Electric
<b>Pneumatic port 1</b>	G1/4, NPT 1/4-18	Sub-base size 1 to ISO 5599-1, sub-base size 2 to ISO 5599-1	Sub-base size 18 mm to ISO 15407-1, sub-base size 26 mm to ISO 15407-1	Sub-base size 1 to ISO 5599-2, sub-base size 2 to ISO 5599-2, sub-base size 18 mm to ISO 15407-2, sub-base size 26 mm to ISO 15407-2
<b>Standard nominal flow rate</b>	950 ... 1350 l/min	400 ... 2800 l/min	400 ... 1100 l/min	370 ... 2900 l/min
<b>Valve function</b>	5/2 double-solenoid, 5/2 or 3/2 convertible, 5/3 pressurised, 5/3 exhausted, 5/3 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, 3/2-way, single solenoid, open/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, closed, 2x3/2-way, single solenoid, open, 2x3/2-way, single solenoid, open/closed
<b>Electrical connection</b>	3-pin, type A, type B, to EN 175301-803, to industry standard (11 mm), plug connector	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 connector
<b>Description</b>	<ul style="list-style-type: none"> <li>NAMUR interface</li> <li>Rotatable seal for 3/2 or 5/2-way valve</li> <li>Wide choice of EX solenoid systems</li> <li>Sturdy and powerful</li> <li>Extended temperature range</li> <li>Outstanding value for money</li> </ul>	<ul style="list-style-type: none"> <li>Corresponds to ISO 5599-2 and to ISO 15218 for pilot valve with interface</li> <li>Electrical connection by central plug</li> <li>Robust metal housing</li> <li>Manifold assembly with mixed sizes possible</li> </ul>	<ul style="list-style-type: none"> <li>Corresponds to ISO 15407-1 and to ISO 15218 for pilot valve with interface</li> <li>Electrical connection via type C plug</li> <li>Robust metal housing</li> <li>Manifold assembly with mixed sizes possible</li> </ul>	<ul style="list-style-type: none"> <li>For valve terminal VTSA/VTSA-F</li> <li>Robust metal housing</li> </ul>
<b>→ Page/online</b>	<a href="#">vsnc</a>	<a href="#">vsva</a>	<a href="#">658</a>	<a href="#">vtsa</a>





## Standard directional control valves

				
Type	Pneumatic valve, ISO 15407-1 VSPA	Solenoid valve, ISO 5599-1 MN1H, MFH, MDH, MEBH, MDH, JMN1H, JMN1DH, JMFH, JMFHD, JMDH, JMEBH, JMEBDH, JMDDH	Pneumatic valve, ISO 5599-1 VL, J, JD	Standard valves to ISO 15218 (CNOMO) MD, MDH, MGXDH, MGXIAH, VSCS
Type of actuation	Pneumatic	Electric	Pneumatic	Electric
Pneumatic port 1	Sub-base size 18 mm to ISO 15407-1, sub-base size 26 mm to ISO 15407-1	Sub-base size 1 to ISO 5599-1, sub- base size 2 to ISO 5599-1, sub-base size 3 to ISO 5599-1, sub-base size 4 to ISO 5599-1	Sub-base size 1 to ISO 5599-1, sub- base size 2 to ISO 5599-1, sub-base size 3 to ISO 5599-1, sub-base size 4 to ISO 5599-1	E-box
Standard nominal flow rate	400 ... 1100 l/min	1200 ... 6000 l/min	1200 ... 6000 l/min	13 ... 50 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, ex- hausted, 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, 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	2/2-way, single solenoid, closed
Electrical connection		Type A, M12x1, plug, central plug, to DIN 43650, round design, square design		Type A, type C, M12x1, to DIN EN 175301-803, to IEC 61076-2-101
Description	<ul style="list-style-type: none"> <li>• Conforms to ISO 15407-1</li> <li>• Pneumatic actuation</li> <li>• Manifold assembly with mixed sizes possible</li> </ul>	<ul style="list-style-type: none"> <li>• Conforms to ISO 5599-1</li> <li>• Robust metal housing</li> <li>• Manifold assembly with mixture of ISO sizes 1/2/3 possible</li> <li>• Extensive range of electrical connection options</li> <li>• Wide range of vertical stacking modules: pressure regulator, flow control valve, vertical pressure shut-off plate, etc.</li> <li>• Also available as a valve terminal</li> </ul>	<ul style="list-style-type: none"> <li>• Conforms to ISO 5599-1</li> <li>• Pneumatic actuation</li> </ul>	<ul style="list-style-type: none"> <li>• CNOMO port pattern, to ISO 15218</li> <li>• With and without manual override</li> </ul>
→ Page/online	658	675	<a href="#">iso 5599-1</a>	<a href="#">iso 15218</a>

## Standard directional control valves


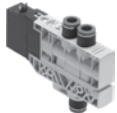


	
Type	Solenoid valve, NAMUR (VDI/VDE 3845) NVF3, MFH, MN1H, MGTBH, VSNB
Type of actuation	Electric
Pneumatic connection 1	Sub-base, G1/4
Standard nominal flow rate	400 ... 1000 l/min
Valve function	5/2-way, double solenoid, 5/2-way and 3/2-way, single solenoid, 5/2-way, single solenoid, 5/2-way or 3/2-way, single solenoid
Electrical connection	Socket, type A, M20x1.5, to DIN 43650, to DIN EN 175301-803, screw terminal, plug, square design
Description	<ul style="list-style-type: none"> <li>• NAMUR interface</li> <li>• Variants for use in Ex zone I</li> </ul>
→ Page/online	<a href="#">namur</a>

## Universal directional control valves





Type	 Solenoid valve VUVS	 Pneumatic valve VUVS	 Pneumatic valve VUVG	 Solenoid valve, plug-in VUVG
Type of actuation	Electric	Pneumatic	Pneumatic	Electric
Pneumatic port 1	G1/8, G1/4, G3/8	G1/8, G1/4, G3/8	G1/8, G1/4, M3, M5, M7	G1/4, G1/8, M3, M5, M7
Standard nominal flow rate	600 ... 2400 l/min	600 ... 2400 l/min	80 ... 1380 l/min	130 ... 1200 l/min
Valve function	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, monostable closed, 3/2-way, monostable, open, 5/2-way, bistable 5/2-way, monostable 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	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
Electrical connection	Type C, type B			Via E-box
Description	<ul style="list-style-type: none"> <li>• Universal valve, sturdy and durable</li> <li>• Low-cost, no limitations with regard performance</li> <li>• Can be used as individual valves or manifold valves VTUS</li> </ul>	<ul style="list-style-type: none"> <li>• Universal valve, sturdy and durable</li> <li>• Pneumatically actuated</li> <li>• Can be used as individual valves or manifold valves VTUS</li> </ul>	<ul style="list-style-type: none"> <li>• Compact universal valve</li> <li>• Pneumatically actuated</li> <li>• High flow rate relative to its size</li> <li>• In-line valves can be used as individual valves or manifold valves</li> </ul>	<ul style="list-style-type: none"> <li>• Sub-base valve</li> <li>• For valve terminal VTUG plug-in</li> </ul>
→ Page/online	802	<a href="#">vuvs</a>	<a href="#">vuvg</a>	695

8




## Universal directional control valves

Type	 Solenoid valve, for individual connection VUVG	 Solenoid valve VUVB	 Solenoid valve CPE10, CPE14, CPE18, CPE24	 Solenoid valve VMPA1, , VMPA14, VMPA2
Type of actuation	Electrical	Electrical	Electrical, via pilot interface acc. to ISO 15218	Electrical
Pneumatic port 1	G1/4, G1/8, M3, M5, M7, QS-3, QS-4, QS-6, QS-8	Sub-base, QS-6, QS-8	G1/8, G1/4, G3/8, M5, M7, QS4, QS6, QS8, QS10, QS12	G1/8, M7
Standard nominal flow rate	90 ... 1380 l/min	200 ... 1000 l/min	180 ... 3200 l/min	160 ... 900 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	3/2-way, single solenoid, closed, 3/2-way, single solenoid, open, 4/2-way, double solenoid, 4/2-way, single solenoid	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	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
Electrical connection	Via E-box	Type C, plug-in for multi-pin plug, plug, acc. to EN 175301-803, via sub-base	2-pin, 4-pin, type C, M8x1	4-pin, M8x1, plug, acc. to EN 60947-5-2
Description	<ul style="list-style-type: none"> <li>• Compact universal valve</li> <li>• Connection technology by connecting plate</li> <li>• High flow rate relative to its size</li> <li>• In-line valves can be used as individual valves or manifold valves</li> </ul>	<ul style="list-style-type: none"> <li>• In-line valve in polymer technology</li> <li>• Also available as semi in-line valve</li> <li>• Sub-bases mountable for individual valves</li> <li>• Width 20 mm</li> </ul>	<ul style="list-style-type: none"> <li>• Universally applicable individual valve</li> <li>• High flow rate relative to its size</li> </ul>	<ul style="list-style-type: none"> <li>• For valve terminal MPA</li> <li>• As individual valve mounted on sub-base</li> <li>• Comprehensive valve range</li> </ul>
→ Page/online	695	<a href="#">vuvb</a>	<a href="#">cpe</a>	<a href="#">vmpa1</a>





## Universal directional control valves

				
Type	Solenoid valve, pneumatic valve, Tiger 2000 MFH, MVH, JMFH, JMVH, VL, J	Solenoid valve, pneumatic valve, Tiger Classic MFH, MOFH, JMFH, JMFHD, VL/O, VL, JH, JDH	Solenoid valve, pneumatic valve, mid pneumatic MEBH, MOEBH, MEH, MOEH, JMEBH, JMEH, VL, J	Cassette valve C, CJ, CJM, CL, CM
Type of actuation	Electric, pneumatic	Electric, pneumatic	Electric, pneumatic	Pneumatic
Pneumatic port 1	Sub-base, G1/4, G1/8, G3/8, G3/4, G1/2	Sub-base, G1/2, G1/4, G1/8, G3/4, G3/8, M5, NPT1/8-27	Sub-base G1/8	Sub-base, G1/4, G1/2
Standard nominal flow rate	750 ... 2600 l/min	500 ... 7500 l/min	400 ... 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 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	5/2-way, double solenoid/bistable, 5/2-way, single solenoid/monostable
Electrical connection	Type B, to EN 175301-803, via F coil, to be ordered separately	Via F coil, to be ordered separately	Plug, square design to EN 175301-803, type C	
Description	<ul style="list-style-type: none"> <li>Sturdy and reliable</li> <li>Wide range of voltages due to individual coils</li> <li>Principle with armature guide tube</li> </ul>	<ul style="list-style-type: none"> <li>Sturdy and reliable</li> <li>Poppet valve</li> <li>All-metal version</li> <li>Principle with armature guide tube</li> </ul>	<ul style="list-style-type: none"> <li>Sub-base valve, semi in-line valve</li> <li>Individual mounting or manifold assembly for 2 ... 10 valves</li> <li>Operating voltage 24 V DC, 110/230 V AC (50 ... 60 Hz)</li> </ul>	<ul style="list-style-type: none"> <li>Sturdy</li> <li>Direct mounting on sub-base</li> <li>With and without manual override</li> </ul>
→ Page/online	<a href="#">tiger 2000</a>	<a href="#">734</a>	<a href="#">mebh</a>	<a href="#">cm</a>

## Universal directional control valves





			
Type	Solenoid valves supplementary product range BMCH, BMFH, JMC, JMF, MC, MCH, MF, MFH, MLC, MOCH, MOFH	Pneumatic valves supplementary range A, VL	Basic valve LC
Type of actuation	Electrical		Pneumatic, electric
Pneumatic port 1	Sub-base, M5, G1/8, G1/4, G1/2, G3/8, G3/4	G1/4	G1/8, G1/4
Standard nominal flow rate	46 ... 7500 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, single solenoid, 5/3-way, pressurised, 5/3-way, exhausted, 5/3-way, closed, 5/4-way, closed	5/2 bistable, 5/4 closed	3/2-way directly actuated, 5/4-way indirectly actuated
Electrical connection	Plug, via F coil, to be ordered separately		
Description	<ul style="list-style-type: none"> <li>With and without manual override</li> <li>Manifold mounting or individual valve</li> <li>Especially suited for positioning, for stopping in the event of an emergency stop and for holding double-acting cylinders in any position</li> </ul>	<ul style="list-style-type: none"> <li>For actuating cylinders for single stroke and oscillating movements</li> <li>For positioning, for stopping in the event of an emergency stop and for holding double-acting cylinders in any position</li> <li>For controlling functions of pneumatic feed units such as feed motions and reciprocal clamping</li> <li>Actuation either manually by means of switch lever, mechanically by means of control stem or pneumatically</li> </ul>	<ul style="list-style-type: none"> <li>Screw-in actuator attachments</li> <li>For positioning, for stopping in the event of an emergency stop and for holding double-acting cylinders in any position</li> </ul>
→ Page/online	<a href="#">bmch</a>	<a href="#">vl</a>	<a href="#">lc</a>

## Application-specific directional control valves


Type	 Control block VOFA	 Solenoid valve VOFD	 Solenoid valve VOFC	 Solenoid valve VOVG
<b>Design</b>	Piston spool	Directly actuated poppet valve	Piston spool, soft-switching piston valve, piloted piston poppet valve	Piston spool
<b>Valve function</b>	3/2-way, monostable, closed, 5/2-way, monostable	3/2-way, closed, monostable, 3/2-way, closed, monostable, semi-automatic	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
<b>Operating pressure</b>	3 ... 10 bar	0 ... 12 bar	0 ... 8 bar	-0.9 ... 8 bar
<b>Ambient temperature</b>	-5 ... 50 °C	-25 ... 60 °C	-25 ... 60 °C	-5 ... 50 °C
<b>Pneumatic port 1</b>	G1/4	G1/4, NPT1/4-18, NAMUR port pattern	G1/2, G1/4, NPT1/4-18, NAMUR port pattern	Sub-base M5, M7
<b>Standard nominal flow rate</b>	950 ... 1050 l/min	52 ... 450 l/min	600 ... 3000 l/min	180 ... 200 l/min
<b>Description</b>	<ul style="list-style-type: none"> <li>• Redundantly constructed valve block, can be used for safe reversing of a hazardous movement</li> <li>• 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</li> <li>• Equipped with VSVA valves</li> <li>• Switching position sensing by sensors</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable for process automation, for applications in the chemical and petrochemical industries</li> <li>• Suitable for outdoor use under harsh, dusty ambient conditions</li> <li>• Especially suitable for quarter turn actuators thanks to NAMUR flange pattern</li> <li>• Variants with TÜV approval up to SIL4 to IEC 61508</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable for process automation, for applications in the chemical and petrochemical industries</li> <li>• Suitable for outdoor use under harsh, dusty ambient conditions</li> <li>• Especially suitable for quarter turn actuators thanks to NAMUR flange pattern</li> <li>• Valve can switch between internal and external pilot air</li> <li>• Variants with TÜV approval up to SIL3 acc. to IEC 61508</li> </ul>	<ul style="list-style-type: none"> <li>• Very compact valve for solutions with extremely compact assembly</li> <li>• Suitable for applications in the electronics and light assembly industry</li> <li>• In-line, semi in-line and sub-base valve</li> <li>• Manifold rail for 2 ... 10 valves</li> </ul>
<b>→ Page/online</b>	<a href="#">vofa</a>	<a href="#">vofd</a>	<a href="#">vofc</a>	<a href="#">vovg</a>





## Application-specific directional control valves

				
Type	Solenoid valve MHA1, MHP1	Solenoid valve MHE2, MHP2, MHA2, MHE3, MHP3, MHA3, MHE4, MHP4, MHA4	Solenoid valve CDVI5.0	Solenoid valve MHJ9, MHJ10
Design	Poppet valve with spring return	Pressure-relieved poppet valve	Piston spool	Poppet valve without spring return
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	2/2-way, closed, monostable
Operating pressure	-0.9 ... 8 bar	-0.9 ... 8 bar	-0.9 ... 10 bar	0.5 ... 8 bar
Ambient temperature	-5 ... 50 °C	-5 ... 60 °C	-5 ... 50 °C	-5 ... 60° C
Pneumatic port 1	Sub-base, QS3, QS4, prepared for QSP10	Sub-base, G1/4, G1/8, M7, QS4, QS6, QS8	Sub-base	Sub-base, QS4, QS6
Standard nominal flow rate	10 ... 30 l/min	90 ... 400 l/min	300 ... 650 l/min	50 ... 160 l/min
Description	<ul style="list-style-type: none"> <li>• Directly actuated poppet valve</li> <li>• Miniature valve: grid dimension 10 mm</li> <li>• Sub-base valve</li> <li>• Manifold block for 2 ... 10 valves</li> <li>• Switching times down to 4 ms</li> </ul>	<ul style="list-style-type: none"> <li>• Directly actuated poppet valve</li> <li>• Fast-switching valve: switching times down to 2 ms</li> <li>• Direct mounting, individual sub-base, manifold assembly</li> <li>• Manifold block for 2 ... 10 valves</li> </ul>	<ul style="list-style-type: none"> <li>• Sub-base valve for clean design valve terminal</li> <li>• Easy-to-clean design</li> </ul>	<ul style="list-style-type: none"> <li>• Directly actuated poppet valve</li> <li>• Individual valve with integrated QS fitting</li> <li>• Switching frequency up to 1000 Hz</li> <li>• Service life &gt; 0.5 billion switching cycles</li> </ul>
→ Page/online	<a href="#">mh1</a>	<a href="#">mh2</a>	<a href="#">cdvi5.0</a>	<a href="#">Mhj9</a>





## Application-specific directional control valves

	
Type	Pneumatic and solenoid valves, M5 Compact System J, JD, JMFH, MFH, MUFH, VD, VL/O, VL
Design	Piston valve, disc seat valve
Valve function	3/2 bistable, 3/2 closed monostable, 3/2 open monostable, 5/2 bistable, 5/2 bistable, dominant, 5/2 monostable, 8/2 monostable
Operating pressure	-0.9 ... 10 bar
Ambient temperature	-10 ... 60° C
Pneumatic port 1	PK-3
Standard nominal flow rate	50 ... 105 l/min
Description	<ul style="list-style-type: none"> <li>• Control elements with all functions for pneumatic sequence controls</li> <li>• For control cabinet installation</li> <li>• Fast replacement of components</li> </ul>
→ Page/online	<a href="#">m5 compact</a>


## Manually actuated directional control valves: swivel lever valves

		
Type	Hand lever valve VHER	Hand lever valve H-3-1/4-B, H-5-1/4-B
Valve function	4/3 exhausted, 4/3 closed, 4/3 pressurised	3/2-way monostable, 5/2-way bistable
Type of pilot control	Direct	Direct, piloted
Standard nominal flow rate	170 ... 3800 l/min	550 ... 600 l/min
Pneumatic working port	G1/8, G1/4, G1/2, M5	G1/4
Operating pressure	-0.95 ... 10 bar	-0.95 ... 10 bar
Description	<ul style="list-style-type: none"> <li>• Lever in metal or polymer design</li> <li>• Front panel mounting, through or mounting holes</li> </ul>	<ul style="list-style-type: none"> <li>• Die-cast aluminium design</li> </ul>
→ Page/online	<a href="#">vher</a>	<a href="#">n_v14</a>





## Manually actuated directional control valves: pushbutton valves

				
Type	Pushbutton valve VHEM-P	Pushbutton valve K/O3-PK	Pushbutton valve K3-M5	Pushbutton valve T-5/3-1/4
Valve function	5/2 bistable, 5/2 monostable, 3/2 monostable, closed, 3/2 monostable, open	3/2-way, monostable, open/closed	3/2-way, monostable, closed	5/3-way, closed
Type of pilot control	Direct, piloted	Direct	Direct	Piloted
Standard nominal flow rate	500 ... 1000 l/min	80 l/min	80 l/min	680 l/min
Pneumatic working port	G1/8, G1/4	PK-3	M5	G1/4
Operating pressure	-0.95 ... 10 bar	0 ... 8 bar	-0.95 ... 8 bar	2 ... 10 bar
Description	<ul style="list-style-type: none"> <li>• With button switch</li> <li>• Reverse operation possible</li> </ul>	<ul style="list-style-type: none"> <li>• With button switch</li> <li>• Polymer design</li> <li>• Ducted exhaust air</li> </ul>	<ul style="list-style-type: none"> <li>• With button switch</li> <li>• Suitable for vacuum operation</li> <li>• Sturdy die-cast zinc design</li> </ul>	<ul style="list-style-type: none"> <li>• With pushbutton</li> <li>• For positioning, for stopping in the event of an emergency stop and for holding a double-acting cylinder in any position</li> <li>• Aluminium design</li> </ul>
→ Page/online	<a href="#">vhem-p</a>	<a href="#">n_vpk</a>	<a href="#">k-3</a>	<a href="#">n_msv</a>



## Manually actuated directional control valves: pushbutton valves

	
Type	Pushbutton valve F3-M5
Valve function	3/2-way, monostable, closed
Type of pilot control	Direct
Standard nominal flow rate	80 l/min
Pneumatic working port	M5
Operating pressure	-0.95 ... 10 bar
Description	<ul style="list-style-type: none"> <li>• With pedal</li> <li>• Suitable for vacuum operation</li> <li>• Sturdy die-cast zinc design</li> </ul>
→ Page/online	<a href="#">f3-m5</a>



## Manually actuated directional control valves: finger lever valves

				
Type	Finger lever valve VHEM-L, VHEM-LT	Finger lever valve TH/O3-PK3	Finger lever valve TH-3-M5, TH-3-1/4-B, TH-5-1/4-B, THO-3-1/4-B	Finger lever valve H4/3
Valve function	3/2-way, single-solenoid, closed, 3/2-way, single-solenoid, open, 5/2-way, single-solenoid	3/2-way, monostable, closed	3/2-way, single-solenoid, closed, 3/2-way, single-solenoid, open, 5/2-way, single-solenoid	4/3-way exhausted, 5/3-way closed
Type of pilot control	Direct	Direct	Direct	Piloted
Standard nominal flow rate	500 ... 1000 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	<ul style="list-style-type: none"> <li>• With finger lever</li> <li>• Mechanical spring return</li> <li>• Fast assembly</li> </ul>	<ul style="list-style-type: none"> <li>• With finger lever</li> <li>• Polymer design</li> <li>• Ducted exhaust air</li> </ul>	<ul style="list-style-type: none"> <li>• With finger lever</li> <li>• Die-cast zinc or die-cast aluminium design</li> </ul>	<ul style="list-style-type: none"> <li>• With detenting finger lever</li> <li>• Front panel mounting or mounting on sub-base</li> <li>• Aluminium design</li> </ul>
→ Page/online	<a href="#">vhem-l</a>	<a href="#">n_vpk</a>	<a href="#">th3-m5</a>	<a href="#">H-4</a>


## Manually actuated directional control valves: toggle lever valves

		
Type	Toggle lever valve KH/O3-PK3	Toggle lever valve H-5/3-1/4
Valve function	3/2-way, monostable, open/closed	5/3-way, closed
Type of pilot 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	<ul style="list-style-type: none"> <li>• With toggle lever</li> <li>• Polymer design</li> <li>• Ducted exhaust air</li> </ul>	<ul style="list-style-type: none"> <li>• With toggle lever</li> <li>• For positioning, for stopping in the event of an emergency stop and for holding double-acting cylinders in any position</li> <li>• Aluminium design</li> </ul>
→ Page/online	<a href="#">n_vpk</a>	<a href="#">n_msv</a>




## Manually actuated directional control valves: foot valves

		
Type	Foot valve F-3-1/4-B, FO-3-1/4-B, F-5-1/4-B	Foot valve with detent FP-3-1/4-B, FPB-3-1/4, FP-5-1/4-B
Valve function	3/2-way, single-solenoid, closed, 3/2-way, single-solenoid, open, 5/2-way, single-solenoid	3/2-way, monostable, closed, 5/2-way, monostable
Type of pilot 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	<ul style="list-style-type: none"> <li>• With foot pedal</li> <li>• Sturdy die-cast zinc design</li> </ul>	<ul style="list-style-type: none"> <li>• With foot pedal with detent</li> <li>• Sturdy die-cast zinc design</li> </ul>
→ Page/online	<a href="#">fo3</a>	<a href="#">fpb3</a>




## Manually operated directional control valves: Selector switches

	
Type	Selector switch HW-6-38
Valve function	3/6-way, bistable
Type of pilot control	Direct
Standard nominal flow rate	180 l/min
Pneumatic working port	M5
Operating pressure	0 ... 8 bar
Description	<ul style="list-style-type: none"> <li>• With rotary knob and arrow</li> <li>• Front panel mounting or mounting on sub-base</li> <li>• With six switching positions</li> </ul>
→ Page/online	<a href="#">hw-6</a>




## Manually operated directional control valves: Front panel valves

			
Type	Front panel valve SV/O3-PK3x2	Front panel valve SVS-3-1/8, SVS-4-1/8, SVSO-3-1/8	Front panel valve SV3-M5, SV5-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 pilot control	Direct	Direct	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	<ul style="list-style-type: none"> <li>• For actuator attachments such as toggle and select-or switches</li> <li>• Reliable coupling system for rapid assembly and dismantling</li> <li>• Polymer design</li> </ul>	<ul style="list-style-type: none"> <li>• For actuator attachments such as pushbutton actuators, mushroom pushbuttons, mushroom actuators, selector switches, toggle levers, key actuators</li> <li>• Reliable coupling system for rapid assembly and dismantling</li> </ul>	<ul style="list-style-type: none"> <li>• For actuator attachments such as pushbutton actuators, mushroom pushbuttons, mushroom pushbuttons with detent, selector switches or toggle levers</li> <li>• Reliable coupling system for rapid assembly and dismantling</li> <li>• Polymer design</li> </ul>
→ Page/online	<a href="#">sv</a>	<a href="#">svos</a>	<a href="#">sv-3</a>




## Mechanically operated directional control valves: Stem actuated valves

				
Type	Stem actuated valve VMEM	Stem actuated valve V/O-3-PK-3, V/O-3-1/8	Stem actuated micro valve S3-PK3-B, S03-PK3-B	Stem actuated valve VS-3-1/8, VS-4-1/8, VOS-3-1/8
Valve function	3/2-way, monostable, open/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 pilot control	Direct, piloted	Direct	Direct	Piloted
Standard nominal flow rate	500 ... 1000 l/min	80 ... 140 l/min	60 l/min	120 l/min
Pneumatic working port	G1/8, G1/4	G1/8, PK-3	PK-3	G1/8
Operating pressure	-0.95 ... 10 bar	-0.95 ... 8 bar	-0.95 ... 8 bar	3.5 ... 8 bar
Description	<ul style="list-style-type: none"> <li>• Light weight</li> <li>• Small size</li> <li>• Various actuator attachments</li> </ul>	<ul style="list-style-type: none"> <li>• Through-holes in housing</li> <li>• Polymer or aluminium design</li> </ul>	<ul style="list-style-type: none"> <li>• Dimensions according to DIN 41635, type A</li> <li>• Polymer design</li> <li>• Various actuator attachments</li> </ul>	<ul style="list-style-type: none"> <li>• With plunger</li> <li>• Aluminium design</li> <li>• Minimal actuating force with pilot control</li> </ul>
→ Page/online	<a href="#">vmem</a>	<a href="#">n_v18</a>	<a href="#">s-3-pk</a>	<a href="#">vos</a>




## Mechanically operated directional control valves: Stem actuated valves

Type	 Stem actuated valve V-3-1/4-B, V-5-1/4-B, VO-3-1/4-B	 Limit switch SDK3-PK3, SDK4-PK3	 Limit stop signal generator SDV2-B, SDV3
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 pilot control	Direct	Direct	Direct
Standard nominal flow rate	550 ... 600 l/min	16 l/min	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	<ul style="list-style-type: none"> <li>• With plunger</li> <li>• Die-cast aluminium design</li> </ul>	<ul style="list-style-type: none"> <li>• For end-position sensing and position control</li> <li>• High accuracy</li> <li>• Stainless steel design</li> </ul>	<ul style="list-style-type: none"> <li>• For end-position sensing and position control</li> <li>• High precision and low actuating forces</li> <li>• Sturdy design</li> </ul>
→ Page/online	<a href="#">vo-3</a>	<a href="#">sdk</a>	<a href="#">sdv</a>




## Mechanically operated directional control valves: Roller lever valves

Type	 Roller lever valve R/O3-PK3	 Roller lever valve RS-3-1/8, RS-4-1/8, ROS-3-1/8	 Roller lever valve R-3-M5, R-3-1/4-B, R-5-1/4-B, RO-3-1/4-B
Valve function	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 pilot control	Direct	Piloted	Direct
Standard nominal flow rate	80 l/min	120 l/min	80 ... 600 l/min
Pneumatic working port	PK-3	G1/8	G1/4, M5
Operating pressure	0 ... 8 bar	3.5 ... 8 bar	-0.95 ... 10 bar
Description	<ul style="list-style-type: none"> <li>• With roller lever</li> <li>• Polymer design</li> <li>• Ducted exhaust air</li> </ul>	<ul style="list-style-type: none"> <li>• With roller lever</li> <li>• Aluminium design</li> <li>• Minimal actuating force with pilot control</li> </ul>	<ul style="list-style-type: none"> <li>• With roller lever</li> <li>• Die-cast aluminium design</li> </ul>
→ Page/online	<a href="#">n_vpk</a>	<a href="#">ros-3</a>	<a href="#">ro-3</a>


## Mechanically operated directional control valves: Roller lever valves with idle return

			
Type	Roller lever valve with idle return L/O3-PK3	Roller lever valve with idle return LS-3-1/8, LS-4-1/8, LOS-3-1/8	Roller lever valve with idle return L-3-M5, L-3-1/4-B, L-4-1/4-B, LO-3-1/4-B
Valve function	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 pilot control	Direct	Piloted	Direct
Standard nominal flow rate	80 l/min	120 l/min	80 ... 600 l/min
Pneumatic working port	PK-3	G1/8	G1/4, M5
Operating pressure	0 ... 8 bar	3.5 ... 8 bar	-0.95 ... 10 bar
Description	<ul style="list-style-type: none"> <li>• With roller lever with idle return</li> <li>• Polymer design</li> <li>• Ducted exhaust air</li> </ul>	<ul style="list-style-type: none"> <li>• With toggle lever</li> <li>• Aluminium design</li> <li>• Minimal actuating force with pilot control</li> </ul>	<ul style="list-style-type: none"> <li>• With roller lever</li> <li>• Die-cast aluminium design</li> </ul>
→ Page/online	<a href="#">n_vpk</a>	<a href="#">los-3</a>	<a href="#">lo-3</a>





## Mechanically operated directional control valves: Swivel lever valves

			
Type	Swivel lever valve RW/O-3-1/8	Pneumatic limit valve RWN/O-3-1/8-B	Swivel lever valve RW3-M5
Valve function	3/2-way, monostable, open/closed	3/2-way, monostable, open/closed	3/2-way, monostable, closed
Type of pilot 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	<ul style="list-style-type: none"> <li>• Basic valve for actuator attachments such as swivel lever short, long, swivel lever rod</li> <li>• Aluminium design</li> </ul>	<ul style="list-style-type: none"> <li>• Directly actuated in one direction</li> <li>• Aluminium design</li> </ul>	<ul style="list-style-type: none"> <li>• With swivel lever</li> <li>• Sturdy die-cast zinc design</li> <li>• Various actuator attachments</li> </ul>
→ Page/online	<a href="#">RW</a>	<a href="#">rwn</a>	<a href="#">rw-3</a>



## Mechanically operated directional control valves: Whisker valves

	
Type	Whisker valve FVS-3-1/8, FVSO-3-1/8
Valve function	3/2-way, monostable, closed, 3/2-way, monostable, open
Type of pilot control	Piloted
Standard nominal flow rate	120 l/min
Pneumatic working port	G1/8
Operating pressure	3.5 ... 8 bar
Description	<ul style="list-style-type: none"> <li>• With whisker</li> <li>• For sensing dissimilar workpieces or workpieces not precisely in position</li> <li>• Aluminium design</li> <li>• Minimal actuating force with pilot control</li> </ul>
→ Page/online	<a href="#">fvs-3</a>





## Non-return valves and quick exhaust valves

Type	 Pilot non-return valve VBNF	 Quick exhaust valve VBQF	 Non-return valve H, HA, HB	 Pilot non-return valve HGL
Pneumatic port 1	QS-6, QS-8	G1/8, G1/4, QS-6, QS-8	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, M5, QS-4, QS-6, QS-8, QS-10, QS-12
Standard nominal flow rate			115 ... 2230 l/min	
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 (6-5)	260 ... 620 l/min		1000 ... 5900 l/min	130 ... 1600 l/min
Operating pressure	0.2 ... 10 bar	0.5 ... 10 bar	-1 ... 12 bar	0.5 ... 10 bar
Description	<ul style="list-style-type: none"> <li>Minimal height</li> <li>High flow rate</li> <li>Can be rotated horizontally through 360° in assembled state</li> </ul>	<ul style="list-style-type: none"> <li>Minimal height</li> <li>High flow rate</li> <li>Reduced noise emission</li> <li>Available with and without silencer</li> <li>Available with ducted or unducted exhaust air</li> </ul>	<ul style="list-style-type: none"> <li>Valve function: non-return</li> <li>Screw-in or in-line installation</li> <li>With connecting thread at both ends, push-in connector at both ends, thread/push-in connector</li> </ul>	<ul style="list-style-type: none"> <li>Valve function: pilot non-return function</li> <li>Pneumatically piloted</li> <li>Screw-in with male thread</li> <li>Pilot air connection: M5, G1/8, G1/4, G3/8, QS-4</li> </ul>
→ Page/online	<a href="#">vbnf</a>	<a href="#">vbqf</a>	<a href="#">h-qs</a>	747

## Non-return valves and quick exhaust valves

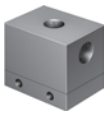



Type	 Manual override HAB	 Quick exhaust valve SE, SEU
Pneumatic port 1	G1/8, G1/4, G3/8, G1/2	G1/8, G1/4, G3/8, G1/2, G3/4
Standard nominal flow rate		
Standard flow rate exhaust 6->0 bar	165 l/min	1000 ... 6500 l/min
Standard nominal flow rate pressurisation 6->5 bar		300 ... 4560 l/min
Standard nominal flow rate 1->2 (6-5)		
Operating pressure	0 ... 10 bar	0.2 ... 10 bar
Description	<ul style="list-style-type: none"> <li>Valve function: exhaust component</li> <li>For non-return valve HGL</li> <li>For manual exhausting air trapped in a cylinder</li> </ul>	<ul style="list-style-type: none"> <li>Valve function: quick exhaust</li> <li>Shut-off valve, piloted</li> <li>Screw-in</li> <li>With or without silencer</li> </ul>
→ Page/online	<a href="#">hab</a>	<a href="#">se</a>

## Ball valves and shut-off valves

Type	 Hand slide valve VBOH	 Shut-off valve HE	 Hand slide valve W	 Ball valve QH, QHS
Valve function	3/2-way, bistable	2/2-way bistable, 3/2-way bistable	3/2-way, monostable	2/2-way, bistable
Pneumatic port 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	G1/8, G1/4, G3/8, G1/2, G3/4, M5	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	120 ... 6800 l/min	148 ... 84000 l/min
Operating pressure	-0.95 ... 12 bar	-0.95 ... 10 bar	-0.95 ... 10 bar	-1 ... 10 bar
Description	<ul style="list-style-type: none"> <li>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</li> <li>Non-overlapping, so no pressure losses when switching</li> <li>Minimal installation</li> </ul>	<ul style="list-style-type: none"> <li>Shut-off valve, manually actuated</li> <li>Connection: thread at both ends, push-in connector at both ends, thread/push-in connector</li> </ul>	<ul style="list-style-type: none"> <li>Shut-off valve, manually actuated</li> <li>In-line installation</li> <li>Metal design</li> </ul>	<ul style="list-style-type: none"> <li>Shut-off valve, manually actuated</li> <li>In-line installation, can be screwed in, bulkhead fitting</li> <li>Variants: thread at both ends, push-in connector at both ends, thread/push-in connector</li> </ul>
→ Page/online	749	751	w-3	753



## 8

## Logic valves





Type	 OR gate OS	 Amplifier module VK	 NOT module VLO	 AND module ZK
Valve function	OR function			AND function
Pneumatic port 1	G1/2, G1/4, G1/8, PK-3, PK-4	PK-4, M5	PK-4, 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	0.1 ... 0.25 bar and 1 ... 7 bar	0.1 ... 0.25 bar and 1 ... 7 bar	0.001 ... 10 bar
Description	<ul style="list-style-type: none"> <li>Valve function: OR function</li> <li>Logic valve</li> <li>Pneumatic control system</li> <li>Mounting via through-holes</li> </ul>	<ul style="list-style-type: none"> <li>For pneumatic sensors</li> </ul>	<ul style="list-style-type: none"> <li>For pneumatic sensors</li> </ul>	<ul style="list-style-type: none"> <li>Valve function: AND function</li> <li>Dual-pressure valve</li> <li>Connects two input signals in the AND function</li> <li>Mounting via through-holes</li> </ul>
→ Page/online	os	vk	vlo	zk







## Pressure regulators

		
Type	Pressure regulator LR-QS, LRMA-QS	Differential pressure regulator 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 port 1	G1/8, G1/4, M5, QS-4, QS-6, QS-8	G1/8, G1/4, G3/8, G1/2, M5
Pneumatic port 2	QS-4, QS-6, QS-8	QS-4, QS-6, QS-8, QS-10, QS-12
Description	<ul style="list-style-type: none"> <li>• Piston regulator with through pressure supply</li> <li>• Available with pressure gauge</li> <li>• Directly actuated</li> <li>• Connections: push-in connector at both ends, thread/push-in connector</li> <li>• Push-in connector can be rotated 360°</li> </ul>	<ul style="list-style-type: none"> <li>• Piston regulator with through pressure supply</li> <li>• Without pressure gauge</li> <li>• Connections: thread/push-in connector on top or at side</li> <li>• Push-in connector can be rotated 360°</li> </ul>
→ Page/online	<a href="#">lrma</a>	<a href="#">lrl</a>

## One-way flow control valves





				
Type	One-way flow control valve VFOF	One-way flow control valve VFOC	One-way flow control valve GRLA, GRLZ, CRGRLA, GRGA, GRGZ, GRLSA	One-way flow control valve GRXA-HG
Valve function	Exhaust air one-way flow control function	Supply air one-way flow control 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
Pneumatic port 1	QS-6, QS-8	QS-4, QS-6	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
Standard nominal flow rate in flow control direction	250 ... 650 l/min	0 ... 270 l/min	0 ... 4320 l/min	130 ... 280 l/min
Adjusting element	Internal hex	Slotted head screw	Internal hex, knurled screw, slotted head screw	Slotted head screw
Description	<ul style="list-style-type: none"> <li>• Minimal height</li> <li>• High flow rate</li> <li>• Can be rotated horizontally through 360° in assembled state</li> <li>• Functional combination with one-way flow control valve and piloted non-return valve</li> </ul>	<ul style="list-style-type: none"> <li>• Shut-off valve, flow control at one end</li> <li>• Metal design</li> <li>• Precision adjustment for low and medium speeds</li> <li>• Push-in connector/push-in sleeve</li> </ul>	<ul style="list-style-type: none"> <li>• Flow control valve, flow control at one end</li> <li>• Polymer, metal or stainless steel design</li> <li>• Standard, mini, in-line variants with different flow rates</li> <li>• Functional combination with one-way flow control valve and piloted non-return valve</li> <li>• Connections: thread at both ends, push-in connector at both ends, thread/push-in connector</li> </ul>	<ul style="list-style-type: none"> <li>• Functional combination of one-way flow control valve and piloted non-return valve</li> <li>• Holding function and speed setting in one housing</li> <li>• Additional supply port for holding crossover connection</li> </ul>
→ Page/online	<a href="#">757</a>	<a href="#">vfoc</a>	<a href="#">757</a>	<a href="#">grxa-hg</a>

## One-way flow control valves



				
Type	One-way flow control valve GR, GRA	One-way flow control valve GG, GGO, GRR	Precision one-way flow control valve GRP	One-way flow control valve, 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 port 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	<ul style="list-style-type: none"> <li>• Non-return and flow control valve</li> <li>• In-line installation</li> </ul>	<ul style="list-style-type: none"> <li>• Non-return and flow control valves</li> <li>• With roller lever</li> </ul>	<ul style="list-style-type: none"> <li>• Non-return and flow control valve</li> <li>• Mounting on sub-base or for front panel mounting</li> </ul>	<ul style="list-style-type: none"> <li>• Complete system offering control components with all the functions required for pneumatic sequence controls</li> <li>• For control cabinet installation</li> <li>• Fast replacement of components</li> </ul>
→ Page/online	757	<a href="#">85</a>	<a href="#">grp</a>	<a href="#">m5 compact</a>

## 8



## Flow control valves

				
Type	Flow control/silencer VFFK	Flow control valve GRLO, GRGO	Flow control valve, barbed Y-connector with restrictor GRO, Y	Precision flow control valve GRPO
Valve function	Flow control silencer function	Flow control function	Flow control function	Flow control function
Pneumatic port 1	M5, M7, R1/8, R1/4	M3, M5	G1/4, G1/8, M5, QS-3, QS-4, QS-6	G1/8, PK-3, PK-4
Standard flow rate in flow control direction 6 → 0 bar	0 ... 420 l/min	33 ... 169 l/min	25 ... 350 l/min	5.2 ... 129 l/min
Adjusting element	Knurled screw	Slotted head screw	Knurled screw	Rotary knob with scale
Description	<ul style="list-style-type: none"> <li>• With polymer silencer</li> </ul>	<ul style="list-style-type: none"> <li>• Flow control valve, flow control at both ends</li> <li>• Standard or mini flow control valve</li> <li>• Metal design</li> <li>• Precision adjustment for low and medium speeds</li> <li>• Connections: thread at both ends, thread/push-in connector</li> <li>• Connections: elbow outlet or parallel outlet</li> </ul>	<ul style="list-style-type: none"> <li>• Flow control valve, flow control at both ends</li> <li>• In-line flow control valve</li> <li>• Polymer design</li> <li>• Connections: push-in connector at both ends</li> <li>• Connections: in-line, Y-shape</li> </ul>	<ul style="list-style-type: none"> <li>• Metal design</li> <li>• Connections: threaded connection at both ends, push-in connector at both ends</li> </ul>
→ Page/online	766	<a href="#">grlo</a>	<a href="#">gro</a>	<a href="#">grpo</a>





## Flow control valves

		
Type	Exhaust air flow control valve, flow control/silencer GRE, GRU	Fixed restrictor VMPA1-FT
Valve function	Flow control silencer function	Flow control function
Pneumatic port 1	G1/8, G1/4, G1/2, G3/8, G3/4	E-box
Standard flow rate in flow control direction 6 → 0 bar	0 ... 8000 l/min	3.5 ... 115 l/min
Adjusting element	Slotted head screw	
Description	<ul style="list-style-type: none"> <li>Exhaust air flow control valve GRE: sintered metal</li> <li>Flow control/silencer GRU: polymer</li> </ul>	<ul style="list-style-type: none"> <li>For valve terminal MPA-L</li> <li>Hollow bolt, for restricting the exhaust air</li> <li>Width 10 mm</li> </ul>
→ Page/online	<a href="#">gre</a>	<a href="#">vmpa1</a>




## Time delay valves

		
Type	Time delay valve, M5 compact product range VZO, VZ, VLK	Time delay valve, supplementary product range VZA, VZOA, VZB, VZOB
Pneumatic port	PK-3	G1/4
Standard nominal flow rate	60 ... 90 l/min	600 l/min
Adjustable delay time	0.25 ... 5 s	0 ... 30 s
Operating pressure	2.5 ... 8 bar	0 ... 10 bar
Type of mounting	Optional: front panel mounting, on mounting frame	Optional: 2 through-holes in housing, front panel mounting
Description	<ul style="list-style-type: none"> <li>Complete system offering control components with all the functions required for pneumatic sequence controls</li> <li>For control cabinet installation</li> <li>Fast replacement of components</li> </ul>	<ul style="list-style-type: none"> <li>Time delay infinitely adjustable</li> </ul>
→ Page/online	<a href="#">m5 compact</a>	<a href="#">vza</a>

## Proportional valves





				
Type	Proportional pressure regulator VPPX	Proportional pressure regulator VPPM	Proportional directional control valve VPWP	Proportional pressure regulator MPPE
Valve function	3-way proportional pressure regulator	3-way proportional pressure regulator	5/3-way proportional regulator, closed	3-way proportional pressure regulator, closed
Pneumatic port 1	Sub-base, G1/8, G1/4, G1/2,	Sub-base, G1/8, G1/4, G1/2, NPT1/8-27, NPT1/4-18, NPT1/2-14	G1/4, G1/8, G3/8	G1/8, G1/4, G1/2
Pressure regulation range	0.1 ... 10 bar	0.02 ... 10 bar	0 ... 10 bar	0 ... 10 bar
Standard nominal flow rate	1400 ... 7000 l/min	380 ... 7000 l/min	350 ... 2000 l/min	350 ... 8800 l/min
Description	<ul style="list-style-type: none"> <li>Pressure regulator with additional sensor input</li> <li>Multi-sensor control (cascade control)</li> <li>Control characteristic adjustable via FCT software</li> <li>Integrated pressure sensor with separate output</li> <li>Pressure is maintained if the controller fails</li> </ul>	<ul style="list-style-type: none"> <li>Pilot actuated pressure regulating valve</li> <li>Multi-sensor control (cascade control)</li> <li>Integration in valve terminal MPA</li> <li>User interface with LED displays, LCD display, adjustment/selection buttons</li> <li>Integrated pressure sensor</li> <li>Electrical connection via plug, round design, 8-pin, M12 or terminal linking</li> </ul>	<ul style="list-style-type: none"> <li>Digital actuation</li> <li>Integrated pressure sensors for monitoring function and force control</li> <li>Auto-identification</li> <li>Integrated digital output, e.g. for a clamping/brake unit</li> <li>Suitable for servopneumatic applications with CPX-CMAX and CPX-CMPX</li> </ul>	<ul style="list-style-type: none"> <li>Pilot actuated pressure regulating valve</li> <li>Setpoint value input as analogue voltage or current signal</li> <li>Choice of pressure regulation ranges</li> <li>Optionally with setpoint module</li> <li>Electrical connection via plug, round design to DIN 45326, M16 x 0.75, 8-pin</li> </ul>
→ Page/online	<a href="#">vppx</a>	<a href="#">768</a>	<a href="#">vpwp</a>	<a href="#">mppe</a>

## Proportional valves



			
Type	Proportional pressure regulator MPPE	Proportional pressure regulator VPPE	Proportional directional control valve MPYE
Valve function	3-way proportional pressure regulator, closed	3-way proportional pressure regulator, 3-way proportional pressure regulator, closed	5/3-way, closed
Pneumatic connection 1	G1/8, G1/4, G1/2	G1/8	G1/8, G1/4, G3/8, M5
Pressure regulation range	0 ... 10 bar	0.02 ... 10 bar	0 ... 10 bar
Standard nominal flow rate	230 ... 8500 l/min	310 ... 1250 l/min	100 ... 2000 l/min
Description	<ul style="list-style-type: none"> <li>• Directly actuated (G1/8), pilot actuated (G1/4, G1/2)</li> <li>• Setpoint value input as analogue voltage or current signal</li> <li>• Choice of pressure regulation ranges</li> <li>• Optionally with setpoint module</li> <li>• Electrical connection via plug, round design to DIN 45326, M16 x 0.75, 8-pin</li> </ul>	<ul style="list-style-type: none"> <li>• Pilot actuated pressure regulating valve</li> <li>• Setpoint input as analogue voltage signal (0 ... 10 V)</li> <li>• Electrical connection via M12x1 plug, 4-pin</li> <li>• Optionally with setpoint module</li> </ul>	<ul style="list-style-type: none"> <li>• Regulated piston spool valve</li> <li>• Setpoint input as analogue voltage signal (0 ... 10 V)</li> <li>• Suitable for servopneumatic applications with SPC11</li> </ul>
→ Page/online	<a href="#">mppes</a>	<a href="#">vppe</a>	<a href="#">mpye</a>

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## Solenoid-actuated process and media valves

				
Type	Solenoid valve VZWD	Reverse jet pulse valve VZWE-E, VZWE-F	Solenoid valve VZWF	Solenoid valve VZWM
Design	Directly actuated poppet valve	Angled version, straight version with flange, diaphragm valve	Diaphragm valve, force pilot operated	Poppet valve with diaphragm seal
Type of actuation	Electric	Electric	Electric	electrical
Nominal width	1 ... 6 mm	20 ... 76 mm	13.5 ... 50 mm	13 ... 50 mm
Process valve connection	G1/8, G1/4, NPT1/4, NPT1/8	G3/4, G1, G11/2, G2, G21/2, flange diameter 60 mm, 75 mm, 89 mm	G1/4, G3/8, G1/2, G3/4, G1, G11/4, G11/2, G2	G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2
Flow rate Kv	0.06 ... 0.4 m³/h	15 ... 210 m³/h	1.8 ... 28 m³/h	1.6 ... 39 m³/h
Medium pressure	0 ... 90 bar	0.35 ... 8 bar	0 ... 10 bar	0.5 ... 10 bar
Temperature of medium	-10 ... 80 °C	-20 ... 60 °C	-10 ... 80 °C	-10 ... 60 °C
Description	<ul style="list-style-type: none"> <li>• High pressure range</li> <li>• Directly actuated poppet valve</li> <li>• No pressure difference required</li> <li>• Can also be used in vacuum technology</li> </ul>	<ul style="list-style-type: none"> <li>• High flow rates</li> <li>• For mechanically cleaning filters and dust filter systems</li> <li>• Fast opening and closing times</li> <li>• Sturdy pilot system</li> </ul>	<ul style="list-style-type: none"> <li>• High flow rates</li> <li>• Large nominal diameters with relatively small solenoids</li> <li>• No pressure difference required</li> <li>• Can also be used in vacuum technology</li> </ul>	<ul style="list-style-type: none"> <li>• Poppet valve with diaphragm seal</li> <li>• Brass or stainless steel casting design</li> <li>• Electrical connection via solenoid armature tube</li> <li>• Wide range of coils</li> <li>• Coil can be ordered separately</li> </ul>
→ Page/online	<a href="#">vzwd</a>	<a href="#">vzwe</a>	<a href="#">vzwf</a>	<a href="#">vzwm</a>




## Solenoid-actuated process and media valves

Type	 Solenoid valve VZWP	 Solenoid valve MN1H2
<b>Design</b>	Piloted piston poppet valve	Diaphragm valve
<b>Type of actuation</b>	Electric	Electric
<b>Nominal width</b>	13 ... 25 mm	13 ... 40 mm
<b>Process valve connection</b>	G1/4, G3/8, G1/2, G3/4, G1	G1/4, G3/8, G1/2, G3/4, G1, G1 1/2
<b>Flow rate Kv</b>	1.5 ... 11.5 m <sup>3</sup> /h	2000 ... 30500 l/min
<b>Medium pressure</b>	0.5 ... 40 bar	0.5 ... 10 bar
<b>Temperature of medium</b>	-10 ... 80 °C	-10 ... 60 °C
<b>Description</b>	<ul style="list-style-type: none"> <li>For all applications with a differential pressure of min. 0.5 bar</li> <li>For high pressures and high flow rates with relatively small solenoids</li> <li>For controlling gaseous and liquid media in open circuits</li> </ul>	<ul style="list-style-type: none"> <li>Pilot operated diaphragm valve</li> <li>Brass design</li> <li>Can only be used for gaseous media</li> <li>Adjustable closing cushioning, in-line mounting or through-hole</li> </ul>
<b>→ Page/online</b>	<a href="#">vzwp</a>	<a href="#">mn1h2</a>

## Pneumatically and mechanically actuated process and media valves



Type	 Proportional media valve VZQA	 Angle seat valve VZXF	 Ball valve VZBC	 Ball valve actuator unit VZBC
<b>Design</b>	Pinch valve, pneumatically actuated	Poppet valve with spring return	2-way ball valve	2-way ball valve, quarter turn actuator
<b>Type of actuation</b>	Pneumatic	Pneumatic	Mechanical	Pneumatic
<b>Nominal width</b>	DN 6, 15	12 ... 45 mm	15, 20, 25, 32, 40, 50, 65, 80, 100	15, 20, 25, 32, 40, 50, 65, 80, 100
<b>Process valve connection</b>	Clamp to ASME-BPE, clamp to DIN 32676, G1, G1/2, G1/4, NPT1/2, NPT1/4	G1/2, G3/4, G1, G1 1/4, G1 1/2, G2, NPT1, NPT1 1/2, NPT1 1/4, NPT1/2, NPT2, NPT3/4	Ring housing with threaded flange	Ring housing with threaded flange
<b>Flow rate Kv</b>	0.7 ... 5 m <sup>3</sup> /h	3.3 ... 43 m <sup>3</sup> /h	19.4 ... 1414 m <sup>3</sup> /h	19.4 ... 1414 m <sup>3</sup> /h
<b>Medium pressure</b>	0 ... 6 bar	-0.9 bar, 0 ... 40 bar		6 ... 8.4 bar
<b>Temperature of medium</b>	-5 ... 100 °C	-40 ... 200 °C	-10 ... 200 °C	-10 ... 200 °C
<b>Description</b>	<ul style="list-style-type: none"> <li>Modular design</li> <li>Quick and easy replacement of the diaphragm</li> <li>Selection of different materials for housing and connector caps</li> <li>Different connection cap designs (G and NPT thread), clamp ferrule to DIN 32676 and ASME-BPE</li> <li>For critical, abrasive and viscous media</li> <li>Up to 2 million switching cycles</li> <li>FDA-compliant materials</li> <li>Easy-to-clean design</li> <li>Safety position "opening"</li> <li>Flow direction is freely selectable</li> </ul>	<ul style="list-style-type: none"> <li>Sturdy design</li> <li>Stainless steel and gunmetal process valves with stainless steel, brass or aluminium drives</li> <li>For operating pressures up to 40 bar</li> <li>Safety position "closing"</li> <li>Different actuator sizes and housing materials</li> <li>Selection of different seat and shaft seals</li> <li>Flow direction is freely selectable</li> <li>For liquids, gases and other easily contaminated media</li> <li>Easy-to-clean design</li> </ul>	<ul style="list-style-type: none"> <li>Automatable 2-way ball valve with compact flange</li> <li>Stainless steel design</li> <li>Short installed length</li> <li>Blow-out proof shaft</li> <li>Manual operation possible using hand lever</li> <li>Connecting thread to DIN 2999 or DIN ISO 228-1</li> <li>Mounting flange to ISO 5211</li> <li>ATEX certification for Zone 1, 21, 2, 22</li> </ul>	<ul style="list-style-type: none"> <li>Ball valve actuator unit with double-acting or single-acting quarter turn actuator</li> <li>Stainless steel ball valve in compact design</li> <li>Port pattern as per NAMUR for solenoid valves/sensor boxes to VDI/VDE 3845</li> <li>Flow is fully opened or closed in both directions</li> <li>ATEX certification for Zone 1, 21, 2, 22</li> </ul>
<b>→ Page/online</b>	<a href="#">vzqa</a>	<a href="#">vzxf</a>	<a href="#">vzbc</a>	<a href="#">vzbc</a>

## Pneumatically and mechanically actuated process and media valves




Type	 Ball valve VAPB	 Ball valve VZBA	 Ball valve actuator unit VZBA
<b>Design</b>	2-way ball valve	2-way ball valve, 3-way ball valve, L-shaped hole, T-shaped hole	2-way ball valve, 3-way ball valve, L-shaped hole, semi-rotary actuator, T-shaped hole
<b>Type of actuation</b>	Mechanical	Mechanical	Pneumatic
<b>Nominal width</b>	15, 20, 25, 32, 40, 50, 63	8, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100	8, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100
<b>Process valve connection</b>	Rp1/4, Rp3/8, Rp1, Rp1 1/4, Rp1 1/2, Rp1/2, Rp3/4, Rp2, Rp2 1/2	Rp1/4, Rp3/8, Rp1/2, Rp3/4, Rp1, Rp1 1/4, Rp1 1/2, Rp2, Rp2 1/2, Rp3, Rp4, weld-on ends/weld-on ends	Rp1, Rp1 1/2, Rp1 1/4, Rp1/2, Rp1/4, Rp2, Rp2 1/2, Rp3, Rp3/4, Rp3/8, Rp4, weld-on ends/weld-on ends
<b>Flow rate Kv</b>	5.9 ... 535 m³/h	7 ... 1414 m³/h	7 ... 1,414 m³/h
<b>Medium pressure</b>			6 ... 8.4 bar
<b>Temperature of medium</b>	-10 ... 150 °C	-10 ... 200 °C	-10 ... 200 °C
<b>Description</b>	<ul style="list-style-type: none"> <li>• Automatable 2-way ball valve</li> <li>• Brass design</li> <li>• Blow-out proof shaft</li> <li>• Manual operation possible using hand lever</li> <li>• Connecting thread to DIN 2999 or DIN ISO 228-1</li> <li>• Mounting flange to ISO 5211</li> </ul>	<ul style="list-style-type: none"> <li>• Automatable 2-way or 3-way ball valve</li> <li>• Stainless steel design</li> <li>• Blow-out proof shaft</li> <li>• Manual operation possible using hand lever</li> <li>• Connecting thread to DIN 2999 or DIN ISO 228-1</li> <li>• Mounting flange to ISO 5211</li> <li>• ATEX certification for Zone 1, 21, 2, 22</li> </ul>	<ul style="list-style-type: none"> <li>• Ball valve actuator unit with double-acting or single-acting quarter turn actuator</li> <li>• Stainless steel ball valve</li> <li>• Port pattern as per NAMUR for solenoid valves/sensor boxes to VDI/VDE 3845</li> <li>• Flow is fully opened or closed in both directions</li> <li>• ATEX certification for Zone 1, 21, 2, 22</li> </ul>
<b>→ Page/online</b>	<a href="#">vapb</a>	<a href="#">vzba</a>	<a href="#">vzba</a>

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## Pneumatically and mechanically actuated process and media valves

Type	 Ball valve actuator unit VZPR	 Pneumatic valve VLX
<b>Design</b>	2-way ball valve, quarter turn actuator	Diaphragm valve
<b>Type of actuation</b>	Electric, pneumatic	Pneumatic
<b>Nominal width</b>	15, 20, 25, 32, 40, 50, 63	13 ... 25 mm
<b>Process valve connection</b>	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
<b>Flow rate Kv</b>	5.9 ... 535 m³/h	2400 ... 14000 l/min
<b>Medium pressure</b>	1 ... 8.4 bar	1 ... 10 bar
<b>Temperature of medium</b>	-20 ... 150 °C	-10 ... 80 °C
<b>Description</b>	<ul style="list-style-type: none"> <li>• Ball valve actuator unit with double-acting quarter turn actuator</li> <li>• Brass ball valve</li> <li>• Port pattern to NAMUR for solenoid valves/sensor boxes conforming to VDI/VDE 3845</li> <li>• Flow is fully opened or closed in both directions</li> </ul>	<ul style="list-style-type: none"> <li>• Poppet valve</li> <li>• Indirectly actuated</li> <li>• Brass design</li> <li>• In-line mounting or via through-holes</li> </ul>
<b>→ Page/online</b>	<a href="#">vzpr</a>	<a href="#">vlx</a>

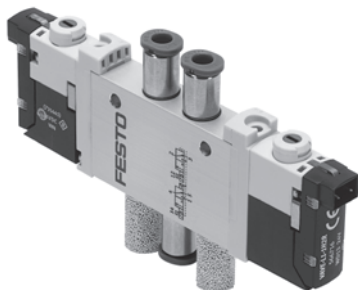
## Pneumatic control systems

			
Type	Quickstepper FSS	Two-hand control block ZSB	Adding counter, 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 port	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	<ul style="list-style-type: none"> <li>• Pneumatic/mechanical sequencer with 12 steps and linked to start</li> <li>• Ready-to-install sequence controller</li> <li>• Acknowledgement-controlled motion sequences</li> <li>• Fast replacement, tubing can be left in place</li> </ul>	<ul style="list-style-type: none"> <li>• Used wherever manual actuation poses a risk of accident to operating personnel</li> <li>• Safety component in accordance with EU Machinery Directive</li> </ul>	<ul style="list-style-type: none"> <li>• Complete system offering control components with all the functions required for pneumatic sequence controls</li> <li>• For control cabinet installation</li> <li>• Fast replacement of components</li> <li>• Available with protective cap</li> </ul>
→ Page/online	<a href="#">fss</a>	<a href="#">zsb</a>	<a href="#">pza</a>

## Pneumatic control systems

		
Type	Timer, M5 compact system PZVT, PZVT-S, PZVT-FR, PZVT-AUT	Adding counter CCES
Design	Mechanical sequence counter with pneumatic drive	Electric adding counter with battery
Pneumatic port	Female thread M5	
Operating pressure	2 ... 6 bar	
Type of mounting	Front panel mounting	Front panel mounting
Description	<ul style="list-style-type: none"> <li>• Complete system offering control components with all the functions required for pneumatic sequence controls</li> <li>• For control cabinet installation</li> <li>• Fast replacement of components</li> <li>• Mechanical sequence counter with pneumatic drive</li> <li>• Adjustable delay time</li> <li>• Available with protective cap</li> </ul>	<ul style="list-style-type: none"> <li>• 8-digit LCD display</li> <li>• Independent power supply</li> <li>• Connection via terminal strip</li> <li>• Reset button</li> </ul>
→ Page/online	<a href="#">pzvt</a>	<a href="#">cces</a>

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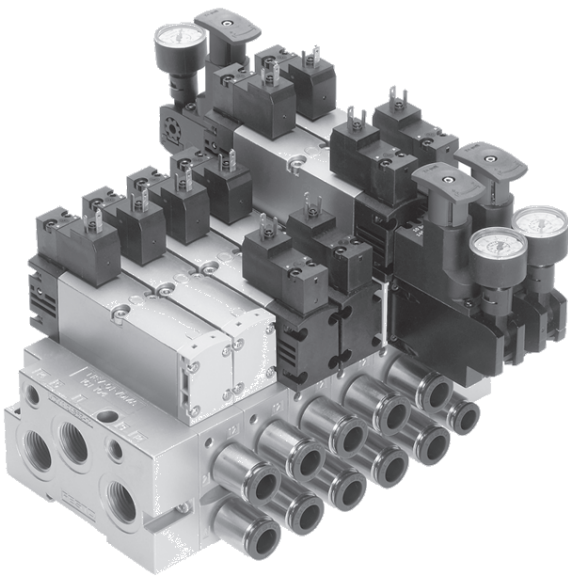


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Electrically and pneumatically actuated directional control valves  
Standard directional control valves

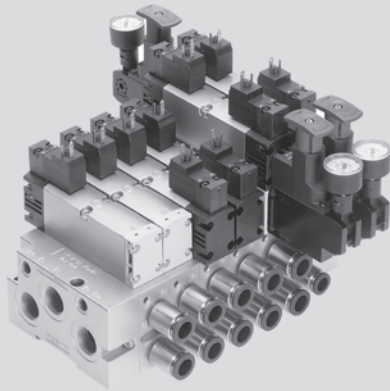
Solenoid/Pneumatic valves to ISO 15407-1

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- + Interface with pilot valve ISO 15218
- + High-performance valves in a sturdy metal housing
- + Manifold assembly with mixed sizes possible
- + Wide range of vertical stacking modules: pressure regulator plate, flow control plate, vertical pressure shut-off plate, etc.





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  - Manifold assembly with mixed sizes possible
  - Electrical connection via round or square plug socket
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→ [www.festo.com/catalogue/vsva](http://www.festo.com/catalogue/vsva)

## Product range overview

Type	Actuation type	Valve function	qnN [l/min]		Pilot air supply	→ Page/ online
			Width 18 mm	Width 26 mm		
VSVA-B-T22	Solenoid coil	2x2/2-way valve, normally closed	500	1000	Internal/external	<a href="#">vsva</a>
VSVA-B-T32	Pilot interface to ISO 15218	2x3/2-way valve, normally closed	400	900	Internal/external	661
		2x3/2-way valve, normally open				
	2x3/2-way valve, normally closed/open					
VSVA-B-M52	Plug M12 24 V DC	5/2-way valve, single solenoid	550	1100	Internal/external	661
VSVA-B-B52		5/2-way valve, double-solenoid	550	1100	Internal/external	662
VSVA-B-D52		5/2-way valve, double-solenoid	550	1100	Internal/external	<a href="#">vsva</a>
VSVA-B-P53C	Round central plug M8/M12 24 V DC	5/3-way valve, normally closed	450	1000	Internal/external	662
VSVA-B-P53U		5/3-way valve, normally open	450	1000	Internal/external	<a href="#">vsva</a>
VSVA-B-P53E		5/3-way valve, normally exhausted	450	1000	Internal/external	<a href="#">vsva</a>
VSPA-B-T32	Pneumatic	2x3/2-way valve, normally closed	400	900	-	668
		2x3/2-way valve, normally open				
		2x3/2-way valve, normally closed/open				
VSPA-B-M52		5/2-way valve, single solenoid	550	1100		668
VSPA-B-B52		5/2-way valve, bistable	550	1100		669
VSPA-B-D52		5/2-way valve, double-solenoid	550	1100		<a href="#">vsva</a>
VSPA-B-P53C		5/3-way valve, normally closed	450	1000		669
VSPA-B-P53U		5/3-way valve, normally open	450	1000		<a href="#">vsva</a>
VSPA-B-P53E		5/3-way valve, normally exhausted	450	1000		<a href="#">vsva</a>

# Solenoid/pneumatic valves, to ISO 15407-1

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## Data sheet – Solenoid valves

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

Technical data									
Width		18 mm				26 mm			
Valve function		2x3/2-way monostable	5/2-way monostable	5/2-way bistable	5/3-way closed	2x3/2-way monostable	5/2-way monostable	5/2-way bistable	5/3-way closed
Sub-base	1, 2, 3, 4, 5	G1/8				G1/4			
Pilot air	12, 14	M5				M5			
Design		Piston spool valve							
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		With plug socket to IP65							
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		With plug socket to IP65							

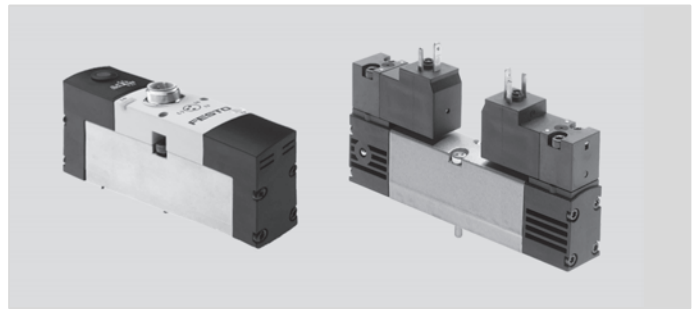
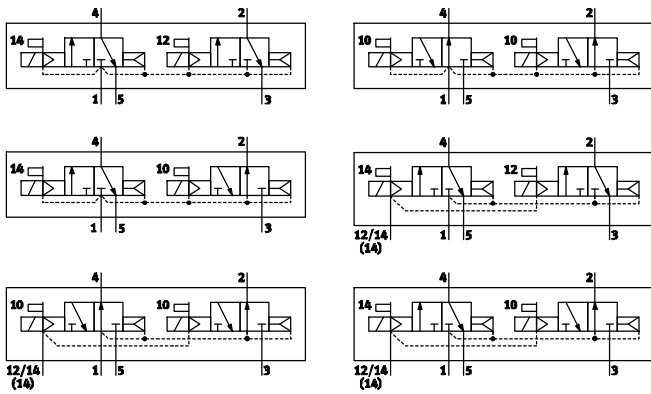
### Operating conditions

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

### Materials

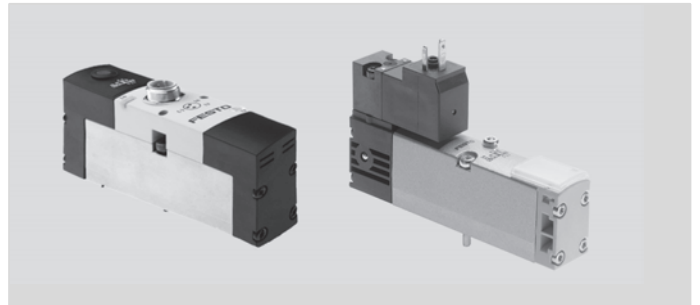
Housing		Die-cast aluminium
Seals		NBR
Screws		Galvanised steel

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



Technical data		Plug M8x1, M12x1		Plug type C	
		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
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		2 ... 10	
	External pilot air supply [bar]	3 ... 10		2 ... 10	
Pilot pressure [bar]		3 ... 8		3 ... 10	
Standard nominal flow rate qnN [l/min]		400	900	400	900
Switching time on/off	Non-reversible types [ms]	10/22	20/33	13/21	20/28
	Reversible types [ms]	–	–	21/13	28/20
Length/width/height [mm]		108/18/57	113/27/67	108/18/63	114/27/72

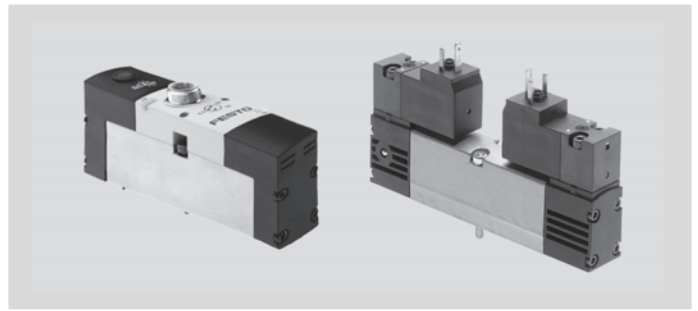
## Data sheet – 5/2-way valves, single-solenoid



Technical data		Plug M8x1, M12x1		Plug type C	
		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
Electrical connection		Plug M8x1, M12x1		Plug type C	
Width		18 mm	26 mm	18 mm	26 mm
Reset method		Mechanical	Pneumatic	Mechanical	Pneumatic
Operating pressure	Internal pilot air supply [bar]	3 ... 8		3 ... 10	2 ... 10
	External pilot air supply [bar]	–0.9 ... +10		–0.9 ... +10	
Pilot pressure [bar]		3 ... 8		3 ... 10	
Standard nominal flow rate qnN [l/min]		550		1100	
Switching time on/off [ms]		12/34	20/25	20/52	25/40
Length/width/height [mm]		108/18/57	113/27/67	96/18/63	114/27/72

# Solenoid/pneumatic valves, to ISO 15407-1

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



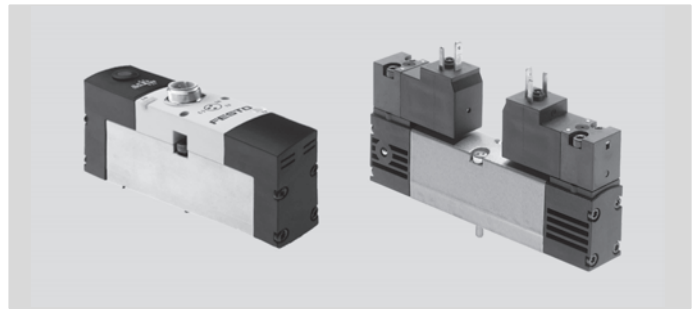
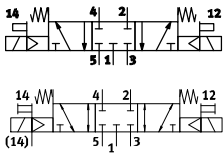
### Technical data

Electrical connection	Plug M8x1, M12x1		Plug type C	
	18 mm	26 mm	18 mm	26 mm
Operating pressure	Internal pilot air supply [bar]	3 ... 8	3 ... 8	2 ... 10
	External pilot air supply [bar]	-0.9 ... +10	-0.9 ... +16	-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

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

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## Technical data – 5/3-way solenoid valves, normally closed



### Technical data

Electrical connection	Plug M8x1, M12x1		Plug type C	
	18 mm	26 mm	18 mm	26 mm
Operating pressure	Internal pilot air supply [bar]	3 ... 8	3 ... 8	3 ... 10
	External pilot air supply [bar]	-0.9 ... +10	-0.9 ... +16	-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

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

## Order code – Solenoid valves

VSVA		B																	
<b>Type</b>																			
VSVA		Solenoid valve to ISO 15407-1																	
<b>Version</b>																			
B		Sub-base valve																	
<b>Valve function</b>																			
T32C		2x 3/2-way valve, single solenoid, normally closed																	
T32U		2x 3/2-way valve, single solenoid, normally open																	
T32H		2x 3/2-way valve, single solenoid, 1x normally closed, 1x open																	
M52		5/2-way valve, single solenoid																	
B52		5/2-way valve, double solenoid																	
P53C		5/3-way valve, normally closed																	
<b>Reset method for single solenoid directional control valves</b>																			
–		Double solenoid and 5/3-way valve																	
A		Pneumatic spring																	
M		Mechanical spring <span style="border: 1px solid black; padding: 0 2px;">1</span>																	
<b>Pilot air supply port</b>																			
–		Internal																	
Z		External																	
<b>Manual override</b>																			
–		Without pilot valve																	
H		Non-detenting																	
<b>Pneumatic port</b>																			
A1		Port pattern ISO size 26 mm (01)																	
A2		Port pattern ISO size 18 mm (02)																	
<b>Operating voltage</b>																			
–		Without pilot valve																	
1		24 V DC																	
1A		24 V AC <span style="border: 1px solid black; padding: 0 2px;">2</span>																	
2 A		110 V AC <span style="border: 1px solid black; padding: 0 2px;">2</span>																	
3 A		230 V AC <span style="border: 1px solid black; padding: 0 2px;">2</span>																	
<b>Electrical connection</b>																			
P1		Without pilot valve																	
C1		Plug, type C																	
R2L		Plug, M8x1																	
R5L		Plug, M12x1																	

1 Only for 5/2-way valves2 Only for plug type C**Order example:**

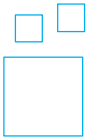
VSVA-B-T32H-AZH-A1-1R5L

Solenoid valve VSVA to ISO 15407-1 – sub-base valve - 2x 3/2-way valve, single solenoid, 1x normally closed, 1x open – pneumatic spring reset method, external pilot air supply, non-detenting manual override – ISO size 26 mm (01) - 24 V DC, plug M12x1, with LED display

## Solenoid/pneumatic valves, to ISO 15407-1

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## 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/...](http://www.festo.com/catalogue/...)



Enter the type code in the search field.

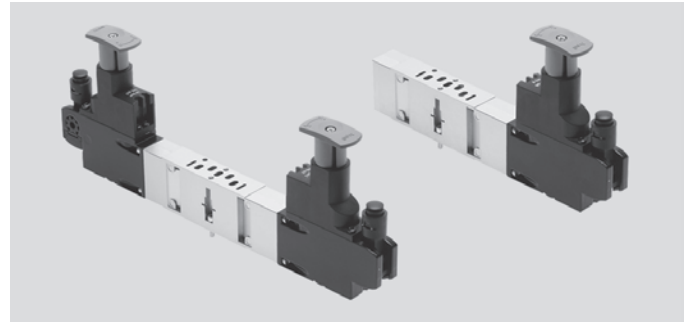
★ Quick ordering<sup>1)</sup>

		Part no.	Type
<b>5/2-way single solenoid valve, ISO size 18 mm</b>			
Without pilot valve	Mechanical spring	546742	VSVA-B-M52-M-A2-P1
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
<b>5/2-way double solenoid valve, ISO size 18 mm</b>			
Without pilot valves		546736	VSVA-B-B52-A2-P1
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
<b>5/2-way single solenoid valve, ISO size 26 mm</b>			
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
<b>5/2-way double solenoid valve, ISO size 26 mm</b>			
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
<b>5/3-way solenoid valve, ISO size 26 mm</b>			
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	-	
<b>Type</b>									
VABF-S3	Valve accessories, function plate to ISO 15407-1								
<b>Width</b>									
1	26 mm								
2	18 mm								
<b>Function</b>									
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, reverse operation								
R6	Pressure regulator for port 2, reverse operation								
R7	Pressure regulator for port 4, reverse operation								
<b>Options</b>									
C2-C	Pressure gauge connection closed								
<b>Pressure regulation range</b>									
6	Up to 6 bar								
10	Up to 10 bar								

8

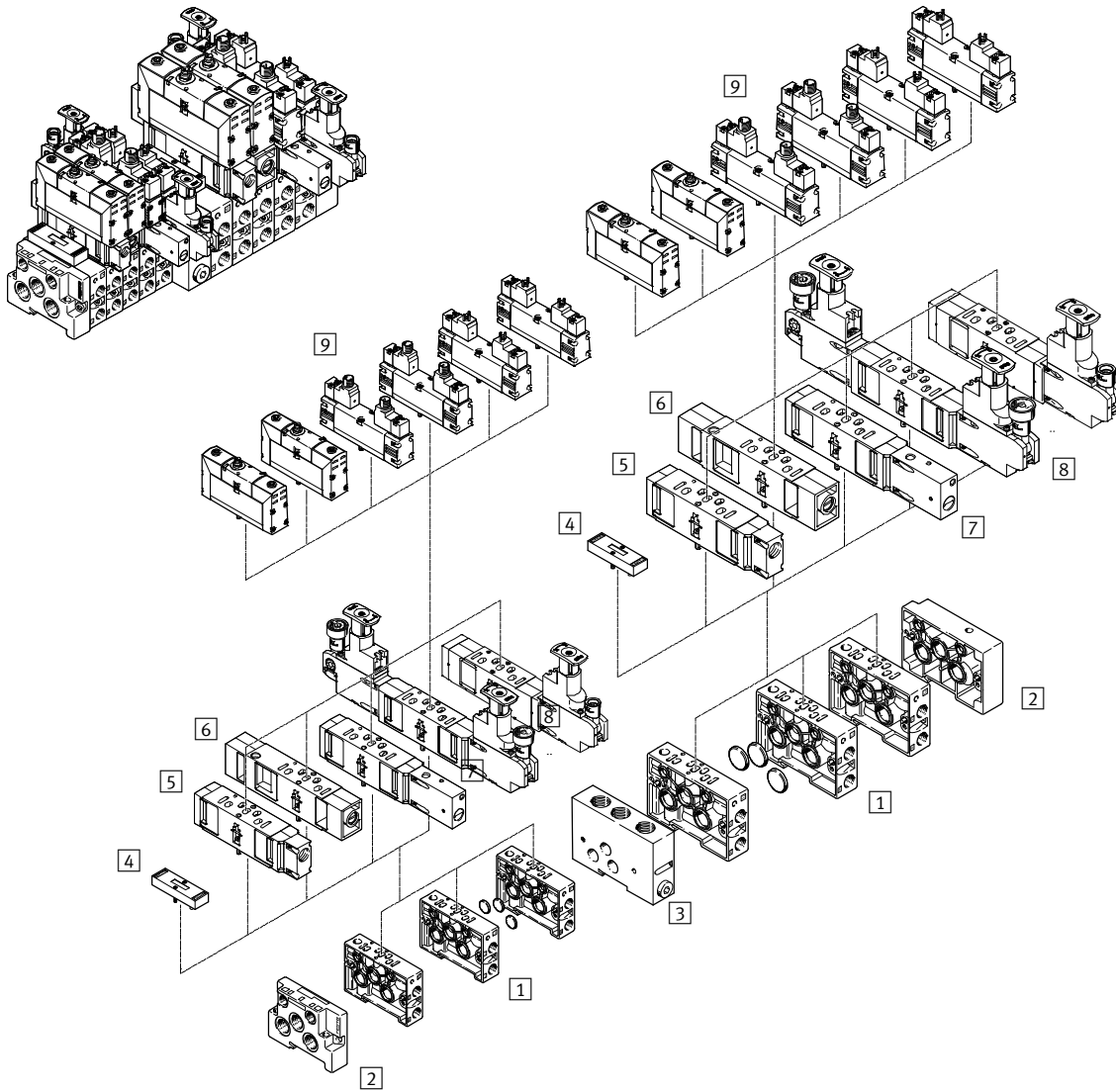
Order example:

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

# Solenoid/pneumatic valves, to ISO 15407-1

## Accessories – Manifold assembly of solenoid valves

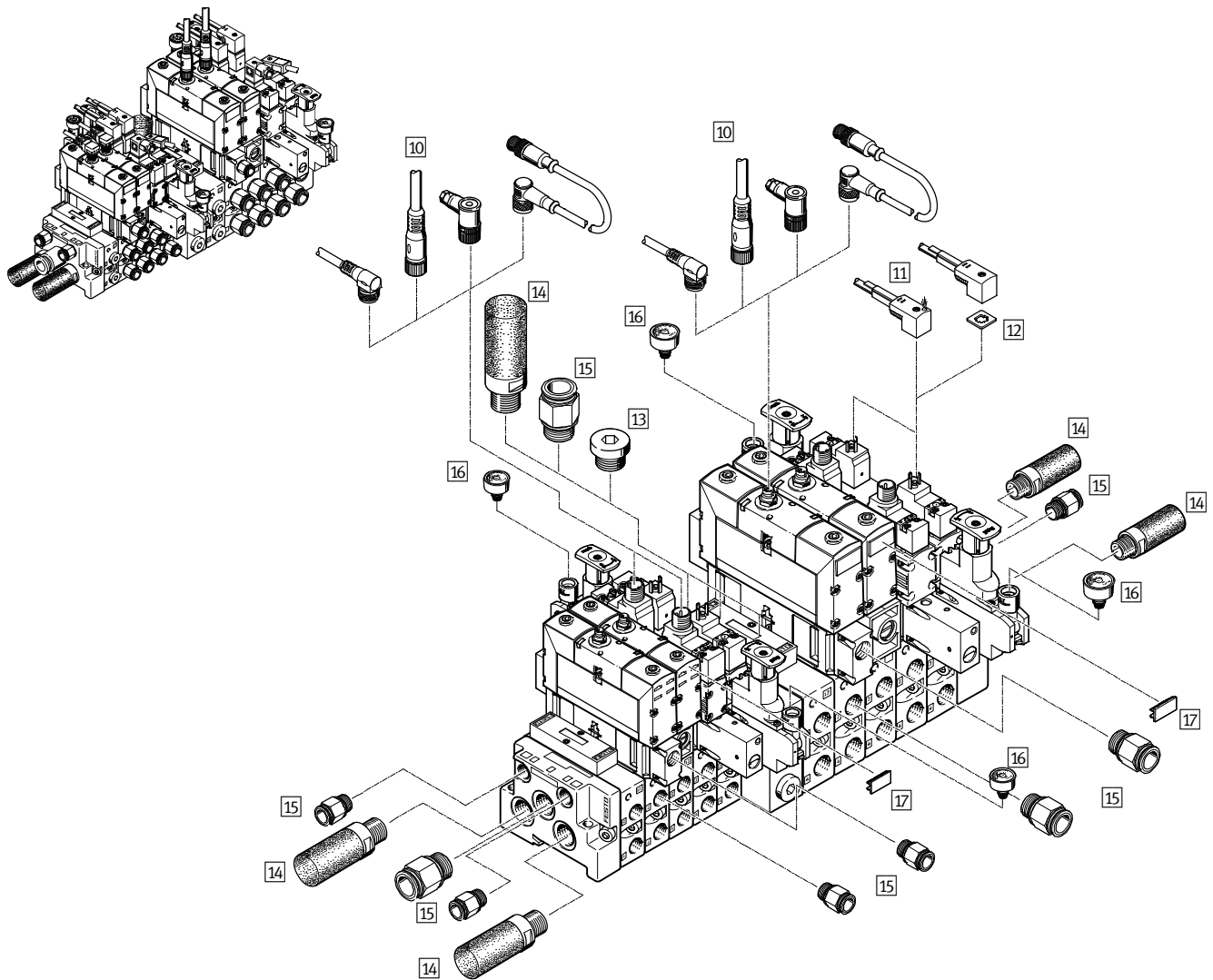


8

Variants and accessories		→ Page/online
1	Manifold sub-base NAW with lateral ports 2 and 4	673
2	End plate kit NEV for sealing the manifold sub-bases	673
3	Intermediate plate NZV for connecting width 18 mm with width 26 mm	673
4	Blanking plate NDV for vacant or spare positions	673
5	Vertical supply plate VABF...P1-A3 for intermediate air supply	673
6	Flow control plate VABF...F1-B1 for flow control in ducts 3 and 5	673
7	Vertical pressure shut-off plate VABF...L1-D1 with switch for manual shut-off of duct 1	673
8	Pressure regulator plate VABF...R...-C2	665
9	Solenoid valve VSVA	664
-	Individual sub-base NAS	674



## Accessories – Manifold assembly of solenoid valves



Accessories	→ Page/online
10 Round plug connector NEBU/SEA, connecting cable/plug socket M8/M12	673
11 Square plug KMEB/MSSD-EB, type C, connecting cable/plug socket	674
12 Illuminating seal MEB-LD for displaying the signal status	674
13 Blanking plug B for sealing unused ports	674
14 Silencer U for mounting in exhaust ports	674
15 Push-in fitting QS for compressed air tubing with standard O.D.	674
16 Pressure gauge PAGN-26-10-P10 for connection to the pressure regulator plate	674
17 Inscription labels IBS-9x20 for identifying the valves VSVA with round plug	673
– Individual sub-base NAS	674

# Solenoid/pneumatic valves, ISO 15407-1

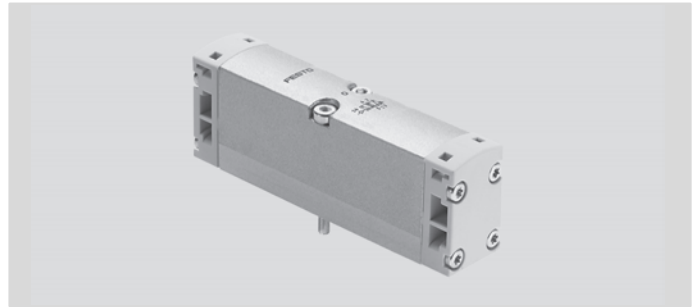
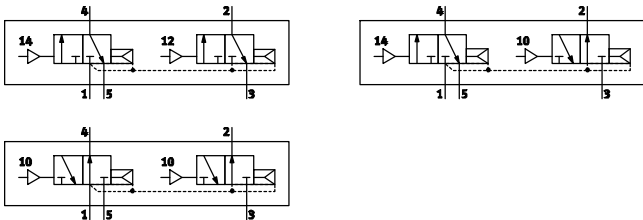
## Data sheet – Pneumatic valves

Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>							
Width		18 mm				26 mm			
Valve function		2x3/2-way monostable	5/2-way monostable	5/2-way bistable	5/3-way closed	2x3/2-way monostable	5/2-way monostable	5/2-way 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 operating/pilot medium		Operation with lubricated medium 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

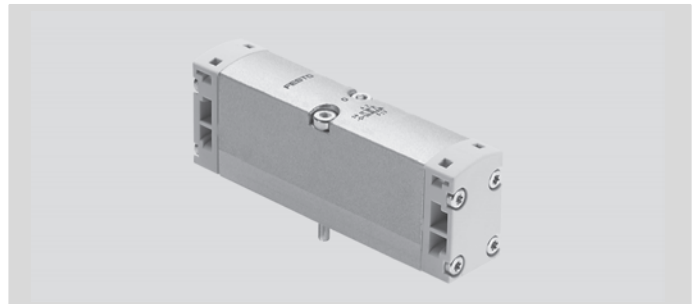
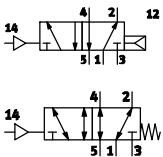
## Data sheet – 2x 3/2-way pneumatic valves

8



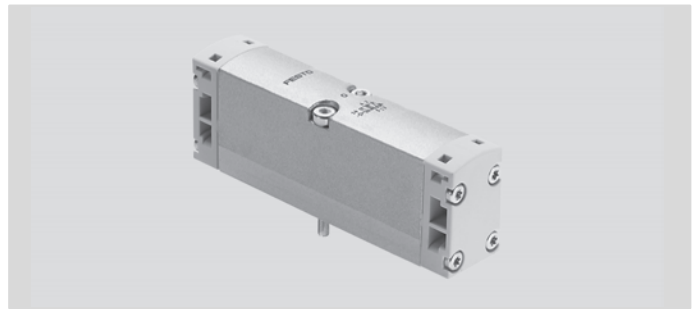
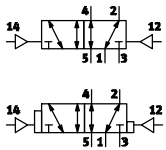
Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Width		18 mm	26 mm
Operating pressure	[bar]	2 ... 10	2 ... 10
Pilot pressure	[bar]	2 ... 10	2 ... 10
Standard nominal flow rate qnN	[l/min]	400	900
Switching time on/off	[ms]	10/15	15/28
Design		Piston spool valve	
Length/width/height	[mm]	83/18/29	100/26/38

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



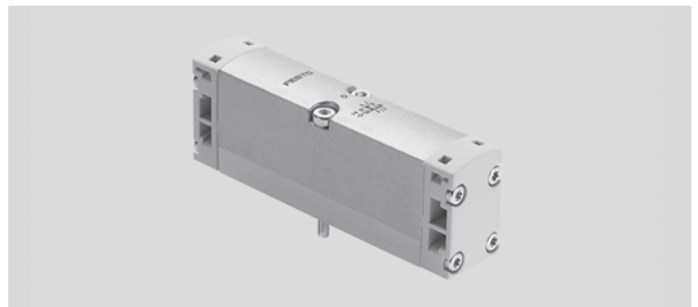
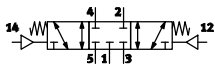
Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
Width		18 mm		26 mm	
Reset method		Mechanical	Pneumatic	Mechanical	Pneumatic
Operating pressure	[bar]	-0.9 ... +10	2 ... 10	-0.9 ... +16	2 ... 10
Pilot pressure	[bar]	3 ... 10	2 ... 10	3 ... 10	2 ... 10
Standard nominal flow rate qnN	[l/min]	550		1100	
Switching time on/off	[ms]	8/18	11/20	10/35	18/30
Design		Piston spool valve			
Length/width/height	[mm]	83/18/29		100/26/38	

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



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Width		18 mm	26 mm
Operating pressure	[bar]	-0.9 ... +10	-0.9 ... +16
Pilot pressure	[bar]	2 ... 10	3 ... 10
Standard nominal flow rate q <sub>N</sub>	[l/min]	550	1100
Changeover time	[ms]	6	10
Design		Piston spool valve	
Length/width/height	[mm]	83/18/29	100/26/38

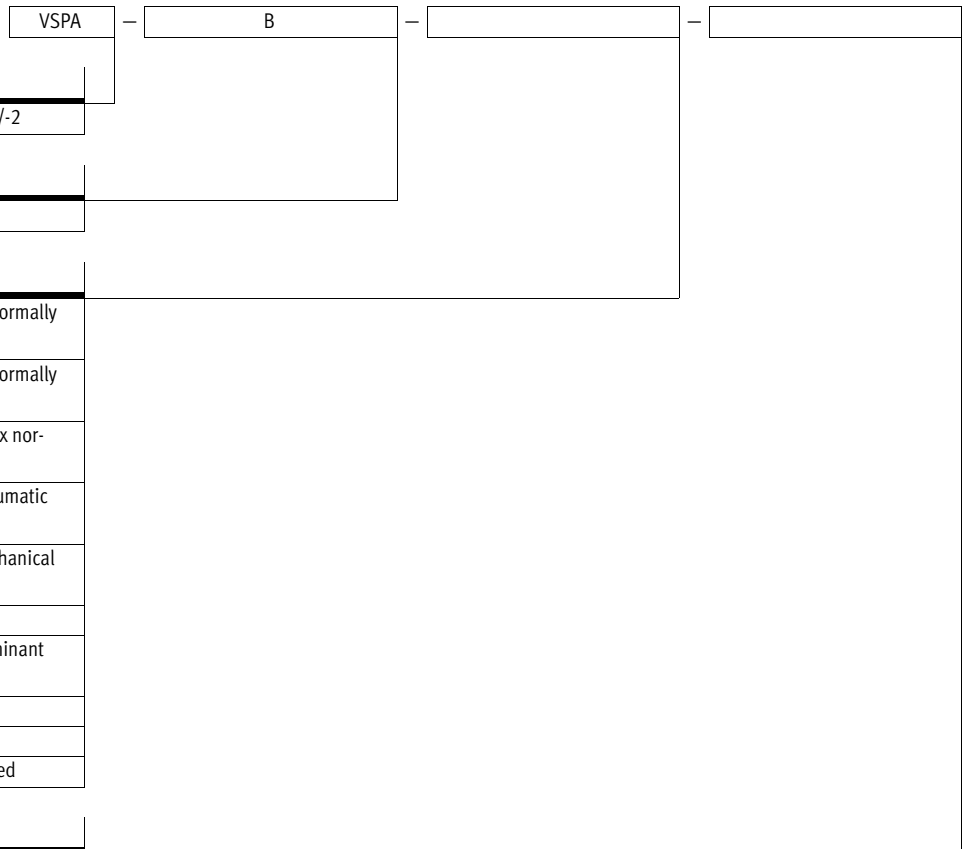
**Data sheet – 5/3-way pneumatic valves, normally closed**



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
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 <sub>N</sub>	[l/min]	450	1000
Switching time on/off	[ms]	9/18	13/32
Design		Piston spool valve	
Length/width/height	[mm]	83/18/29	100/26/38

# Solenoid/pneumatic valves, ISO 15407-1

## Order code – Pneumatic valve



Type	
VSPA	Standard 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
D52	5/2-way valve, bistable with dominant signal at 14
P53C	5/3-way valve, normally closed
P53U	5/3-way valve, normally open
P53E	5/3-way valve, normally exhausted

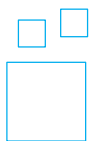
Pneumatic port	
A1	Port pattern, ISO size 26 mm (01)
A2	Port pattern, ISO size 18 mm (02)

### Order example:

VSPA-B-T32C-A2

Standard 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



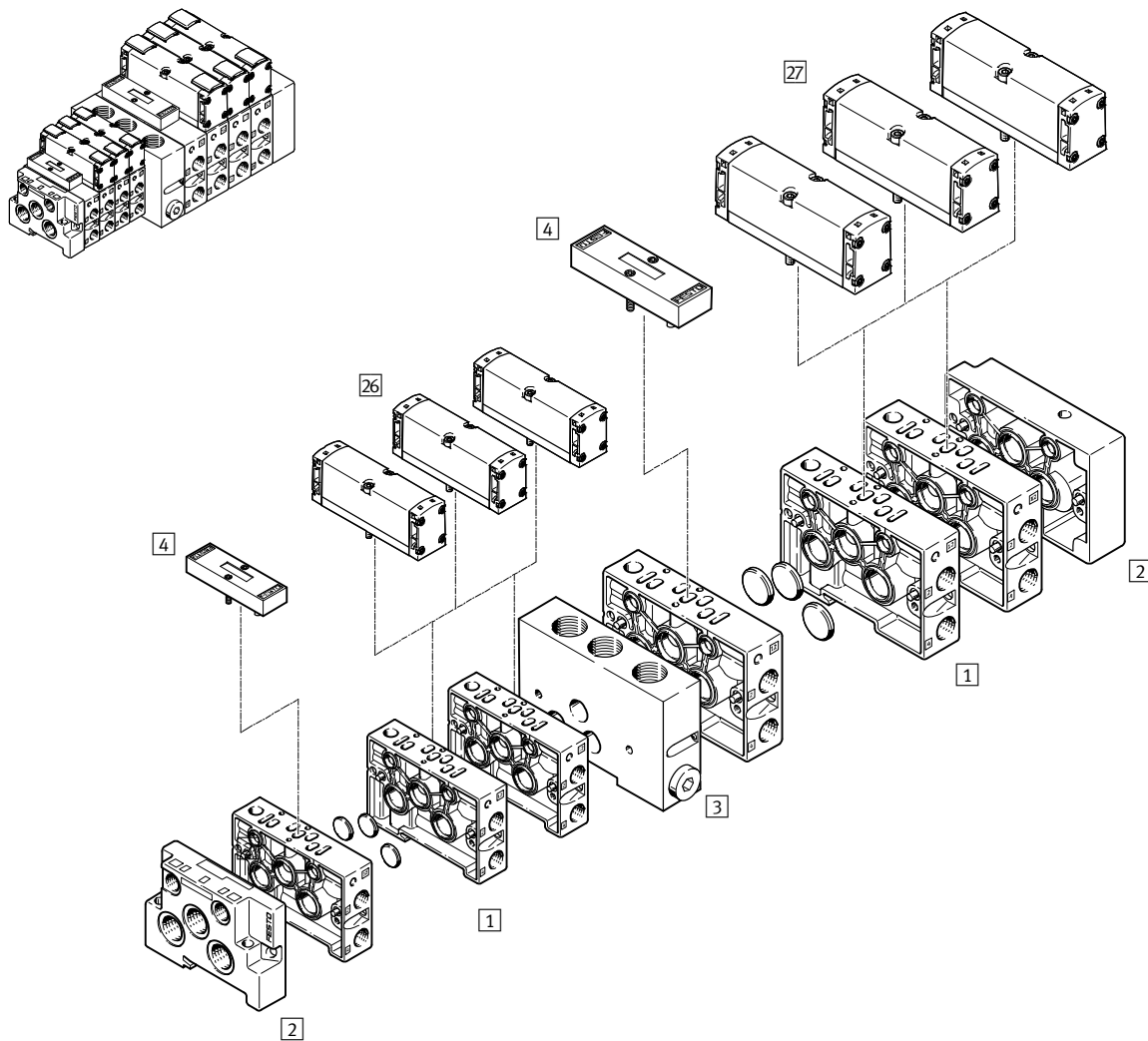
**Configurable product**

**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/...](http://www.festo.com/catalogue/...)

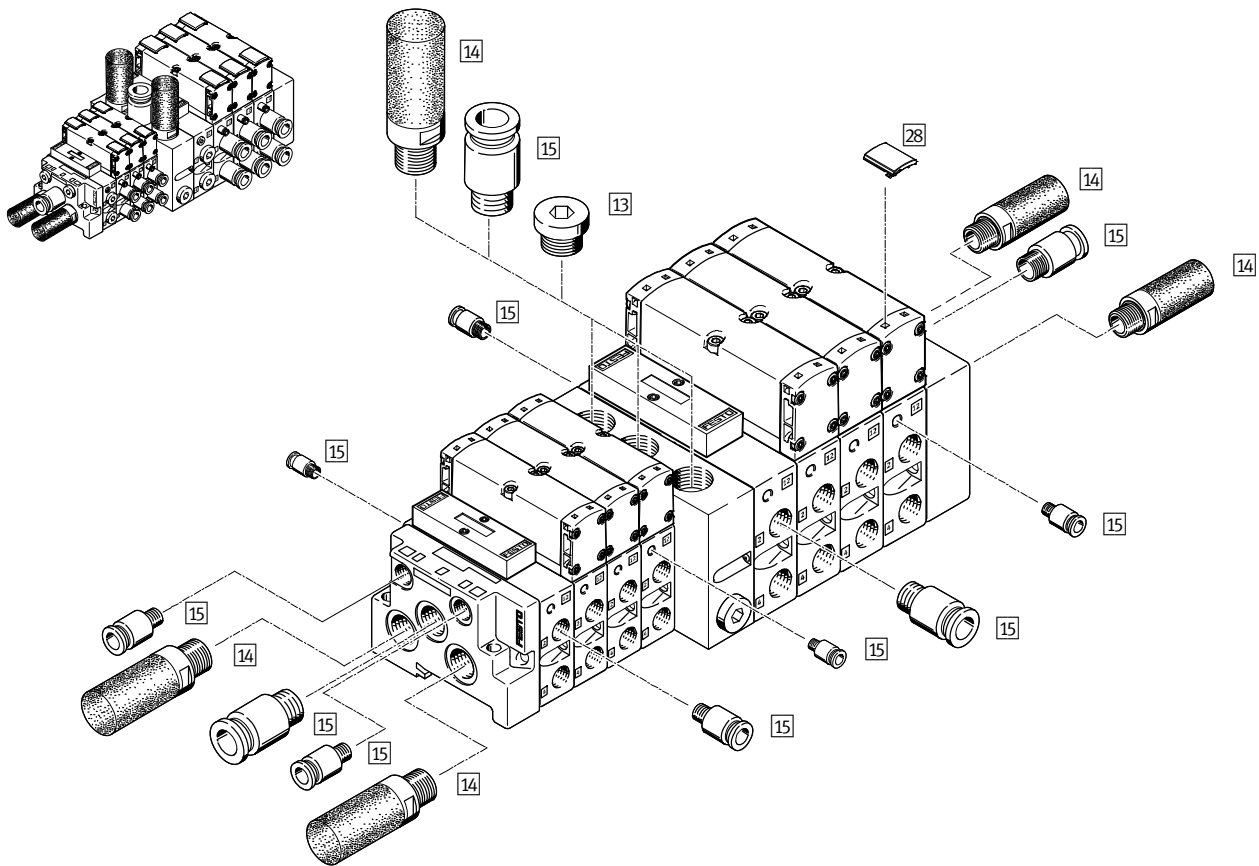
Enter the type code in the search field.

## Accessories – Manifold assembly of pneumatic valves



Variants and accessories		→ Page/online
1	Manifold sub-base NAW with lateral ports 2 and 4	673
2	End plate kit NEV for sealing the manifold sub-bases	673
3	Intermediate plate NZV for connecting width 18 mm with width 26 mm	673
4	Blanking plate NDV for vacant or spare positions	673
26	Pneumatic valve VSPA...A2, width 18 mm	663
27	Pneumatic valve VSPA...A1, width 26 mm	663
-	Individual sub-base NAS	674

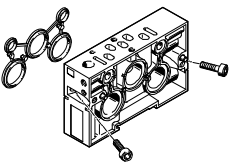
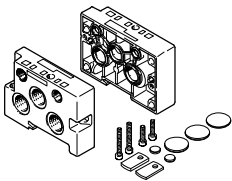
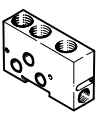
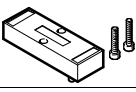
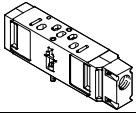
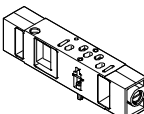
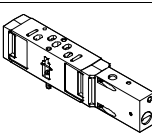
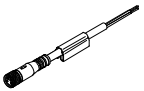
Accessories – Manifold assembly of pneumatic valves



8

Accessories	→ Page/online
13 Blanking plug B for sealing unused ports	674
14 Silencer U for fitting in exhaust ports	674
15 Push-in fitting QS for compressed air tubing with standard O.D.	674
28 Inscription label holder ASCF for identifying the valves	674
– Individual sub-base NAS	674

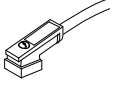







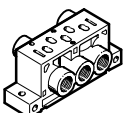
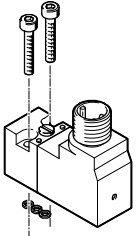
## Accessories – Ordering data

	Description		Part no.	Type	
<b>1 Manifold sub-base with lateral ports 2 and 4</b>					
	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	
<b>2 End plate kit</b>					
	Width 18 mm		★ 161112	NEV-02-VDMA	
	Width 26 mm		★ 161104	NEV-01-VDMA	
<b>3 Intermediate plate for connecting the sizes 02 and 01</b>					
	Width 18/26 mm		161108	NZV-01/02-VDMA	
<b>4 Blanking plate for vacant position</b>					
	Width 18 mm		★ 161114	NDV-02-VDMA	
	Width 26 mm		★ 161107	NDV-01-VDMA	
<b>5 Vertical supply plate</b>					
	Width 18 mm		544435	VABF-S3-2-P1A3-G18	
	Width 26 mm		544434	VABF-S3-1-P1A3-G14	
<b>6 Flow control plate</b>					
	Width 18 mm		543603	VABF-S3-2-F1B1-C	
	Width 26 mm		543604	VABF-S3-1-F1B1-C	
<b>7 Vertical pressure shut-off plate</b>					
	Width 18 mm		543601	VABF-S3-2-L1D1-C	
	Width 26 mm		543602	VABF-S3-1-L1D1-C	
<b>10 Round plug connector</b> <span style="float: right;">Technical data → 1161</span>					
	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
Plug socket M12, angled socket, 4-pin, screw terminal			185498	SEA-M12-4WD-PG7	

## Solenoid/pneumatic valves, ISO 15407-1

FESTO

## Accessories – Ordering data

Description		Part no.	Type		
<b>11 Square plug type C</b>		Technical data online: → <a href="#">kmeb</a>			
	Connecting cable	24 V DC, with LED	2.5 m	174844	KMEB-2-24-2,5-LED
			5 m	174845	KMEB-2-24-5-LED
	Plug socket	Up to 230 V AC, without LED	2.5 m	174846	KMEB-2-230-2,5
			5 m	174847	KMEB-2-230-5
			Screw terminal connection		151687
	Insulation displacement connection		192745	MSSD-EB-S-M14	
<b>12 Illuminating seal for plug type C</b>					
	12 ... 24 V DC	151717	MEB-LD-12-24DC		
	230 V AC	151718	MEB-LD-230AC		
<b>13 Blanking plug</b>		Technical data online: → <a href="#">b-1</a>			
	For thread G1/8	3568	B-1/8		
	For thread G3/8	3570	B-3/8		
	For thread G1/2	3571	B-1/2		
<b>14 Silencer</b>		Technical data → 1237			
	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		
<b>15 Push-in fitting</b>		Technical data → 1098			
	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		
<b>16 Pressure gauge</b>		Technical data online: → <a href="#">pagn</a>			
	With cartridge fitting connection for regulator, 0 ... 16 bar	543487	PAGN-26-16-P10		
<b>17 Inscription label for valves</b>					
	Scope of delivery 24 labels in frame	18182	IBS-9x20		
<b>28 Inscription label holder</b>					
	Clip-on for valve cap	540888	ASCF-T-S6		
<b>Individual sub-base</b>					
	Width 18 mm	★ 161115	NAS-1/8-02-VDMA		
	Width 26 mm	★ 161109	NAS-1/4-01-VDMA		
<b>Pilot valve to ISO 15218</b>		Technical data online: → <a href="#">vscs</a>			
	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	





Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/5599-1](http://www.festo.com/catalogue/5599-1)

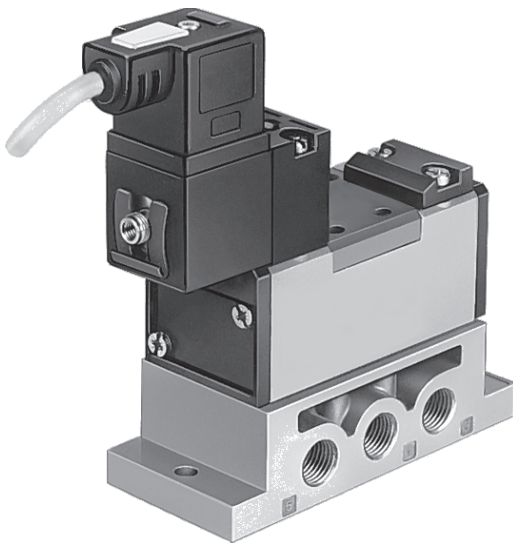


Additional information/Support/User documentation  
→ [www.festo.com/sp/5599-1](http://www.festo.com/sp/5599-1)

Electrically and pneumatically actuated directional control valves  
Standard directional control valves

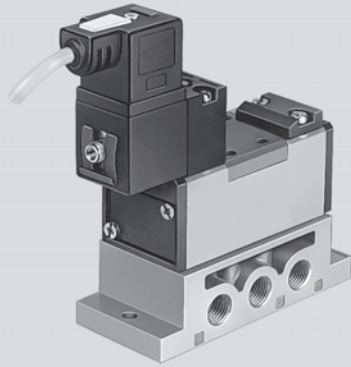
Solenoid valves to ISO 5599-1

# MN1H, VSVA



- + Sturdy metal design
- + ISO size 1, 2, 3 and 4
- + 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 plate, flow control plate, vertical pressure shut-off plate, etc.
- + Also available as a valve terminal

# Solenoid valves, ISO 5599-1



- Standard valve width 42/54/65/76 mm, flow rates up to 6000 l/min
- Manifold assembly with mixed sizes possible
- Electrical connection via square plug socket, round plug socket or versatile F coil
- Wide range of stacked valve assemblies: pressure regulator plate, flow control plate, vertical pressure shut-off plate, etc.
- ★ Quick ordering of basic designs → 684

→ [www.festo.com/catalogue/5599-1](http://www.festo.com/catalogue/5599-1)

## Product range overview

Type	Actuation type	Valve function	qnN [l/min]				Pilot air supply	→ Page/online		
			Width							
			42 mm	52 mm	65 mm	76 mm				
MN1H-5/2	N1 solenoid coil <sup>1)</sup> 12, 24 V DC 24, 110, 230 V AC	5/2-way valve, single solenoid	1200	2300	4500	-	Internal/ external	678		
JMN1H-5/2		5/2-way valve, double-solenoid			4500			678		
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			678		
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	1200	2300	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	-	-		680		
VSVA-B-T32U		2x 3/2-way valve, 2x normally open								
VSVA-B-T32H		2x 3/2-way valve, 1x normally open, 1x normally closed								
VSVA-B-M52		5/2-way valve, single solenoid	1300	2800	-	-		681		
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				682		
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	686
JMFH-5/2			5/2-way valve, double-solenoid			4500				687
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			687				
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					
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					

1) The solenoid coil must be ordered separately.

## Product range overview

Type	Actuation type	Valve function	qnN [l/min]				Pilot air supply	→ Page/ online
			Width					
			42 mm	52 mm	65 mm	76 mm		
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						
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						
VL-5/3B		5/3-way valve, normally open						
VL-5/3E		5/3-way valve, normally exhausted						

## Data sheet – MN1H/JMN1H

Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>					
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					
<b>Electrical data – N1 solenoid coil</b>							
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

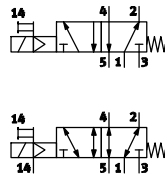
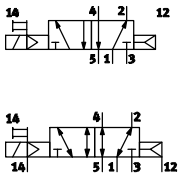
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Ambient temperature	[°C]	–5 ... +50
Temperature of medium	[°C]	–5 ... +50

## Materials

Housing	Die-cast aluminium
Seals	HNBR, NBR

# Solenoid valves, ISO 5599-1

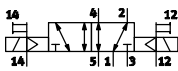
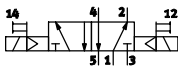
## Data sheet – 5/2-way valve MN1H, single solenoid



Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
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	2 ... 10
Standard nominal flow rate	qnN	[l/min]	1200		2300	
Switching time	On/off	[ms]	17/39	23/32	24/62	46/69
Design			Piston spool valve			
Length/width/height		[mm]	128/42/74	118/42/74	162/54/84	148/54/84

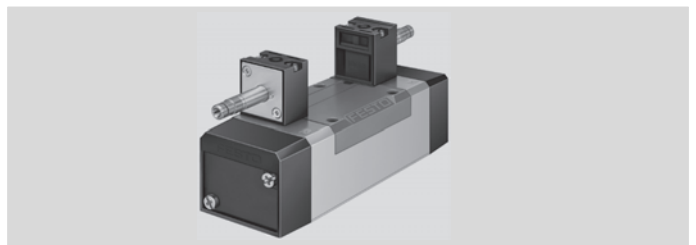
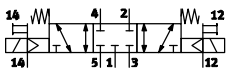
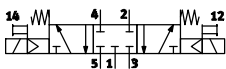
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## Data sheet – 5/2-way valve JMN1H, double solenoid



Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
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	Changeover	[ms]	18		21	
Design			Piston spool valve			
Length/width/height		[mm]	148/42/74		165/54/84	

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



Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
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 valve			
Length/width/height		[mm]	148/42/74		165/54/84	

## Order code – MN1H/JMN1H

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

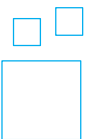
<sup>1</sup> Only for 5/2-way valves, single solenoid

**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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

# Solenoid valves, ISO 5599-1

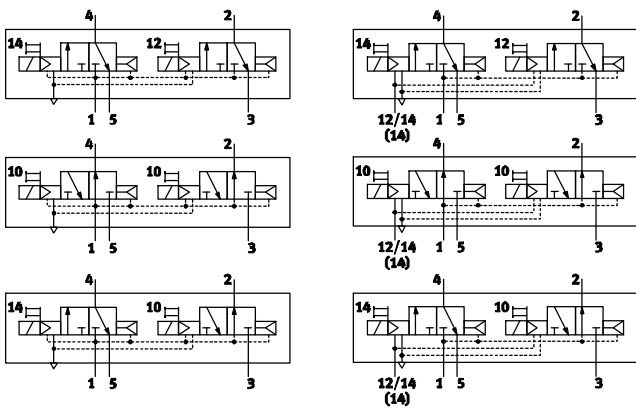
## Data sheet – VSVA

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

Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Operation with lubricated medium 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

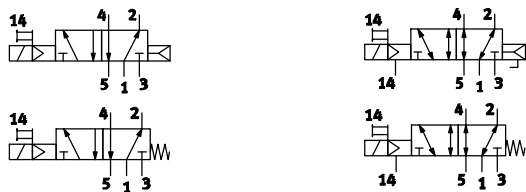
## Technical data – 2x 3/2-way valve VSVA



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
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 <sup>1)</sup>		[bar]	3 ... 10
Standard nominal flow rate	qnN	[l/min]	1100
Switching time	On/off	[ms]	20/38
Design		Piston spool valve	
Length/width/height		[mm]	138/42/59
			160/52/60

1) Minimum pilot pressure 50% of operating pressure

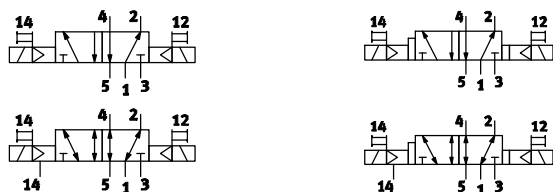
## Technical data – 5/2-way valve VSVA, single solenoid



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
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 <sup>1)</sup>		[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 valve		Piston spool valve	
Length/width/height		[mm]	138/42/59		160/52/60

1) Minimum pilot pressure 50% of operating pressure

## Technical data – 5/2-way valve VSVA, double solenoid

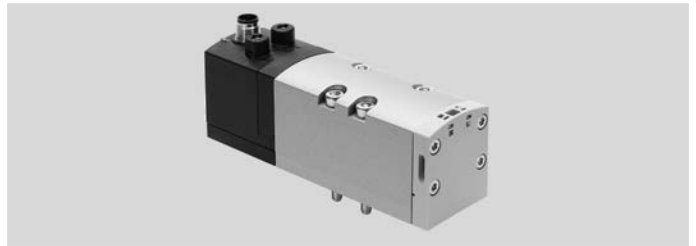
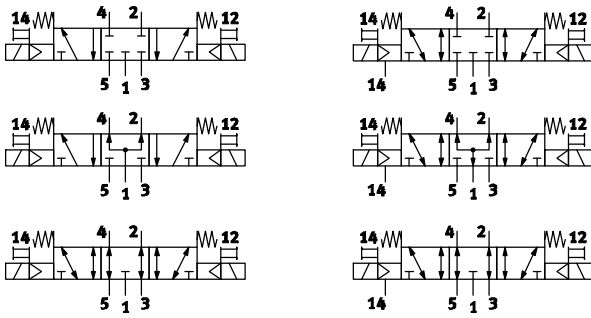


Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
Width		42 mm		52 mm	
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	3 ... 10	
	External pilot air supply	[bar]	-0.9 ... +16	-0.9 ... +16	
Pilot pressure <sup>1)</sup>		[bar]	3 ... 10	3 ... 10	
Standard 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 valve		Piston spool valve	
Length/width/height		[mm]	138/42/59		160/52/60

1) Minimum pilot pressure 50% of operating pressure

# Solenoid valves, to ISO 5599-1

## Technical data – 5/3-way valve VSVA



Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
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 <sup>1)</sup>		[bar]	3 ... 10	3 ... 10
Standard nominal flow rate	qnN	[l/min]	1300	2700
Switching time	On/off	[ms]	22/65	23/60
Design			Piston spool valve	Piston spool valve
Length/width/height		[mm]	138/42/59	160/52/60

1) Minimum pilot pressure 50% of operating pressure



## Order code – 2x 3/2-way valves VSVA

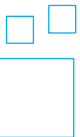
VSVA		–	B	–	T	32	–	A	D	–	1	R5	L
<b>Valve series</b>													
VSVA	Standard valve, ISO 5599-1												
<b>Valve type</b>													
B	Sub-base valve												
<b>Valve function</b>													
T	2 single solenoid valves in one housing												
<b>Ports/switching positions</b>										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

## Order example:

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

Standard 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

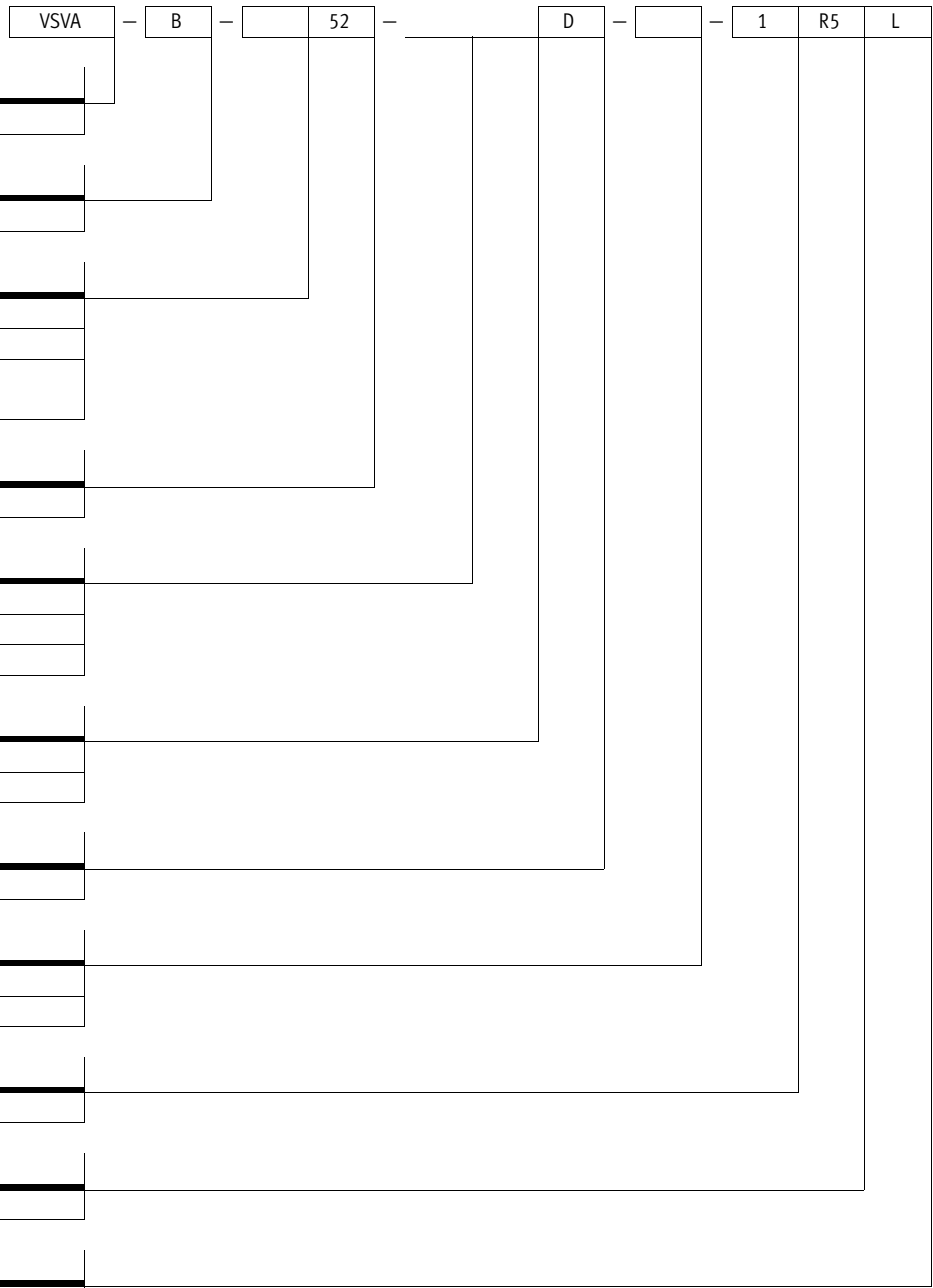
This product and all its options can be ordered using the configurator.

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

Enter the type code in the search field.

# Solenoid valves, to ISO 5599-1

## Order code – 5/2-way valves VSVA



8

### Order example:

VSVA-B-B52-D-D1-1R5L

Standard 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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

### ★ Quick ordering<sup>1)</sup>

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

<sup>1)</sup> All products in this table are easy to select and quick to order.

## Order code – 5/3-way valves VSVA

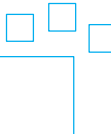
VSVA		B		P		53		D		1		R5		L	
<b>Valve series</b>															
VSVA		Standard valve, ISO 5599-1													
<b>Valve type</b>															
B		Sub-base valve													
<b>Valve function</b>															
P		Monostable, mid-position													
<b>Ports/switching positions</b>															
53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

## Order example:

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

Standard valve VSVA - sub-base valve - monostable, 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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

# Solenoid valves, ISO 5599-1

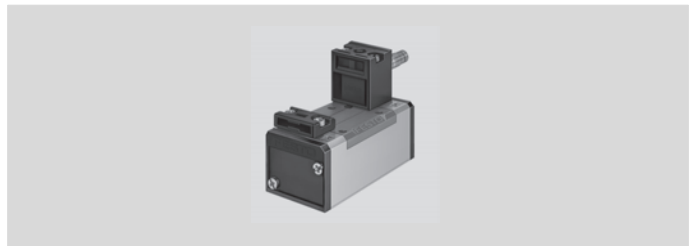
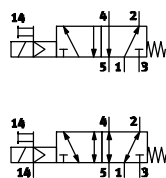
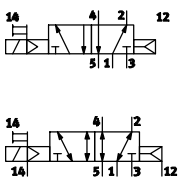
## Data sheet – MFH/JMFH

Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
Width	42 mm			52 mm		
Valve function	5/2	5/2	5/3	5/2	5/2	5/3
	Single solenoid	Double solenoid	Exhausted	Single solenoid	Double solenoid	Exhausted
Sub-base	1, 2, 3, 4, 5		G $\frac{1}{4}$		G $\frac{3}{8}$	
Type of mounting	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 operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Ambient temperature	[°C]	-5 ... +40
Temperature of medium	[°C]	-10 ... +60

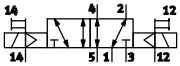
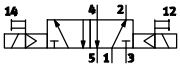
Materials	
Housing	Die-cast aluminium
Seals	HNBR, NBR

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



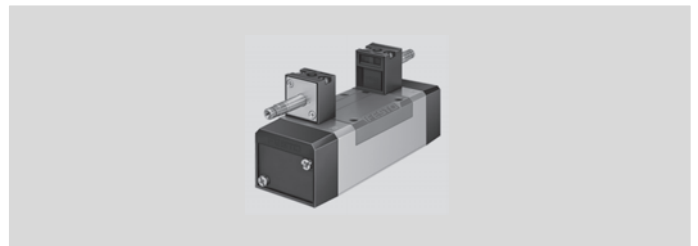
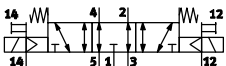
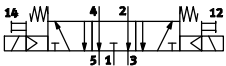
Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
Width	42 mm			52 mm		
Reset method			Mechanical	Pneumatic	Mechanical	Pneumatic
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	2 ... 10	3 ... 10	2 ... 10
	External pilot air supply	[bar]	-0.9 ... +16	-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 valve					
Length/width/height	[mm]		126/42/70	115/42/70	160/54/80	142/54/80

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



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
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	Changeover	[ms]	16
			18
Design			Piston spool valve
Length/width/height		[mm]	143/42/70
			160/54/80

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



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
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 valve
Length/width/height		[mm]	143/42/70
			160/54/80

# Solenoid valves, ISO 5599-1

## Order code – MFH/JMFH

<b>Solenoid valve</b>	
MFH	Single solenoid, for F solenoid coil
JMFH	Double solenoid, for F solenoid coil
<b>Valve function</b>	
5/2	5/2-way valve
5/3E	5/3-way valve, normally exhausted
<b>Standard identification</b>	
D	Standard identification D
<b>Size</b>	
1	Width 42 mm
2	Width 52 mm:
<b>Reset method for 5/2-way valve, single solenoid</b>	
-	Pneumatic spring
FR	Mechanical spring <span style="border: 1px solid black; padding: 0 2px;">1</span>
<b>Pilot air supply port</b>	
-	Internal
S	External
<b>Generation</b>	
C	C series

8

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

**Order example:**

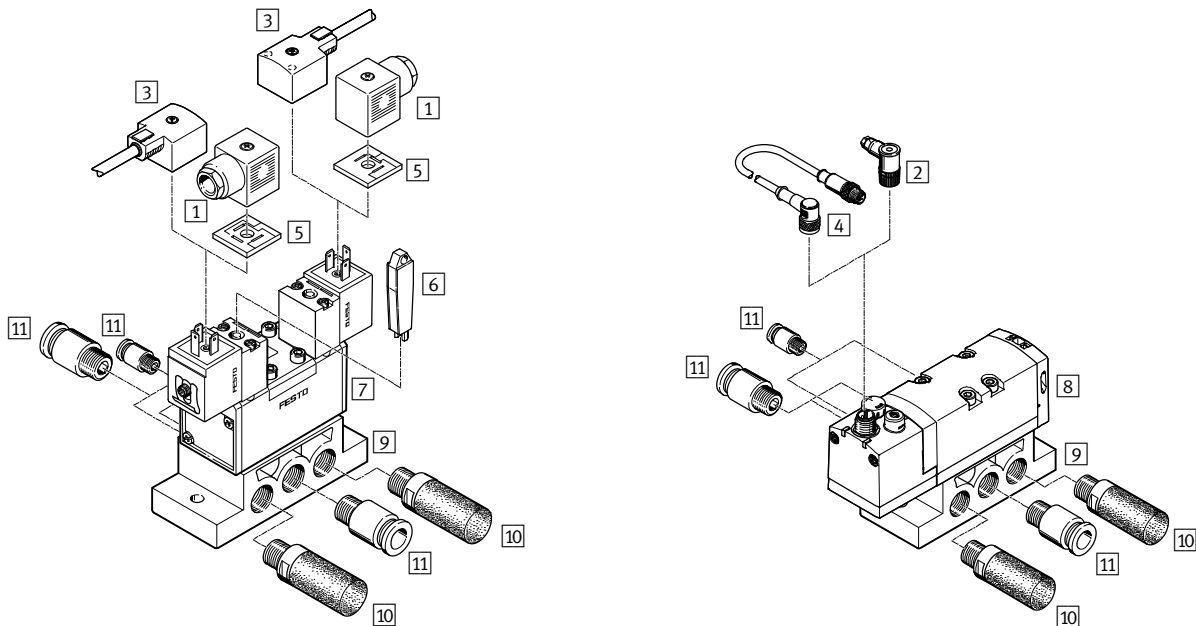
JMFH-5/2-D-1-C

Double solenoid solenoid valve, without solenoid coil JMFH - 5/2-way valve - standard identification D - width 42 mm - C series

## Ordering – Product options

	<p><b>Configurable product</b></p>	<p><b>This product and all its options can be ordered using the configurator.</b></p>	<p>The configurator can be found under Products on the DVD or                  → <a href="http://www.festo.com/catalogue/...">www.festo.com/catalogue/...</a></p>	<p>Enter the type code in the search field.</p>
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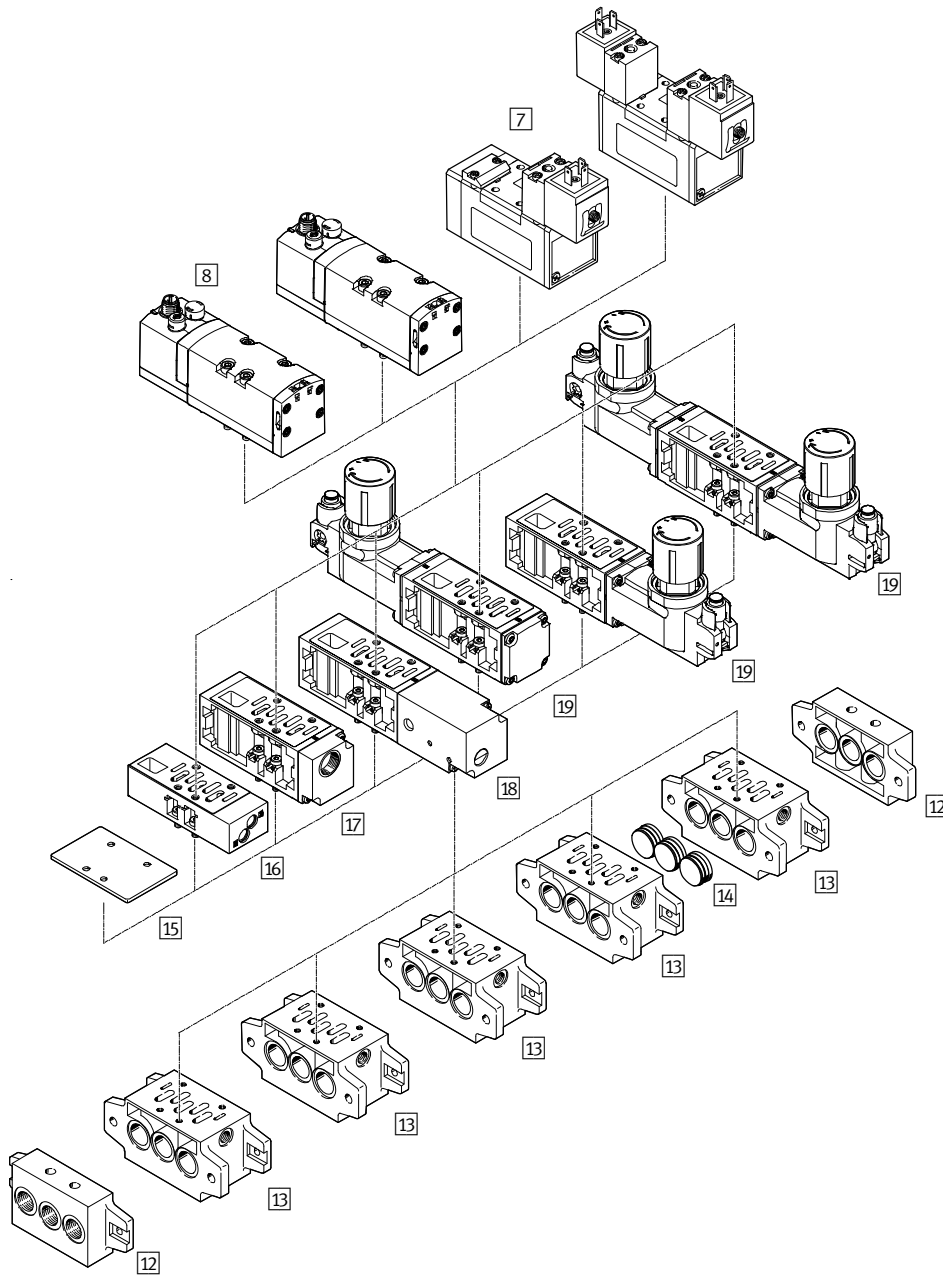
## Accessories – Individual mounting



	→ Page/online
1 Angled plug socket MSSD, square design	692
2 Plug socket SEA for plug M12x1	692
3 Plug socket with cable KMC for plug type A	692
4 Connecting cable KM12-M12 for plug M12x1	692
5 Illuminating seal MC-LD for N1 solenoid coil	692
6 Manual override AHB	692
7 Solenoid valve MN1H	678
8 Solenoid valve VSVA	680
9 Individual sub-base NAS	692
10 Silencer U	692
11 Push-in fitting QS	693
– N1 solenoid coil	694
– F solenoid coil	694
– Inscription label IBS-9x17	694

# Solenoid valves, to ISO 5599-1

## Accessories – Manifold assembly

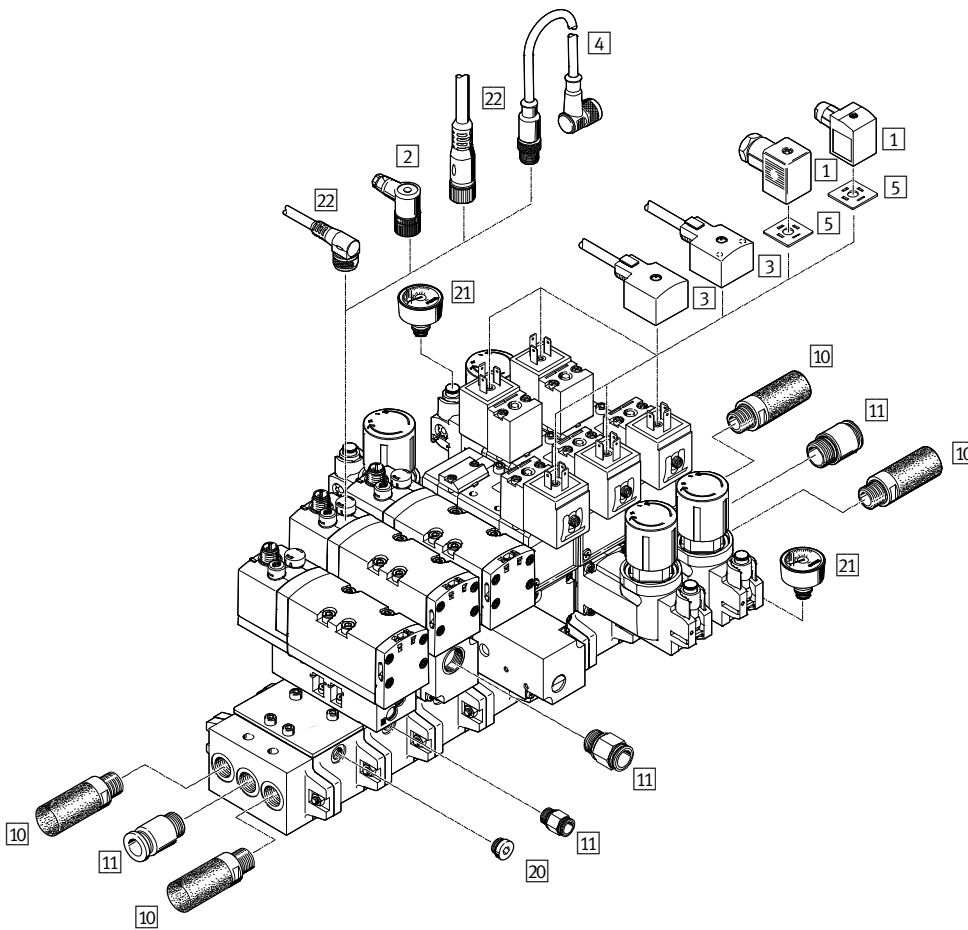


8

		→ Page/online
7	Solenoid valve MN1H	678
8	Solenoid valve VSVA	680
12	End plate kit NEV	693
13	Manifold sub-base NAV	693
14	Isolating disc NSC	693
15	Blanking plate NDV	693
16	Flow control plate VABF-S1-1-F1B1	693
17	Vertical supply plate VABF-S1-1-P1A3	693
18	Vertical pressure shut-off plate VABF-S1-1-L1D1	693
19	Regulator plate VABF-S1-1-R	694
-	N1 solenoid coil	694
-	F solenoid coil	694
-	Inscription label IBS-9x17	694



## Accessories



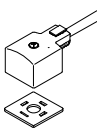
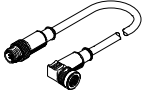


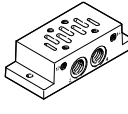



		→ Page/online
1	Angled plug socket MSSD, square design	692
2	Plug socket SEA for plug M12x1	692
3	Plug socket with cable KMC for plug type A	692
4	Connecting cable KM12-M12 for plug M12x1	692
5	Illuminating seal MC-LD for N1 solenoid coil	692
10	Silencer U	692
11	Push-in fitting QS	693
20	Blanking plug B	694
21	Pressure gauge PAGN-26-10-P10	694
22	Plug socket with cable NEBU-M12 for plug M12x1	694
-	N1 solenoid coil	694
-	F solenoid coil	694
-	Inscription label IBS-9x17	694


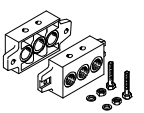
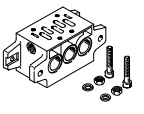


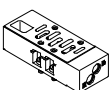
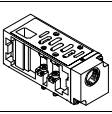
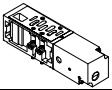
## Solenoid valves, ISO 5599-1

FESTO

## Accessories – Ordering data

	Description		Part no.	Type
<b>1</b>	<b>Angled plug socket</b>			Technical data online: → <a href="#">mssd</a>
	For plug type A	Cable conduit fitting Pg9	Screw terminal	<b>34583</b> MSSD-C
		Cable conduit fitting M16	Screw terminal	<b>539709</b> MSSD-C-M16
		–	Insulation displacement connection	<b>192748</b> MSSD-C-S-M16
	For F solenoid coil	Cable conduit fitting Pg9	Screw terminal	★ <b>34431</b> MSSD-F
<b>2</b>	<b>Plug socket for plug M12x1</b>			Technical data online: → <a href="#">sea</a>
	Angled socket, M12, 4-pin		Screw terminal	<b>185498</b> SEA-M12-4WD-PG7
<b>3</b>	<b>Plug socket with cable for plug type A</b>			Technical data online: → <a href="#">kmc</a>
	24 V DC	With LED	2.5 m	<b>30931</b> KMC-1-24DC-2,5-LED
			5 m	<b>30933</b> KMC-1-24DC-5-LED
			10 m	<b>193459</b> KMC-1-24DC-10-LED
	Up to 230 V	Without LED	2.5 m	<b>30932</b> KMC-1-230AC-2,5
			5 m	<b>30934</b> KMC-1-230AC-5
<b>4</b>	<b>Connecting cable for plug M12x1</b>			Technical data online: → <a href="#">km12</a>
	Connecting cable, straight plug, angled socket	M12, 4-pin	1.0 m	<b>185499</b> KM12-M12-GSWD-1-4
<b>5</b>	<b>Illuminating seal for N1 solenoid coil</b>			
	Illuminating seal	For N1 solenoid coils	12 ... 24 V DC	<b>19145</b> MC-LD-12-24DC
			230 V DC/V AC	<b>19146</b> MC-LD-230AC
<b>6</b>	<b>Manual override</b>			
	Tool for manual override		MN1H/MFH-valves	<b>157651</b> AHB-MD/MF/MV
<b>9</b>	<b>Individual sub-base</b>			
	For valve width 42 mm	Ports at side	★	<b>9484</b> NAS-1/4-1A-ISO
		Ports underneath	★	<b>9485</b> NAU-1/4-1B-ISO
	For valve width 52 mm	Ports at side		<b>11310</b> NAS-3/8-2A-ISO
		Ports underneath		<b>11416</b> NAU-3/8-2B-ISO
<b>10</b>	<b>Silencer</b>			Technical data → <a href="#">1237</a>
	Silencer for noise reduction at venting ports	For thread G1/4	★	<b>6842</b> U-1/4-B
		For thread G3/8	★	<b>6843</b> U-3/8-B
		For thread G1/2	★	<b>6844</b> U-1/2-B

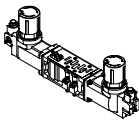


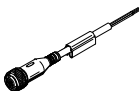

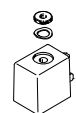
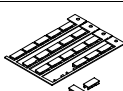
## Accessories – Ordering data

	Description		Part no.	Type	
<b>11 Push-in fitting</b> <span style="float: right;">Technical data → 1098</span>					
	Connecting thread G1/8	Tubing O.D. 8 mm	10 pieces	★	<b>186098</b> QS-G1/8-8
	Connecting thread G1/4	Tubing O.D. 8 mm	10 pieces	★	<b>186099</b> QS-G1/4-8
	Connecting thread G3/8, plastic releasing ring	Tubing O.D. 10 mm	10 pieces	★	<b>186102</b> QS-G3/8-10
	Connecting thread G1/2	Tubing O.D. 12 mm	1 piece	★	<b>186104</b> QS-G1/2-12
<b>12 End plate kit</b>					
	Right-hand and left-hand end plate	For valve width 42 mm		★	<b>10174</b> NEV-1DA/DB-ISO
		For valve width 52 mm			<b>11306</b> NEV-2DA/DB-ISO
<b>13 Manifold sub-base</b>					
	One valve position	For valve width 42 mm	Ports under- neath	★	<b>10173</b> NAV-1/4-1C-ISO
			Ports at side and underneath	★	<b>152789</b> NAVW-1/4-1-ISO
		For valve width 52 mm	Ports under- neath		<b>11305</b> NAV-3/8-2C-ISO
<b>14 Isolating disc</b>					
	For pressure zone separation	For valve width 42 mm		★	<b>11550</b> NSC-1/4-1-ISO
		For valve width 52 mm			<b>11908</b> NSC-3/8-2-ISO
<b>15 Blanking plate</b>					
	With seal and mounting screws	For valve width 42 mm		★	<b>9489</b> NDV-1-ISO
		For valve width 52 mm			<b>11308</b> NDV-2-ISO
<b>16 Flow control plate</b>					
	For exhaust air flow control in ports 3 and 5 of the valve	For valve width 52 mm			<b>555788</b> VABF-S1-2-F1B1-C
<b>17 Vertical supply plate</b>					
	For independently supplying work- ing air to a valve	For valve width 52 mm			<b>555785</b> VABF-S1-2-P1A3-G12
<b>18 Vertical pressure shut-off plate</b>					
	For shutting off a valve from the supply pressure	For valve width 52 mm			<b>555790</b> VABF-S1-2-L1D1-C

## Solenoid valves, to ISO 5599-1

FESTO

## Accessories – Ordering data

	Description	Part no.	Type			
<b>19 Regulator plate, for valve width 52 mm</b>						
	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	
<b>20 Blanking plug</b> <span style="float: right;">Technical data online: → <a href="#">b-1</a></span>						
	For sealing ports	Connecting thread G1/4	10 pieces	3569	B-1/4	
		Connecting thread G3/8	10 pieces	3570	B-3/8	
<b>21 Pressure gauge</b> <span style="float: right;">Technical data online: → <a href="#">pagn</a></span>						
	With cartridge fitting connection for regulator plate		0 ... 10 bar	543488	PAGN-26-10-P10	
<b>22 Plug socket with cable for plug M12x1</b> <span style="float: right;">Technical data online: → <a href="#">nebu</a></span>						
	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 socket, 5-pin	5 m		541329	NEBU-M12W5-K-5-LE4
<b>N1 solenoid coil for valves MN1H, JMN1H</b>						
	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	
<b>F solenoid coil for valves MFH, JMFH</b>						
	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		
<b>Inscription label</b>						
	Inscription label for valves		24 pieces in frame	161937	IBS-9x17	



Overview/Configuration/Ordering  
 → [www.festo.com/catalogue/vuvg](http://www.festo.com/catalogue/vuvg)

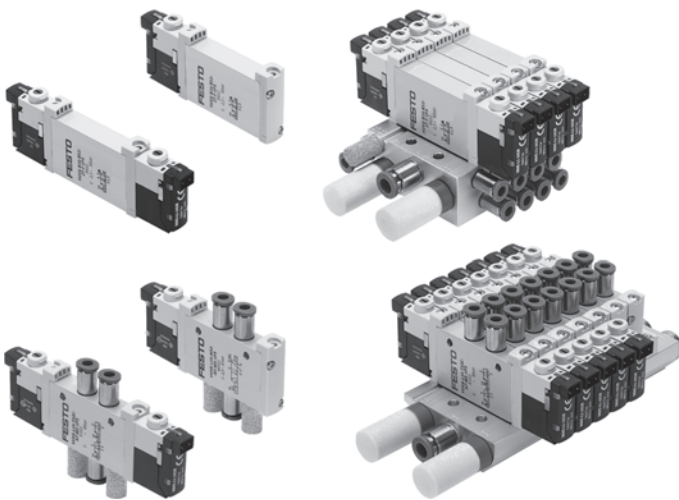


Additional information/Support/User documentation  
 → [www.festo.com/sp/vuvg](http://www.festo.com/sp/vuvg)

Electrically and pneumatically actuated directional control valves  
 Universal directional control valves

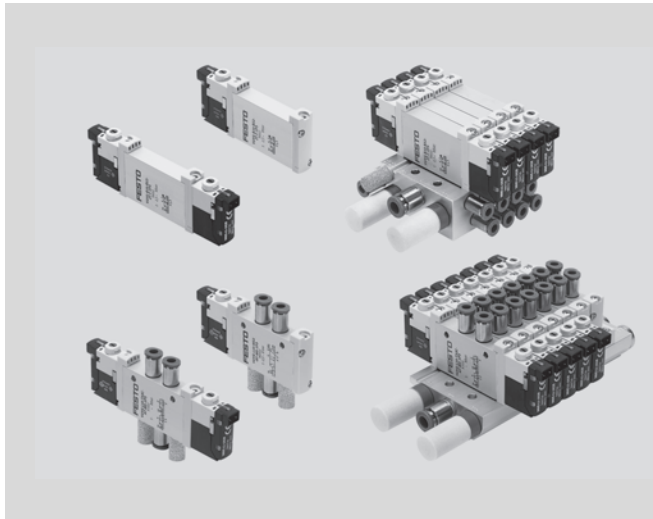
Solenoid valves

# VUVG



- + Connection technology via connecting plate (E-box)
- + Specific I-Port interface from Festo for bus node
- + IO-Link mode for direct connection to a higher-level IO-Link master
- + Festo-specific I-Port interface with interlock
- + Variable multi-pin plug connection using Sub-D or flat cable
- + Sturdy and durable metal components
- + Reversible piston spool valves, up to 24 valve positions

# Solenoid valves VUVG



- Universal valve
- Combination of basic valves and connection options
- Width 10, 14 and 18 mm
- In-line valves VUVG-L and VUVG-S
- Sub-base valves VUVG-B
- Internal or external pilot air supply
- Can be mounted as individual valve or sub-base valve on sturdy aluminium manifold rail

★ Quick ordering of basic designs → 701, 707, 713, 719, 725, 731

→ [www.festo.com/catalogue/vuvg](http://www.festo.com/catalogue/vuvg)

## 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		
VUVG-L	In-line valve	M3 (10A)	–	–	–	–	–	–	–	–	80	100	100	90	90	90	<a href="#">vuvg</a>
		M5 (10)	150	150	150	135	125	125	–	190	220	220	210	210	210	697	
		M7 (10)	190	190	190	150	140	140	–	320	380	380	320	320	320	697	
		G1/8 (14)	650	600	650	550	500	500	780	780	–	780	650	600	600	703	
		G1/4 (18)	1000	1000	1000	1000	1000	1000	–	1300	1300	1380	1200	1000	1000	709	
VUVG-S	In-line valve for manifold assembly	M3 (10A)	–	–	–	–	–	–	–	80	100	100	90	90	90	<a href="#">vuvg</a>	
		M5 (10)	150	150	150	135	125	125	–	190	220	220	210	210	210	697	
		M7 (10)	170	170	170	140	130	130	–	290	340	340	300	300	300	697	
		G1/8 (14)	620	580	580	520	480	480	730	730	–	730	620	580	580	703	
		G1/4 (18)	1000	1000	1000	1000	1000	1000	–	1300	1300	1380	1200	1000	1000	709	
VUVG-B	Sub-base valve	M3 (10A)	–	–	–	–	–	–	–	80	100	100	90	90	90	<a href="#">vuvg</a>	
		M5 (10)	150	150	150	130	120	120	–	180	210	210	200	200	200	715	
		M7 (10)	160	160	160	140	130	130	–	230	270	270	250	250	250	715	
		G1/8 (14)	540	510	540	430	410	410	580	580	–	580	540	510	510	721	
		G1/4	800	800	800	800	800	800	–	1000	1000	1000	950	950	950	727	

### Valve functions:

- T32C-A 2x3/2-way valve, normally closed, pneumatic spring
- T32U-A 2x3/2-way valve, normally open, pneumatic spring
- T32H-A 2x3/2-way valve, 1x normally closed, 1x normally open, pneumatic spring
- T32C-M 2x3/2-way valve, normally closed, mechanical spring
- T32U-M 2x3/2-way valve, normally open, mechanical spring
- T32H-M 2x3/2-way valve, 1x normally closed, 1x normally open, mechanical spring
- M52-A 5/2-way valve, single solenoid, pneumatic spring
- M52-M 5/2-way valve, single solenoid, mechanical spring
- M52-R 5/2-way valve, single solenoid, pneumatic/mechanical spring
- B52 5/2-way valve, double solenoid
- P53C 5/3-way valve, mid-position closed
- P53U 5/3-way valve, mid-position pressurised
- P53E 5/3-way valve, mid-position exhausted

Data sheet

Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>										
Valve function		T32-A		T32-M		M52-R	B52	M52-M	P53			
Normal position		C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	–	–	C <sup>1)</sup>	U <sup>2)</sup>	E <sup>3)</sup>
Pneumatic spring reset method		Yes			No			Yes <sup>5)</sup>	–	No	No	
Mechanical spring reset method		No			Yes			Yes <sup>5)</sup>	–	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								
Design		Piston spool valve										
Type of mounting		Via through-holes <sup>6)</sup>										
Electrical connection		Via E-box										
Nominal operating voltage	[V DC]	5, 12 and 24 ±10%										
Power	[W]	1, reduced to 0.35 with holding current reduction										
Duty cycle ED	[%]	100										
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)										

- 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.

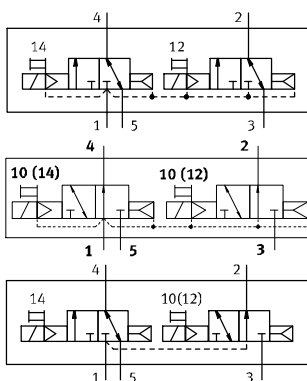
Operating conditions

Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium 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

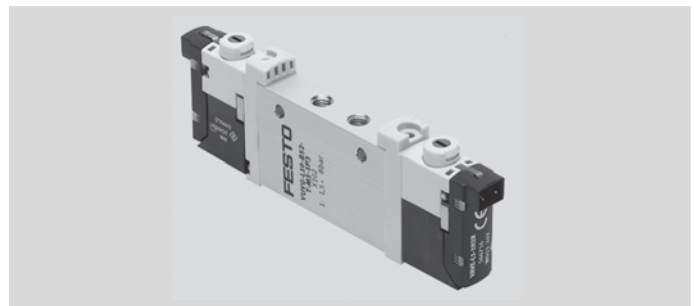
Data sheet – 2x3/2-way valve



Normally closed, internal or external pilot air supply

Normally open, internal or external pilot air supply

1x normally closed,  
1x normally open,  
internal or external pilot air supply



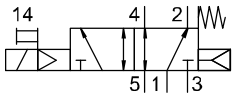
Technical data

Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function		T32-A	T32-M
Operating pressure	Internal	[bar]	1.5 ... 8
	External	[bar]	–0.9 ... +10
Pilot pressure <sup>7)</sup>		[bar]	1.5 ... 8
Standard nominal flow rate M5		[l/min]	150
Flow rate on manifold rail M5		[l/min]	125 ... 135
Standard nominal flow rate M7		[l/min]	190
Flow rate on manifold rail M7		[l/min]	140 ... 150
Switching time on/off		[ms]	6/16
			8/11

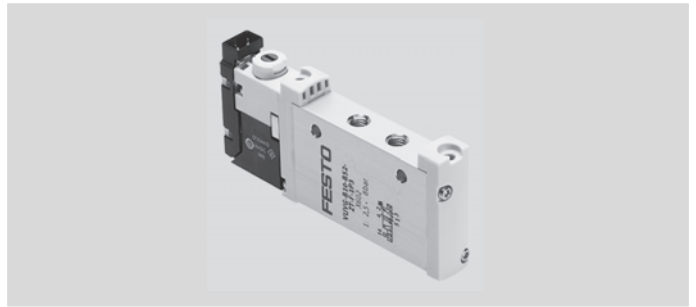
7) Minimum pilot pressure 50% of operating pressure.

# Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M5/M7

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



Internal or external pilot air supply



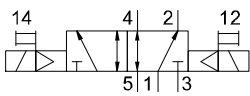
### Technical data

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

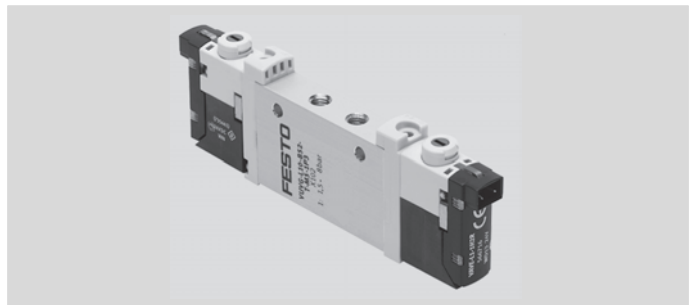
Valve function		M52-R	M52-M
Operating pressure	Internal	[bar] 2.5 ... 8	3 ... 8
	External	[bar] -0.9 ... +10	-0.9 ... +8
Pilot pressure <sup>1)</sup>		[bar] 2.5 ... 8	3 ... 8
Standard nominal flow rate M5		[l/min] 220	190
Flow rate on manifold rail M5		[l/min] 220	190
Standard nominal flow rate M7		[l/min] 380	320
Flow rate on manifold rail M7		[l/min] 340	290
Switching time on/off		[ms] 7/19	8/24

1) Minimum pilot pressure 50% of operating pressure.

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



Internal or external pilot air supply



### Technical data

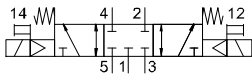
Download CAD data → [www.festo.com](http://www.festo.com)

Valve function		B52
Operating pressure	Internal	[bar] 1.5 ... 8
	External	[bar] -0.9 ... +10
Pilot pressure <sup>2)</sup>		[bar] 1.5 ... 8
Standard nominal flow rate M5		[l/min] 220
Flow rate on manifold rail M5		[l/min] 220
Standard nominal flow rate M7		[l/min] 380
Flow rate on manifold rail M7		[l/min] 340
Changeover time		[ms] 7

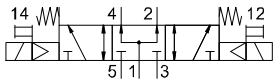
2) Minimum pilot pressure 50% of operating pressure.



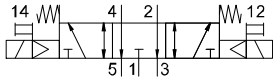
**Data sheet – 5/3-way valve**



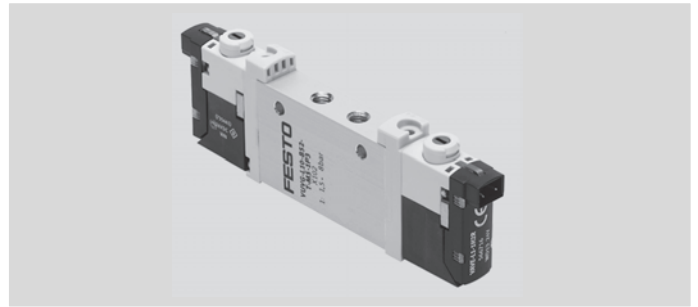
Normally closed,  
internal or external pilot air supply



Normally open,  
internal or external pilot air supply



Normally exhausted,  
internal or external pilot air supply




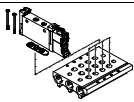
Download CAD data → [www.festo.com](http://www.festo.com)

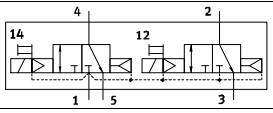
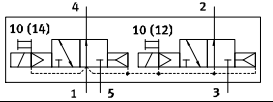
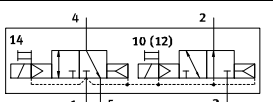
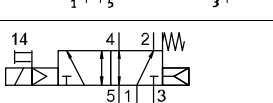
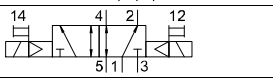
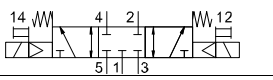
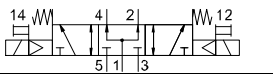
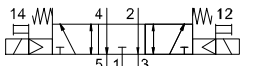
Technical data			P53
Valve function			P53
Operating pressure	Internal	[bar]	3 ... 8
	External	[bar]	-0.9 ... +10
Pilot pressure <sup>1)</sup>		[bar]	3 ... 8
Standard nominal flow rate M5		[l/min]	210
Flow rate on manifold rail M5		[l/min]	210
Standard nominal flow rate M7		[l/min]	320
Flow rate on manifold rail M7		[l/min]	300
Switching time on/off		[ms]	10/30
Changeover time		[ms]	16

1) Minimum pilot pressure 50% of operating pressure.

# Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M5/M7

## Order code

VUVG	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	-
<b>Valve design</b>																				
																			L	
In-line, individual valve																				
																			S	
In-line, manifold valve incl. seal and screws																				
<b>Width</b>																				
10 mm																			10	

<b>Valve functions<sup>5)</sup></b>																				
																				T32C
																				T32U
																				T32H
																				M52
																				B52
																				P53C
																				P53U
																				P53E




**Reset method**

Pneumatic spring for T32	A
Mechanical spring for T32 and M52	M
Pneu./mech. spring for M52	R
With B52 and P53	-



**Pilot air supply**

Internal	-
External	Z

**Manual override**

	Non-detenting	H
	Covered	S
-	Non-detenting, detenting	T
	Detenting	Y

**Connecting cable**

W1...4 <sup>1)</sup>	Connection pattern H, unsheathed	
C1...4 <sup>1)</sup>	Connection pattern H, sheathed	
N1...4 <sup>6)</sup>	M8x1, 3-pin	






**Display**

L	LED
---	-----

**Protective circuit**

-	Without holding current reduction (HCR)
R <sup>2)</sup>	With holding current reduction (HCR)

**E-box**

H2	Connection pattern H, horizontal plug	
H3	Connection pattern H, vertical plug	
L1...4	With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m	
R8	Individual plug M8, 3-pin, without HCR	
P3	Without E-box	

**Nominal operating voltage**

1	24 V DC
5	12 V DC
4	5 V DC

**Exhausting with VUVG-L**

QN	QS if QS <sup>3)</sup>
U	Silencer
-	M5 or M7

Pneumatic port		Flow rate [l/min] <sup>4)</sup>
M5	M5 thread	220
Q3	Push-in connector 3 mm/M5	100
Q4	Push-in connector 4 mm/M5	200
Q6	Push-in connector 6 mm/M5	220
M7	M7 thread	380
Q4H	Push-in connector 4 mm/M7	220
Q6H	Push-in connector 6 mm/M7	330

1) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m.  
2) At 24 V DC, not in combination with P3.

3) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5.  
4) Flow rate applies to 5/2-way individual valve.

5) Circuit symbol for internal pilot air supply.  
6) Straight: N1 = 2.5 m, N2 = 5 m  
Angled: N3 = 2.5 m, N4 = 5 m.

## 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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

### ★ Quick ordering<sup>1)</sup>

Part No.	Type
<b>In-line valve M5, 3/2-way valve</b>	
566454	VUVG-L10-T32C-AT-M5-1P3
577347	VUVG-L10-T32C-AT-M5-1R8L
<b>In-line valve M5, 5/2-way valve, single-solenoid</b>	
566457	VUVG-L10-M52-RT-M5-1P3
572634	VUVG-L10-M52-RT-M5-1R8L
<b>In-line valve M5, 5/2-way valve, double solenoid</b>	
566458	VUVG-L10-B52-T-M5-1P3
576664	VUVG-L10-B52-T-M5-1R8L
<b>In-line valve M5, 5/3-way valve</b>	
566459	VUVG-L10-P53C-T-M5-1P3
577346	VUVG-L10-P53C-T-M5-1R8L

Part no.	Type
<b>In-line valve M7, 3/2-way valve</b>	
566471	VUVG-L10-T32C-AT-M7-1P3
574218	VUVG-L10-T32C-AT-M7-1R8L
<b>In-line valve M7, 5/2-way valve, single-solenoid</b>	
566474	VUVG-L10-M52-RT-M7-1P3
574221	VUVG-L10-M52-RT-M7-1R8L
<b>In-line valve M7, 5/2-way valve, double solenoid</b>	
566475	VUVG-L10-B52-T-M7-1P3
574222	VUVG-L10-B52-T-M7-1R8L
<b>In-line valve M7, 5/3-way valve</b>	
566476	VUVG-L10-P53C-T-M7-1P3
574223	VUVG-L10-P53C-T-M7-1R8L

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

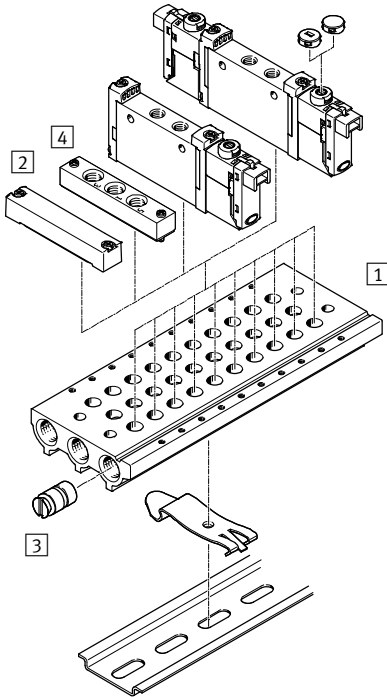
# Solenoid valves VUVG-L10 and VUVG-S10, in-line valves M5/M7

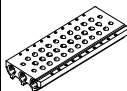




## Accessories – Ordering data

### Order code – Manifold rails

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

### Manifold assembly



		Part no.	Type
<b>1 Manifold rail</b>			
	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
		<b>2 Blanking plate</b>	
	For M5/M7	★ 566462	VABB-L1-10-S
<b>3 Blanking plug</b>			
	Separator for pressure zones	569995	VABD-8-B
<b>4 Supply plate</b>			
	For M5	569991	VABF-L1-10-P3A4-M5
	For M7	569992	VABF-L1-10-P3A4-M7
<b>Seals for in-line valves (10 pieces incl. 20 screws)</b>			
	For M5	★ 566672	VABD-L1-10X-S-M5
	For M7	★ 566673	VABD-L1-10X-S-M7

## Data sheet

Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>										
Valve function		T32-A		T32-M		M52-A	B52	M52-M	P53			
Normal position		C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	–	–	C <sup>1)</sup>	U <sup>2)</sup>	E <sup>3)</sup>
Pneumatic spring reset method		Yes		No		Yes	–	No	No			
Mechanical spring reset method		No		Yes		No	–	Yes	Yes			
Port: in-line valve	1, 2, 3, 4, 5 12, 14	G1/8		M5								
Vacuum operation at port 1		No		Only with external pilot air supply								
Design		Piston spool valve										
Type of mounting		Via through-holes <sup>5)</sup>										
Electrical connection		Via E-box										
Nominal operating voltage	[V DC]	5, 12 and 24 ±10%										
Power	[W]	1, reduced to 0.35 with holding current reduction										
Duty cycle ED	[%]	100										
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)										

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.

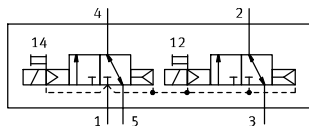
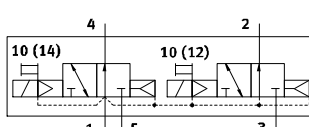
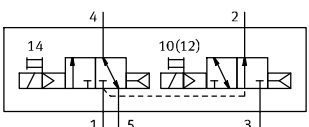
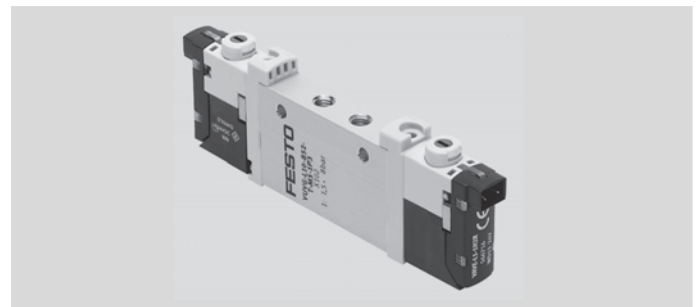
## Operating conditions

Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium 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

## Data sheet – 2x3/2-way valve

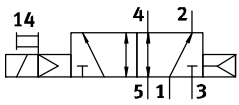
Normally closed,  
internal or external pilot air supplyNormally open,  
internal or external pilot air supply1x normally closed,  
1x normally open,  
internal or external pilot air supply

Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function		T32-A	T32-M
Operating pressure	Internal	[bar]	1.5 ... 8
	External	[bar]	1.5 ... 10
Pilot pressure <sup>6)</sup>		[bar]	1.5 ... 8
Standard nominal flow rate		[l/min]	600 ... 650
Flow rate on manifold rail		[l/min]	580 ... 620
Switching time on/off		[ms]	8/23

6) Minimum pilot pressure 50% of operating pressure

# Solenoid valves VUVG-L14 and VUVG-S14, in-line valves G<sup>1</sup>/<sub>8</sub>

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



Internal or external pilot air supply

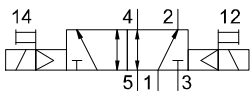


Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function			M52-A	M52-M
Operating pressure	Internal	[bar]	2.5 ... 8	3 ... 8
	External	[bar]	-0.9 ... +10	-0.9 ... +8
Pilot pressure <sup>1)</sup>		[bar]	2.5 ... 8	3 ... 8
Standard nominal flow rate		[l/min]	780	780
Flow rate on manifold rail		[l/min]	730	730
Switching time on/off		[ms]	14/22	13/35

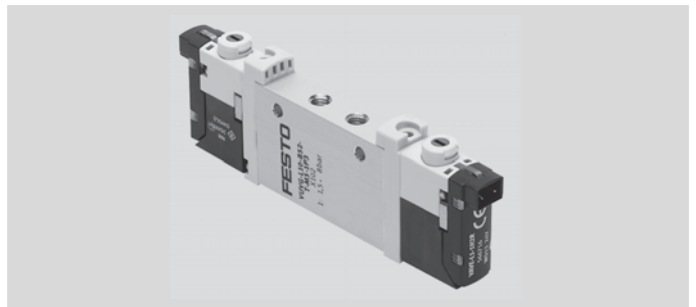
1) Minimum pilot pressure 50% of operating pressure

8

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



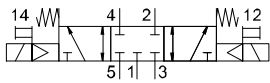
Internal or external pilot air supply



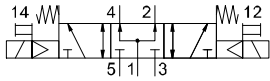
Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function			B52	
Operating pressure	Internal	[bar]	1.5 ... 8	
	External	[bar]	-0.9 ... +10	
Pilot pressure <sup>2)</sup>		[bar]	1.5 ... 8	
Standard nominal flow rate		[l/min]	780	
Flow rate on manifold rail		[l/min]	730	
Changeover time		[ms]	8	

2) Minimum pilot pressure 50% of operating pressure

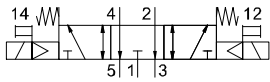
**Data sheet – 5/3-way valve**



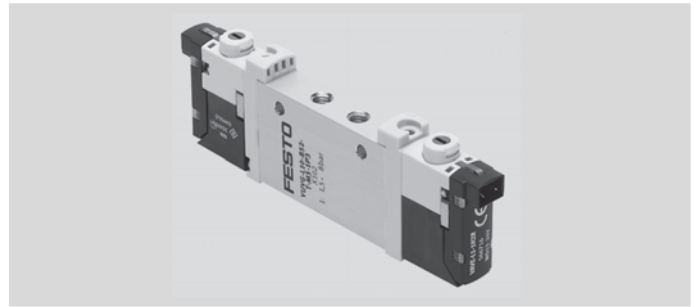
Normally closed, internal or external pilot air supply



Normally open, internal or external pilot air supply



Normally exhausted, internal or external pilot air supply




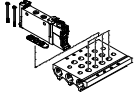
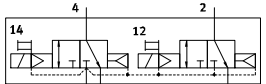
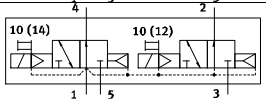
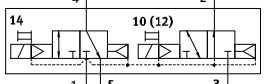
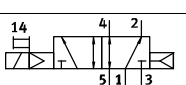
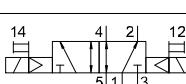

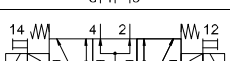
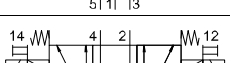










Download CAD data → [www.festo.com](http://www.festo.com)

Technical Data			P53C
Valve function			
Operating pressure	Internal	[bar]	3 ... 8
	External	[bar]	-0.9 ... +10
Pilot pressure <sup>1)</sup>		[bar]	3 ... 8
Standard nominal flow rate		[l/min]	600 ... 650
Flow rate on manifold rail		[l/min]	580 ... 620
Switching time on/off		[ms]	12/40
Changeover time		[ms]	20

1) Minimum pilot pressure 50% of operating pressure

# Solenoid valves VUVG-L14 and VUVG-S14, in-line valves G<sup>1</sup>/<sub>8</sub>

**Order code**

VUVG	-	14	-	-	-	-	-	-	-	L	-	
<b>Valve design</b>												
	L											
In-line, individual valve												
	S											
In-line, manifold valve incl. seal and screws												
<b>Width</b>												
14 mm										14		
<b>Valve functions<sup>5)</sup></b>												
										T32C		
										T32U		
										T32H		
										M52		
										B52		
										P53C		
										P53U		
										P53E		
<b>Reset method</b>												
Pneumatic spring for T32										A		
Mechanical spring for T32 and M52										M		
With B52 and P53										-		
<b>Pilot air supply</b>												
Internal										-		
External										Z		
<b>Manual override</b>												
										Non-detenting		H
										Covered		S
-										Non-detenting, detenting		T
										Detenting		Y
<b>Connecting cable</b>												
W1...4 <sup>1)</sup>										Connection pattern H, unsheathed		
C1...4 <sup>1)</sup>										Connection pattern H, sheathed		
N1...4 <sup>6)</sup>										M8x1, 3-pin		
<b>Display</b>												
L										LED		
<b>Protective circuit</b>												
-										Without holding current reduction (HCR)		
R <sup>2)</sup>										With holding current reduction (HCR)		
<b>E-box</b>												
H2										Connection pattern H, horizontal plug		
H3										Connection pattern H, vertical plug		
L1...4										With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m		
R8										Individual plug M8, 3-pin, without HCR		
P3										Without E-box		
<b>Nominal operating voltage</b>												
1										24 V DC		
5										12 V DC		
4										5 V DC		
<b>Exhausting with VUVG-L</b>												
QN										QS if QS <sup>3)</sup>		
U										Silencer		
-										G <sup>1</sup> / <sub>8</sub>		
<b>Pneumatic port</b>												
G18										Thread G <sup>1</sup> / <sub>8</sub>		Flow rate [l/min] <sup>4)</sup>
Q4										Push-in connector 4 mm/G <sup>1</sup> / <sub>8</sub>		780
Q6										Push-in connector 6 mm/G <sup>1</sup> / <sub>8</sub>		250
Q8										Push-in connector 8 mm/G <sup>1</sup> / <sub>8</sub>		500
-												700
<b>Footnotes</b>												
1) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m.												
2) At 24 V DC.												
3) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5.												
4) Flow rate applies to 5/2-way individual valve.												
5) Circuit symbol for internal pilot air supply.												
6) Straight: N1 = 2.5 m, N2 = 5 m Angled: N3 = 2.5 m, N4 = 5 m.												

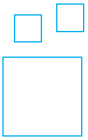
1) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m.  
2) At 24 V DC.

3) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5.  
4) Flow rate applies to 5/2-way individual valve.

5) Circuit symbol for internal pilot air supply.  
6) Straight: N1 = 2.5 m, N2 = 5 m  
Angled: N3 = 2.5 m, N4 = 5 m.



## 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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

★ Quick ordering<sup>1)</sup>

Part no.	Type
<b>In-line valve G1/8, 3/2-way valve</b>	
566496	VUVG-L14-T32C-AT-G18-1P3
574226	VUVG-L14-T32C-AT-G18-1R8L
<b>In-line valve G1/8, 5/2-way valve, monostable</b>	
566499	VUVG-L14-M52-AT-G18-1P3
574229	VUVG-L14-M52-AT-G18-1R8L

Part no.	Type
<b>In-line valve G1/8, 5/2-way valve, bistable</b>	
566500	VUVG-L14-B52-T-G18-1P3
574230	VUVG-L14-B52-T-G18-1R8L
<b>In-line valve G1/8, 5/3-way valve</b>	
566501	VUVG-L14-P53C-T-G18-1P3
574231	VUVG-L14-P53C-T-G18-1R8L

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

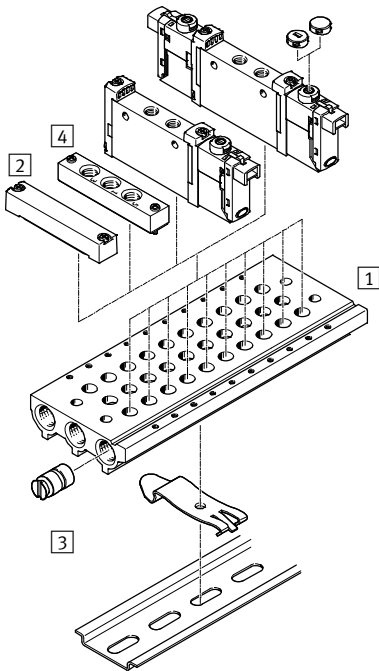
# Solenoid valves VUVG-L14 and VUVG-S14, in-line valves G<sup>1</sup>/<sub>8</sub>

## Accessories – Ordering data

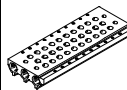



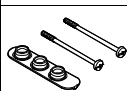
### Order code – Manifold rails

<b>VABM</b>	-	<b>L1</b>	-	<b>14</b>	<b>S</b>	-	<b>G14</b>	-
Valve manifold parts								
Manifold rail	<b>VABM</b>							
Valve series								
VUVG	<b>L1</b>							
Valve width								
14 mm			<b>14</b>					
Manifold rail with port 1, 3, 5								
For G <sup>1</sup> / <sub>8</sub> in-line valves			<b>S</b>					
						Number of valve positions		
						2 to 10, 12, 14 and 16		
						Port 1, 3, 5		
				<b>G14</b>		G <sup>1</sup> / <sub>4</sub>		

### Manifold assembly



8

		Part no.	Type
<b>1 Manifold rail</b>			
	For G <sup>1</sup> / <sub>8</sub>	★ 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
<b>2 Blanking plate</b>			
	For G <sup>1</sup> / <sub>8</sub>	★ 569989	VABB-L1-14
<b>3 Blanking plug</b>			
	Separator for pressure zones	569996	VABD-10-B
<b>4 Supply plate</b>			
	For G <sup>1</sup> / <sub>8</sub>	569993	VABF-L1-14-P3A4-G18
<b>Seals for in-line valves (10 pieces incl. 20 screws)</b>			
	For G <sup>1</sup> / <sub>8</sub>	★ 566675	VABD-L1-14X-S-G18

## Data sheet

Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>										
Valve function		T32-A		T32-M		M52-R	B52	M52-M	P53			
Normal position		C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	–	–	C <sup>1)</sup>	U <sup>2)</sup>	E <sup>3)</sup>
Pneumatic spring reset method		Yes			No			Yes <sup>5)</sup>	–	No	No	
Mechanical spring reset method		No			Yes			Yes <sup>5)</sup>	–	Yes	Yes	
Port: in-line valve	1, 2, 3, 4, 5	G $\frac{1}{4}$										
	12, 14	M5										
Vacuum operation at port 1		No			Only with external pilot air supply							
Design		Piston spool valve										
Type of mounting		Via through-holes <sup>6)</sup>										
Electrical connection		Via E-box										
Nominal operating voltage	[V DC]	5, 12 and 24 ±10%										
Power	[W]	1, reduced to 0.35 with holding current reduction										
Duty cycle ED	[%]	100										
Degree of protection to EN 60529		IP40 (with plug socket), IP65 (with M8)										

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 gap of 0.3 mm must be ensured by placing spacer discs between them.

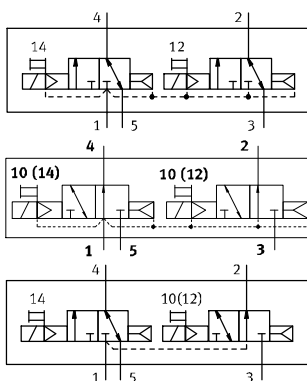
## Operating conditions

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

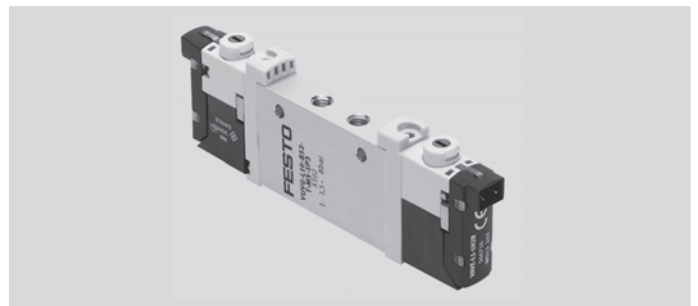
Housing		Wrought aluminium alloy	
Seals		HNBR, NBR	

## Data sheet – 2x3/2-way valve



Normally closed, internal or external pilot air supply

Normally open, internal or external pilot air supply

1x normally closed,  
1x normally open,  
internal or external pilot air supply

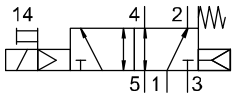
## Technical data

Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function		T32-A	T32-M
Operating pressure	Internal	[bar]	1.5 ... 8
	External	[bar]	1.5 ... 10
Pilot pressure <sup>7)</sup>		[bar]	1.5 ... 8
Standard nominal flow rate		[l/min]	1000
Flow rate on manifold rail M5		[l/min]	1000
Switching time on/off		[ms]	13/27

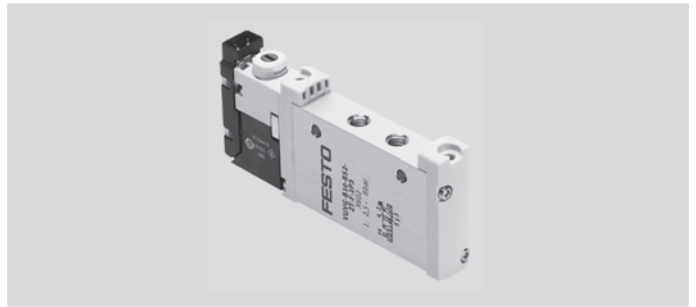
7) Minimum pilot pressure 50% of operating pressure

# Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G<sup>1</sup>/<sub>4</sub>

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



Internal or external pilot air supply

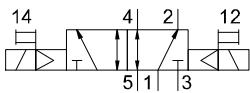


Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function			M52-R	M52-M
Operating pressure	Internal	[bar]	2.5 ... 8	3 ... 8
	External	[bar]	-0.9 ... +10	-0.9 ... +8
Pilot pressure <sup>1)</sup>		[bar]	2.5 ... 8	3 ... 8
Standard nominal flow rate		[l/min]	1300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

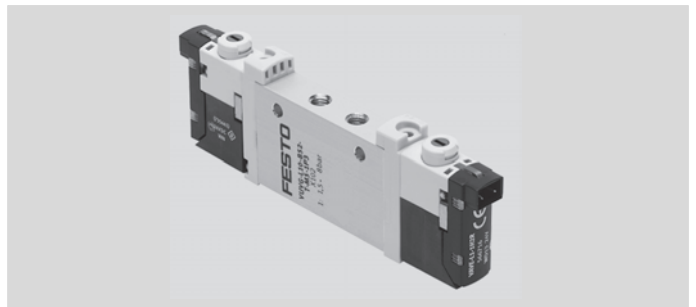
8

1) Minimum pilot pressure 50% of operating pressure

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



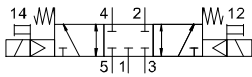
Internal or external pilot air supply



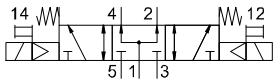
Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function			B52	
Operating pressure	Internal	[bar]	1.5 ... 8	
	External	[bar]	-0.9 ... +10	
Pilot pressure <sup>2)</sup>		[bar]	1.5 ... 8	
Standard nominal flow rate		[l/min]	1380	
Flow rate on manifold rail		[l/min]	1380	
Changeover time		[ms]	11	

2) Minimum pilot pressure 50% of operating pressure

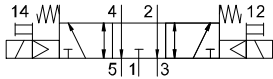
**Data sheet – 5/3-way valve**



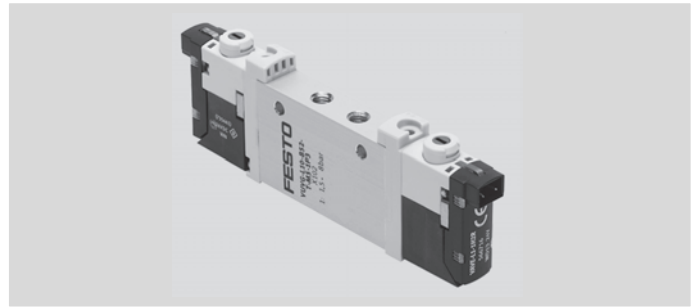
Normally closed,  
internal or external pilot air supply



Normally open,  
internal or external pilot air supply



Normally exhausted,  
internal or external pilot air supply




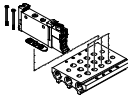
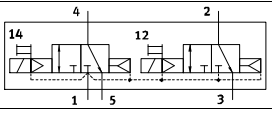
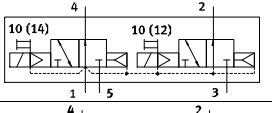
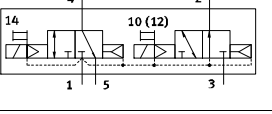
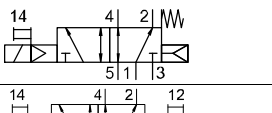
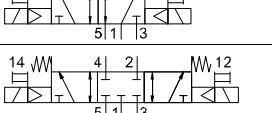
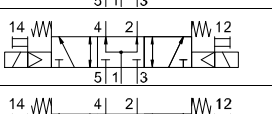
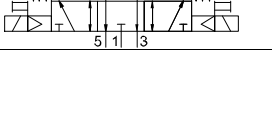
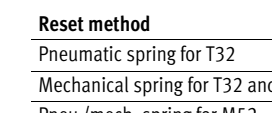



Download CAD data → [www.festo.com](http://www.festo.com)




Technical data			P53
Valve function			
Operating pressure	Internal	[bar]	3 ... 8
	External	[bar]	-0.9 ... +10
Pilot pressure <sup>1)</sup>		[bar]	3 ... 8
Standard nominal flow rate M5		[l/min]	1000 ... 1200
Flow rate on manifold rail M5		[l/min]	1000 ... 1200
Switching time on/off		[ms]	15/48
Changeover time		[ms]	29

1) Minimum pilot pressure 50% of operating pressure

# Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G<sup>1</sup>/<sub>4</sub>






## Order code

<b>VUVG</b>	-	<b>18</b>	-	-	-	-	-	-	-	-	-	<b>L</b>	-
<b>Valve design</b>		<b>L</b>											
	In-line, individual valve												
	In-line, manifold valve incl. seal and screws												
<b>Width</b>		<b>18</b>											
<b>Valve functions<sup>5)</sup></b>													
	<b>T32C</b>												
	<b>T32U</b>												
	<b>T32H</b>												
	<b>M52</b>												
	<b>B52</b>												
	<b>P53C</b>												
	<b>P53U</b>												
	<b>P53E</b>												
<b>Reset method</b>													
Pneumatic spring for T32		<b>A</b>											
Mechanical spring for T32 and M52		<b>M</b>											
Pneu./mech. spring for M52		<b>R</b>											
With B52 and P53		-											
<b>Pilot air supply</b>													
Internal		-											
External		<b>Z</b>											
<b>Manual override</b>													
	Non-detenting	<b>H</b>											
	Covered	<b>S</b>											
-	Non-detenting, detenting	<b>T</b>											
	Detenting	<b>Y</b>											

<b>Connecting cable</b>	
<b>W1...4<sup>1)</sup></b>	Connection pattern H, unsheathed 
<b>C1...4<sup>1)</sup></b>	Connection pattern H, sheathed 
<b>N1...4<sup>6)</sup></b>	M8x1, 3-pin 

<b>Display</b>	
<b>L</b>	LED

<b>Protective circuit</b>	
-	Without holding current reduction (HCR)
<b>R<sup>2)</sup></b>	With holding current reduction (HCR)

<b>E-box</b>	
<b>H2</b>	Connection pattern H, horizontal plug 
<b>H3</b>	Connection pattern H, vertical plug 
<b>L1...4</b>	With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m 
<b>R8</b>	Individual plug M8, 3-pin, without HCR 
<b>P3</b>	Without E-box 

<b>Nominal operating voltage</b>	
<b>1</b>	24 V DC
<b>5</b>	12 V DC
<b>4</b>	5 V DC

<b>Exhausting with VUVG-L</b>	
<b>QN</b>	QS if QS <sup>3)</sup>
<b>U</b>	Silencer
-	M5 or M7

Pneumatic port	Flow rate [l/min] <sup>4)</sup>
<b>G14</b> Thread G <sup>1</sup> / <sub>4</sub>	1380
<b>Q6</b> Push-in connector 6 mm/G <sup>1</sup> / <sub>4</sub>	400
<b>Q8</b> Push-in connector 8 mm/G <sup>1</sup> / <sub>4</sub>	800
<b>Q10</b> Push-in connector 10 mm/G <sup>1</sup> / <sub>4</sub>	1100
<b>T14</b> Push-in connector 1/4"	
<b>T38</b> Push-in connector 3/8"	
<b>T516</b> Push-in connector 5/16"	

1) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m.  
2) At 24 V DC, not in combination with P3.

3) If Q... is chosen for the pneumatic connection, this also applies to the exhaust ports 3 and 5.  
4) Flow rate applies to 5/2-way individual valve.

5) Circuit symbol for internal pilot air supply.  
6) Straight: N1 = 2.5 m, N2 = 5 m. Angled: N3 = 2.5 m, N4 = 5 m.

**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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

**★ Quick ordering<sup>1)</sup>**

Part no.	Type
<b>In-line valve G<sup>1</sup>/<sub>4</sub>, 3/2-way valve</b>	
574422	VUVG-L18-T32C-AT-G14-1P3
8031525	VUVG-L18-T32C-AT-G14-1R8L
<b>In-line valve G<sup>1</sup>/<sub>4</sub>, 5/2-way valve, single solenoid</b>	
574428	VUVG-L18-M52-RT-G14-1P3
8031531	VUVG-L18-M52-RT-G14-1R8L
8031532	VUVG-L18-M52-MT-G14-1R8L

Part no.	Type
<b>In-line valve G<sup>1</sup>/<sub>4</sub>, 5/2-way valve, double solenoid</b>	
574430	VUVG-L18-B52-T-G14-1P3
<b>In-line valve G<sup>1</sup>/<sub>4</sub>, 5/3-way valve</b>	
574431	VUVG-L18-P53C-T-G14-1P3
8031534	VUVG-L18-P53C-T-G14-1R8L

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

# Solenoid valves VUVG-L18 and VUVG-S18, in-line valves G<sup>1</sup>/<sub>4</sub>

## Accessories – Ordering data

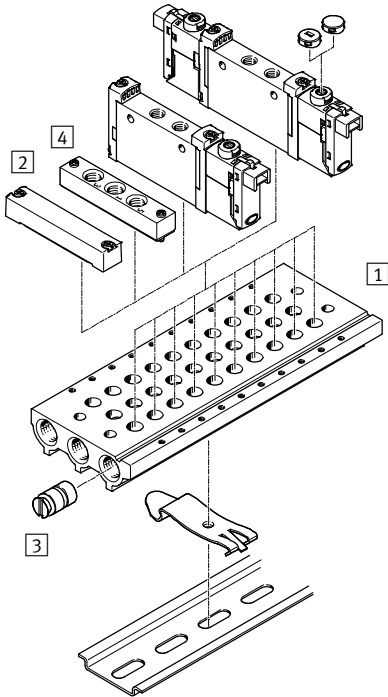
### Order code – Manifold rails

VABM	-	L1	-	18	S	-	G38	-
Valve manifold parts								
Manifold rail	VABM							
Valve series								
VUVG	L1							
Valve width	18 mm		18					
Manifold rail with port 1, 3, 5								
For G <sup>1</sup> / <sub>4</sub> in-line valves			S					

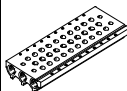



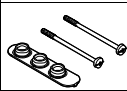
  

Number of valve positions	2 to 10, 12, 14 and 16	
Port 1, 3, 5	G38 G <sup>3</sup> / <sub>8</sub>	

### Manifold assembly



8

		Part no.	Type	
<b>1 Manifold rail</b> 	for G <sup>1</sup> / <sub>4</sub>	★ 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	
	<b>2 Blanking plate</b>			
		for G <sup>1</sup> / <sub>4</sub>	★ 574482	VABB-L1-18
<b>3 Blanking plug</b>				
	Separator for pressure zones	574483	VABD-14-B	
<b>4 Supply plate</b>				
	for G <sup>1</sup> / <sub>4</sub>	574481	VABF-L1-18-P3A4-G14	
<b>Seals for in-line valves (10 pieces incl. 20 screws)</b>				
	for G <sup>1</sup> / <sub>4</sub>	★ 574479	VABD-L1-18X-S-G14	



## Data sheet

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

- 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.

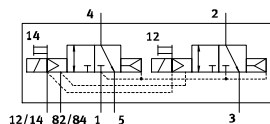
## Operating conditions

Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium 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

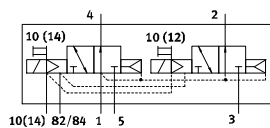
## Materials

Housing		Wrought aluminium alloy
Seals		HNBR, NBR

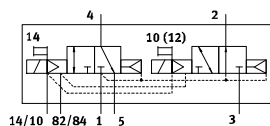
## Data sheet – 2x3/2-way valve



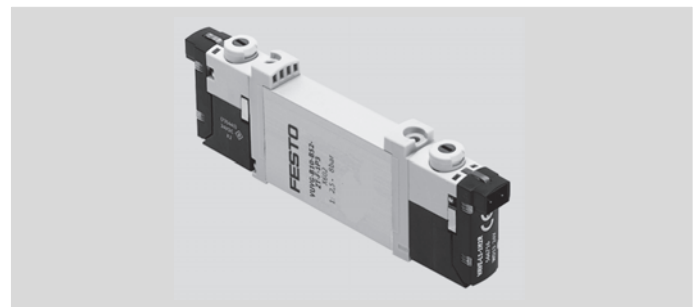
Normally closed,  
external pilot air supply<sup>7)</sup>



Normally open,  
external pilot air supply<sup>7)</sup>



1x normally closed,  
1x normally open,  
external pilot air supply<sup>7)</sup>

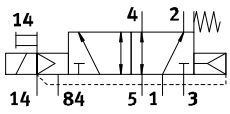


Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function		T32-A	T32-M
Operating pressure	Internal [bar]	1.5 ... 8	3 ... 8
	External [bar]	1.5 ... 10	–0.9 ... +10
Pilot pressure <sup>6)</sup>	[bar]	1.5 ... 8	2 ... 8
Standard nominal flow rate	[l/min]	170	140 ... 150
Flow rate on manifold rail M5	[l/min]	150	120 ... 130
Flow rate on manifold rail M7	[l/min]	160	130 ... 140
Switching time on/off	[ms]	6/16	8/11

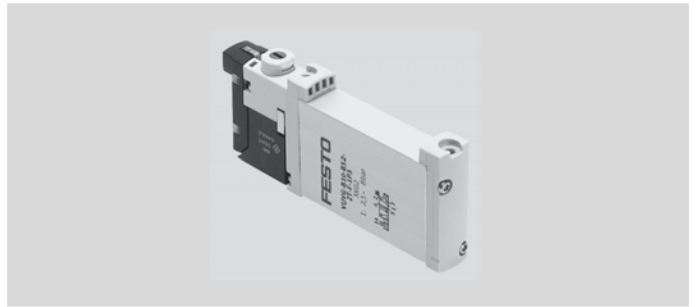
- 6) Minimum pilot pressure 50% of operating pressure.  
 7) Internal pilot air can be selected via sub-base.

# Solenoid valves VUVG-B10, sub-base valves

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



External pilot air supply<sup>2)</sup>



### Technical data

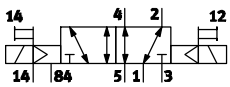
Download CAD data → [www.festo.com](http://www.festo.com)

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 <sup>1)</sup>		[bar]	2.5 ... 8	3 ... 8
Standard nominal flow rate		[l/min]	330	285
Flow rate on manifold rail M5		[l/min]	210	180
Flow rate on manifold rail M7		[l/min]	270	230
Switching time on/off		[ms]	7/19	8/24

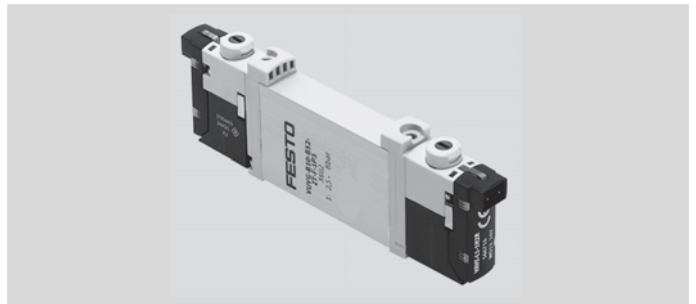
8

- 1) Minimum pilot pressure 50% of operating pressure.
- 2) Internal pilot air can be selected via sub-base.

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



External pilot air supply<sup>4)</sup>



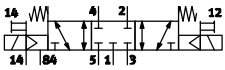
### Technical data

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

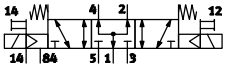
Valve function			B52
Operating pressure	Internal	[bar]	1.5 ... 8
	External	[bar]	-0.9 ... +10
Pilot pressure <sup>3)</sup>		[bar]	1.5 ... 8
Standard nominal flow rate		[l/min]	330
Flow rate on manifold rail M5		[l/min]	210
Flow rate on manifold rail M7		[l/min]	270
Changeover time		[ms]	7

- 3) Minimum pilot pressure 50% of operating pressure.
- 4) Internal pilot air can be selected via sub-base.

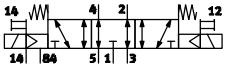
## Data sheet – 5/3-way valve



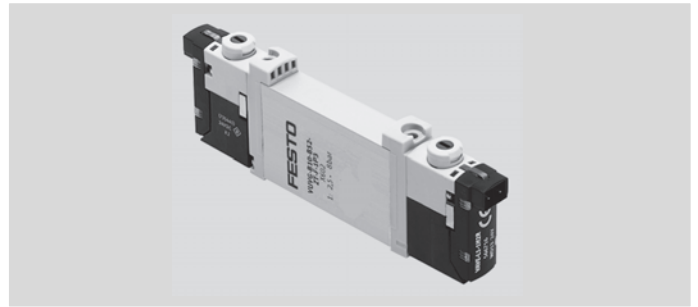
Normally closed,  
External pilot air supply<sup>2)</sup>



Normally open,  
External pilot air supply<sup>2)</sup>



Normally exhausted,  
External pilot air supply<sup>2)</sup>



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

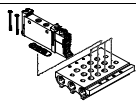



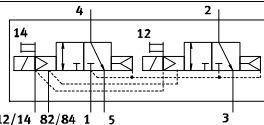
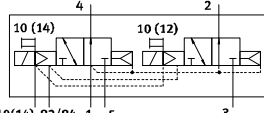
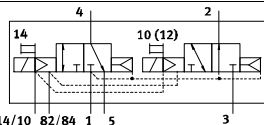
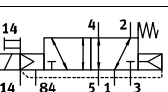
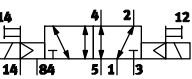
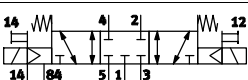
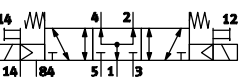
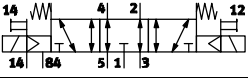








Technical data			P53
Valve function			
Operating pressure	Internal	[bar]	3 ... 8
	External	[bar]	-0.9 ... +10
Pilot pressure <sup>1)</sup>		[bar]	3 ... 8
Standard nominal flow rate		[l/min]	300
Flow rate on manifold rail M5		[l/min]	200
Flow rate on manifold rail M7		[l/min]	250
Switching time on/off		[ms]	10/30
Changeover time		[ms]	16

1) Minimum pilot pressure 50% of operating pressure.

2) Internal pilot air can be selected via sub-base.

# Solenoid valves VUVG-B10, sub-base valves

## Order code

VUVG	-	B	10	-	-	Z	-	F	-	-	-	L	-
<b>Valve design</b>													
 <p>Sub-base, manifold valve incl. seal and screws</p>													<b>Connecting cable</b> <b>W1...4<sup>1)</sup></b> Connection pattern H, unsheathed  <b>C1...4<sup>1)</sup></b> Connection pattern H, sheathed  <b>N1...4<sup>4)</sup></b> M8x1, 3-pin 
<b>Width</b>													
10 mm													10
<b>Valve functions<sup>3)</sup></b>													
													T32C
													T32U
													T32H
													M52
													B52
													P53C
													P53U
													P53E
<b>Reset method</b>													
Pneumatic spring for T32													A
Mechanical spring for T32 and M52													M
Pneu./mech. spring for M52													R
With B52 and P53													-
<b>Pilot air supply port</b>													
External													Z
<b>Manual override</b>													
 Non-detenting													H
 Covered													S
- Non-detenting, detenting													T
 Detenting													Y
<b>Protective circuit</b>													
-													Without holding current reduction (HCR)
R <sup>2)</sup>													With holding current reduction (HCR)
<b>E-box</b>													
H2													Connection pattern H, horizontal plug 
H3													Connection pattern H, vertical plug 
L1...4													With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m 
R8													Individual plug M8, 3-pin, without HCR 
P3													Without E-box 
<b>Nominal operating voltage</b>													
1													24 V DC
5													12 V DC
4													5 V DC
<b>Pneumatic connection</b>													
F													In the manifold rail

8

1) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m.

2) At 24 V DC.  
3) Circuit symbol for internal pilot air supply.

4) Straight: N1 = 2.5 m, N2 = 5 m  
Angled: N3 = 2.5 m, N4 = 5 m.

## 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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

★ Quick ordering<sup>1)</sup>

Part no.	Type
<b>Sub-base valve B10, 3/2-way valve</b>	
566487	VUVG-B10-T32C-AZT-F-1P3
574234	VUVG-B10-T32C-AZT-F-1R8L
<b>Sub-base valve B10, 5/2-way valve, single solenoid</b>	
566490	VUVG-B10-M52-RZT-F-1P3
574237	VUVG-B10-M52-RZT-F-1R8L

Part no.	Type
<b>Sub-base valve B10, 5/2-way valve, double solenoid</b>	
566491	VUVG-B10-B52-ZT-F-1P3
574238	VUVG-B10-B52-ZT-F-1R8L
<b>Sub-base valve B10, 5/3-way valve</b>	
566492	VUVG-B10-P53C-ZT-F-1P3
574239	VUVG-B10-P53C-ZT-F-1R8L

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

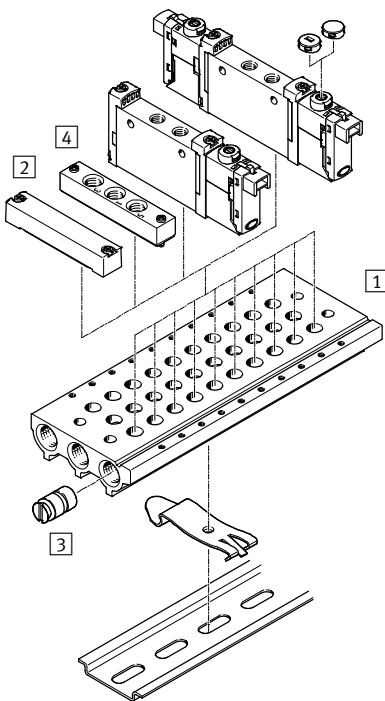
# Solenoid valves VUVG-B10, sub-base valves

## Accessories – Ordering data

### Order code – Manifold rails

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

### Manifold assembly



8

		Part no.	Type
<b>1</b> Manifold rail 	For 10 W (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
<b>1</b> Manifold rail 	For 10 HW (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
		<b>2</b> Blanking plate 	For 10 W/10 HW
<b>3</b> Blanking plug 	Separator for pressure zones	569994	VABD-6-B
<b>4</b> Supply plate 	For 10 W	569991	VABF-L1-10-P3A4-M5
	for 10 HW	569992	VABF-L1-10-P3A4-M7
<b>Seals for in-line valves (10 pieces incl. 20 screws)</b>			
	For 10 W/10 HW	566674	VABD-L1-10B-S-M7

# Solenoid valves VUVG-B14, sub-base valves



## Data sheet

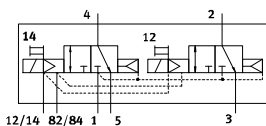
Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>											
Valve function		T32-A			T32-M			M52-A	B52	M52-M	P53		
Normal position		C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	–	–	–	C <sup>1)</sup>	U <sup>2)</sup>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

- 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.

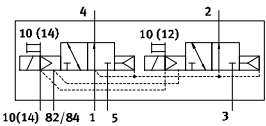
Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)
Ambient temperature	[°C] –5 ... +50, –5 ... +60 with holding current reduction
Temperature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

Materials	
Housing	Wrought aluminium alloy
Seals	HNBR, NBR

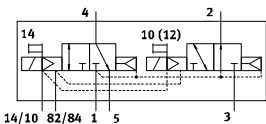
## Data sheet – 2x3/2-way valve



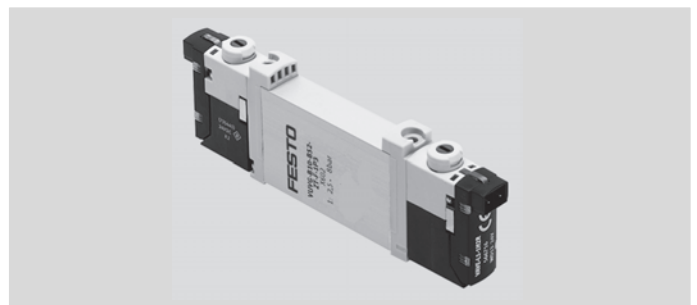
Normally closed, external pilot air supply<sup>6)</sup>



Normally open, external pilot air supply<sup>6)</sup>



1x normally closed, 1x normally open, external pilot air supply<sup>6)</sup>

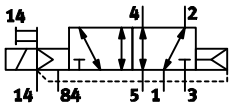


Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function		T32-A	T32-M
Operating pressure	Internal	[bar] 1.5 ... 8	3 ... 8
	External	[bar] 1.5 ... 10	–0.9 ... +10
Pilot pressure <sup>5)</sup>	[bar]	1.5 ... 8	2 ... 8
Standard nominal flow rate	[l/min]	580 ... 600	450 ... 470
Flow rate on manifold rail	[l/min]	510 ... 540	410 ... 430
Switching time on/off	[ms]	8/23	11/15

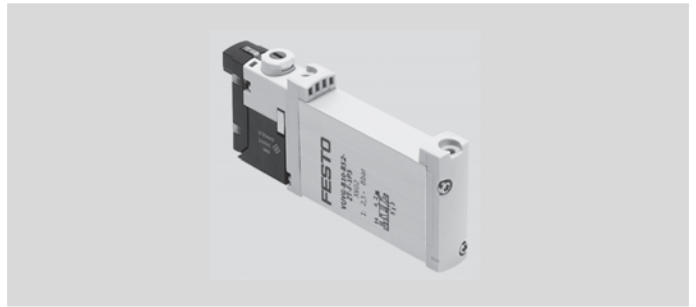
- 5) Minimum pilot pressure 50% of operating pressure.
- 6) Internal pilot air can be selected via sub-base

# Solenoid valves VUVG-B14, sub-base valves

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



External pilot air supply<sup>2)</sup>

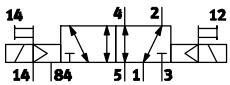


Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function			M52-A	M52-M
Operating pressure	Internal	[bar]	2.5 ... 8	3 ... 8
	External	[bar]	-0.9 ... +10	-0.9 ... +10
Pilot pressure <sup>1)</sup>		[bar]	2.5 ... 8	3 ... 8
Standard nominal flow rate		[l/min]	630	680
Flow rate on manifold rail		[l/min]	520	580
Switching time on/off		[ms]	14/22	13/35

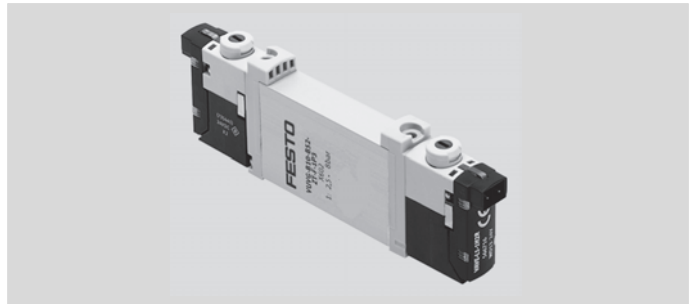
- 1) Minimum pilot pressure 50% of operating pressure.
- 2) Internal pilot air can be selected via sub-base.

8

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



External pilot air supply<sup>4)</sup>

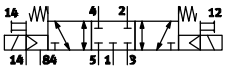


Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function			B52	
Operating pressure	Internal	[bar]	1.5 ... 8	
	External	[bar]	-0.9 ... +10	
Pilot pressure <sup>3)</sup>		[bar]	1.5 ... 8	
Standard nominal flow rate		[l/min]	680	
Flow rate on manifold rail		[l/min]	580	
Changeover time		[ms]	8	

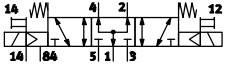
- 3) Minimum pilot pressure 50% of operating pressure.
- 4) Internal pilot air can be selected via sub-base.



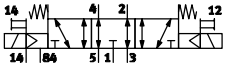
## Data sheet – 5/3-way valve



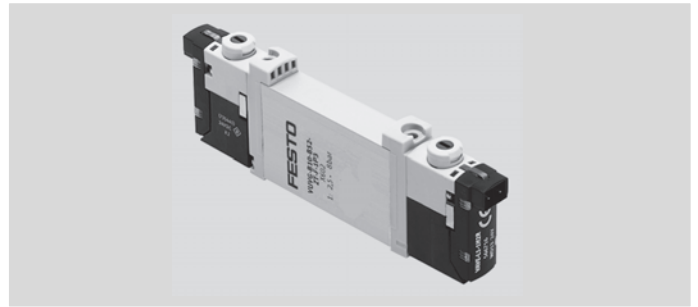
Normally closed,  
external pilot air supply<sup>2)</sup>



Normally open,  
external pilot air supply<sup>2)</sup>



Normally exhausted,  
external pilot air supply<sup>2)</sup>



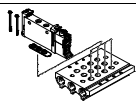
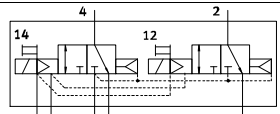
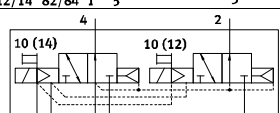
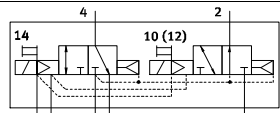
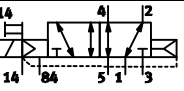
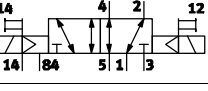
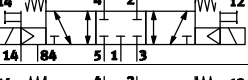
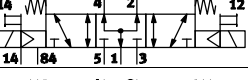
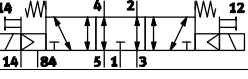











Download CAD data → [www.festo.com](http://www.festo.com)

Technical data			P53
Valve function			P53
Operating pressure	Internal	[bar]	3 ... 8
	External	[bar]	-0.9 ... +10
Pilot pressure <sup>1)</sup>		[bar]	3 ... 8
Standard nominal flow rate		[l/min]	580 ... 600
Flow rate on manifold rail		[l/min]	510 ... 540
Switching time on/off		[ms]	12/40
Changeover time		[ms]	20

- 1) Minimum pilot pressure 50% of operating pressure.  
2) Internal pilot air can be selected via sub-base.

# Solenoid valves VUVG-B14, sub-base valves

## Order code

VUVG	-	B	14	-	-	Z	-	F	-	-	-	-	L	-
<b>Valve design</b>														
	B													
Sub-base, manifold valve incl. seal and screws														
<b>Width</b>														
14 mm													14	
<b>Valve functions<sup>3)</sup></b>														
	T32C													
	T32U													
	T32H													
	M52													
	B52													
	P53C													
	P53U													
	P53E													
<b>Reset method</b>														
Pneumatic spring for T32 and M52													A	
Mechanical spring for T32 and M52													M	
With B52 and P53													-	
<b>Pilot air supply port</b>														
External													Z	
<b>Manual override</b>														
	Non-detenting												H	
	Covered												S	
-	Non-detenting, detenting												T	
	Detenting												Y	
<b>Connecting cable</b>														
W1...4 <sup>1)</sup> Connection pattern H, unsheathed														
C1...4 <sup>1)</sup> Connection pattern H, sheathed														
N1...4 <sup>4)</sup> M8x1, 3-pin														
<b>Display</b>														
L LED														
<b>Protective circuit</b>														
- Without holding current reduction (HCR)														
R <sup>2)</sup> With holding current reduction (HCR)														
<b>E-box</b>														
H2 Connection pattern H, horizontal plug														
H3 Connection pattern H, vertical plug														
L1...4 With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m														
R8 Individual plug M8, 3-pin, without HCR														
P3 Without E-box														
<b>Nominal operating voltage</b>														
1 24 V DC														
5 12 V DC														
4 5 V DC														
<b>Pneumatic connection</b>														
F In the manifold rail														

8

1) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m.

2) At 24 V DC.  
3) Circuit symbol for internal pilot air supply.

4) Straight: N1 = 2.5 m, N2 = 5 m  
Angled: N3 = 2.5 m, N4 = 5 m.

## 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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

★ Quick ordering<sup>1)</sup>

Part no.	Type
<b>Sub-base valve B14, 3/2-way valve</b>	
566513	VUVG-B14-T32C-AZT-F-1P3
574242	VUVG-B14-T32C-AZT-F-1R8L
<b>Sub-base valve B14, 5/2-way valve, single solenoid</b>	
566516	VUVG-B14-M52-AZT-F-1P3
574245	VUVG-B14-M52-AZT-F-1R8L

Part no.	Type
<b>Sub-base valve B14, 5/2-way valve, double solenoid</b>	
566517	VUVG-B14-B52-ZT-F-1P3
574246	VUVG-B14-B52-ZT-F-1R8L
<b>Sub-base valve B14, 5/3-way valve</b>	
566518	VUVG-B14-P53C-ZT-F-1P3
574247	VUVG-B14-P53C-ZT-F-1R8L

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

# Solenoid valves VUVG-B14, sub-base valves

## Accessories – Ordering data

### Order code – Manifold rails

VABM	-	L1	-	14	W	-	G14	-
<b>Valve manifold parts</b>								
Manifold rail	VABM							
<b>Valve series</b>								
VUVG	L1							
<b>Valve width</b>								
14 mm								14
<b>Manifold rail with port 1, 3, 5</b>								
For G $\frac{1}{8}$ in-line valves							W	

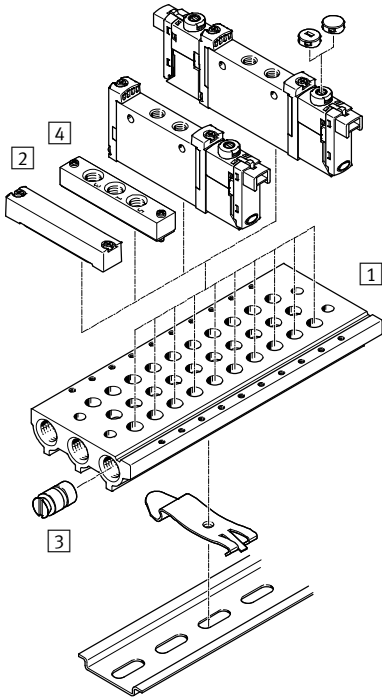
  

<b>Number of valve positions</b>	
2 to 10, 12, 14 and 16	

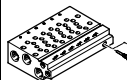




  

<b>Port 1, 3, 5</b>	
G14	G $\frac{1}{4}$

### Manifold assembly



8

		Part no.	Type
<b>1 Manifold rail</b>			
	For 14 W (G $\frac{1}{8}$ )	★ 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
		<b>2 Blanking plate</b>	
	For 14 W	★ 569989	VABB-L1-14
<b>3 Blanking plug</b>			
	Separator for pressure zones	569996	VABD-10-B
<b>4 Supply plate</b>			
	For 14 W	569993	VABF-L1-14-P3A4-G18
<b>Seals for in-line valves (10 pieces incl. 20 screws)</b>			
	For 14 W	566676	VABD-L1-14B-S-G18

## Data sheet

Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>								
Valve function	T32-A			T32-M			M52-R	B52	M52-M	P53	
Normal position	C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	C <sup>1)</sup>	U <sup>2)</sup>	H <sup>4)</sup>	–	–	–	C <sup>1)</sup>	U <sup>2)</sup> E <sup>3)</sup>
Pneumatic spring reset method	Yes			No			Yes <sup>5)</sup>	–	No	No	
Mechanical spring reset method	No			Yes			Yes <sup>5)</sup>	–	Yes	Yes	
Port	1, 3, 5			G $\frac{3}{8}$ in manifold rail							
	2, 4			G $\frac{1}{4}$ in manifold rail							
	12/14, 82/84			M5 in manifold rail							
Vacuum operation at port 1	No			Only with external pilot air supply							
Design	Piston spool valve										
Type of mounting	On manifold rail										
Electrical connection	Via E-box										
Nominal operating voltage	[V DC]	5, 12 and 24 ±10%									
Power	[W]	1, reduced to 0.35 with holding current reduction									
Duty cycle ED	[%]	100									
Degree of protection to EN 60529	IP40 (with plug socket)										

- 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.

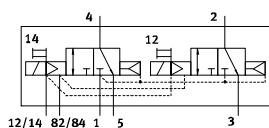
### Operating conditions

Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating/pilot medium	Operation with lubricated medium 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

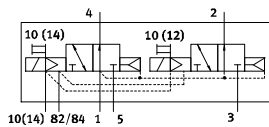
### Materials

Housing	Wrought aluminium alloy
Seals	HNBR, NBR

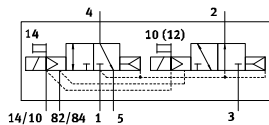
## Data sheet – 2x3/2-way valve



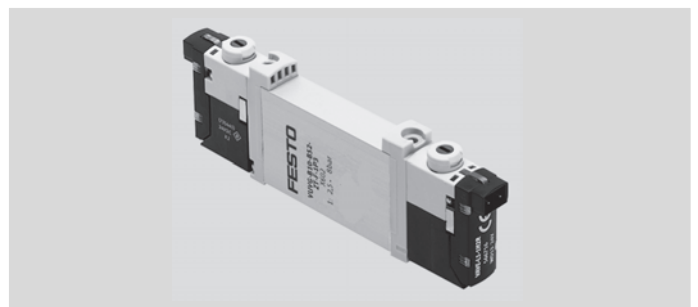
Normally closed,  
external pilot air supply<sup>7)</sup>



Normally open,  
external pilot air supply<sup>7)</sup>



1x normally closed,  
1x normally open,  
external pilot air supply<sup>7)</sup>

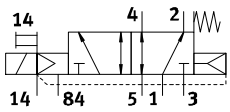


Technical data			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Valve function	T32-A		T32-M	
Operating pressure	Internal	[bar]	1.5 ... 8	3.5 ... 8
	External	[bar]	1.5 ... 10	–0.9 ... +10
Pilot pressure <sup>6)</sup>		[bar]	1.5 ... 8	3 ... 8
Standard nominal flow rate		[l/min]	900	900
Flow rate on manifold rail		[l/min]	800	800
Switching time on/off		[ms]	13/27	15/22

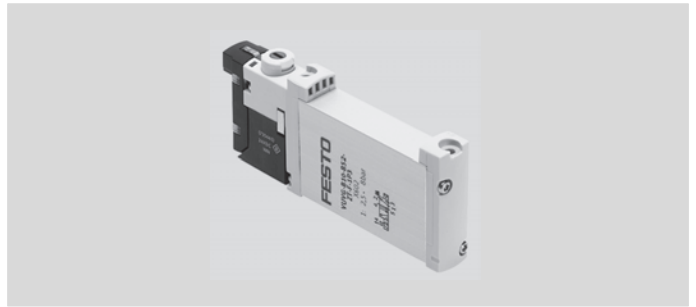
- 6) Minimum pilot pressure 50% of operating pressure.
- 7) Internal pilot air can be selected via sub-base.

# Solenoid valves VUVG-B18, sub-base valves

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



External pilot air supply<sup>2)</sup>



### Technical data

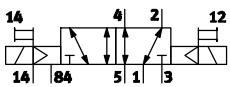
Download CAD data → [www.festo.com](http://www.festo.com)

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 <sup>1)</sup>		[bar]	2.5 ... 8	3 ... 8
Standard nominal flow rate		[l/min]	1150	1150
Flow rate on manifold rail		[l/min]	1000	1000
Switching time on/off		[ms]	15/31	10/45

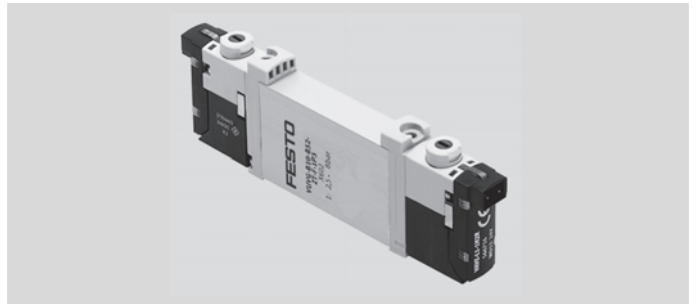
- 1) Minimum pilot pressure 50% of operating pressure.
- 2) Internal pilot air can be selected via sub-base.

8

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



External pilot air supply<sup>4)</sup>



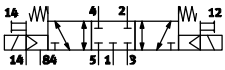
### Technical data

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

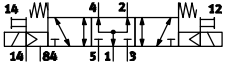
Valve function			B52
Operating pressure	Internal	[bar]	1.5 ... 8
	External	[bar]	-0.9 ... +10
Pilot pressure <sup>3)</sup>		[bar]	1.5 ... 8
Standard nominal flow rate		[l/min]	1150
Flow rate on manifold rail		[l/min]	1000
Changeover time		[ms]	11

- 3) Minimum pilot pressure 50% of operating pressure.
- 4) Internal pilot air can be selected via sub-base.

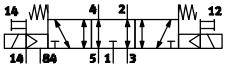
## Data sheet – 5/3-way valve



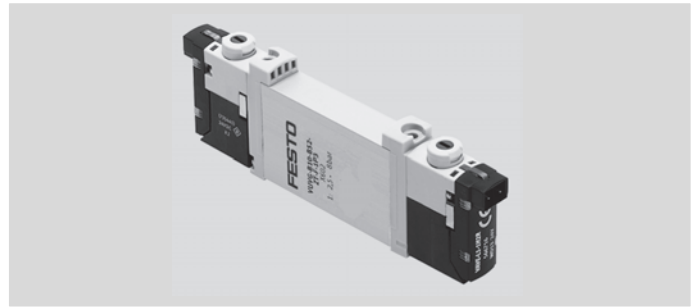
Normally closed,  
external pilot air supply<sup>2)</sup>



Normally open,  
external pilot air supply<sup>2)</sup>



Normally exhausted,  
external pilot air supply<sup>2)</sup>



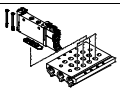
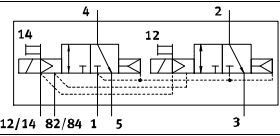
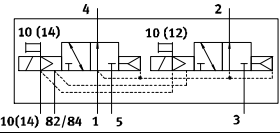
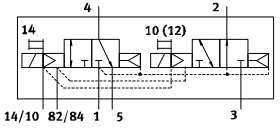
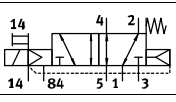
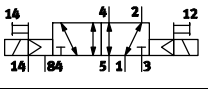
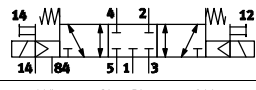
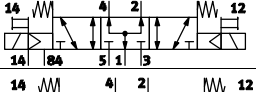
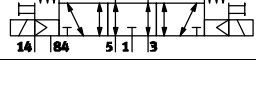











Download CAD data → [www.festo.com](http://www.festo.com)

Technical data			P53
Valve function			
Operating pressure	Internal	[bar]	3 ... 8
	External	[bar]	-0.9 ... +10
Pilot pressure <sup>1)</sup>		[bar]	3 ... 8
Standard nominal flow rate		[l/min]	1080
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.  
2) Internal pilot air can be selected via sub-base.

# Solenoid valves VUVG-B18, sub-base valves

## Order code

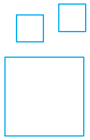
VUVG	-	B	18	-	-	Z	-	F	-	-	-	L	-
<b>Valve design</b>													
 <p>Sub-base, manifold valve incl. seal and screws</p>													
<b>Width</b>													
18 mm <span style="float: right;">18</span>													
<b>Valve functions<sup>3)</sup></b>													
										T32C			
										T32U			
										T32H			
										M52			
										B52			
										P53C			
										P53U			
										P53E			
<b>Reset method</b>													
Pneumatic spring for T32										A			
Mechanical spring for T32 and M52										M			
Pneu./mech. spring for M52										R			
With B52 and P53										-			
<b>Pilot air supply port</b>													
External										Z			
<b>Manual override</b>													
 Non-detenting										H			
 Covered										S			
- Non-detenting, detenting										T			
 Detenting										Y			
<b>Connecting cable</b>													
W1...4 <sup>1)</sup>										Connection pattern H, unsheathed 			
C1...4 <sup>1)</sup>										Connection pattern H, sheathed 			
N1...4 <sup>4)</sup>										M8x1, 3-pin 			
<b>Display</b>													
L										LED			
<b>Protective circuit</b>													
-										Without holding current reduction (HCR)			
R <sup>2)</sup>										With holding current reduction (HCR)			
<b>E-box</b>													
H2										Connection pattern H, horizontal plug 			
H3										Connection pattern H, vertical plug 			
L1...4										With 2x flying leads L: 1 = 0.5 m, 2 = 1 m, 3 = 2.5 m, 4 = 5 m 			
R8										Individual plug M8, 3-pin, without HCR 			
P3										Without E-box 			
<b>Nominal operating voltage</b>													
1										24 V DC			
5										12 V DC			
4										5 V DC			
<b>Pneumatic connection</b>													
F										In the manifold rail			

1) W1/C1 = 0.5 m, W2/C2 = 1 m, W3/C3 = 2.5 m, W4/C4 = 5 m.

2) At 24 V DC  
3) Circuit symbol for internal pilot air supply

4) Straight: N1 = 2.5 m, N2 = 5 m  
Angled: N3 = 2.5 m, N4 = 5 m.



**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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

★ **Quick ordering<sup>1)</sup>**

Part no.	Type
<b>Sub-base valve B10, 3/2-way valve</b>	
574443	VUVG-B18-T32C-AZT-F-1P3
8031537	VUVG-B18-T32C-AZT-F-1R8L
<b>Sub-base valve B10, 5/2-way valve, single solenoid</b>	
574449	VUVG-B18-M52-RZT-F-1P3
8031543	VUVG-B18-M52-RZT-F-1R8L

Part no.	Type
<b>Sub-base valve B10, 5/2-way valve, double solenoid</b>	
574451	VUVG-B18-B52-ZT-F-1P3
8031545	VUVG-B18-B52-ZT-F-1R8L
<b>Sub-base valve B10, 5/3-way valve</b>	
574452	VUVG-B18-P53C-ZT-F-1P3
8031546	VUVG-B18-P53C-ZT-F-1R8L

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

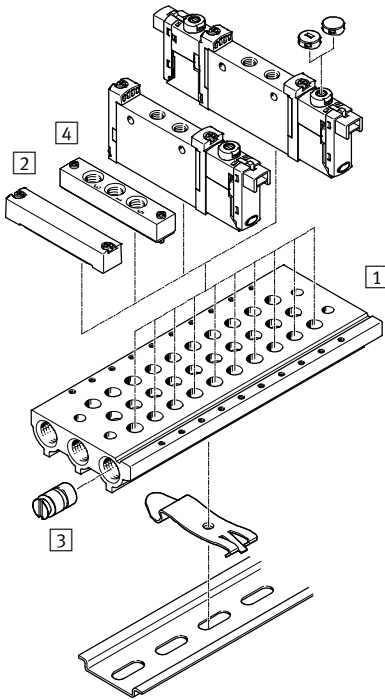
# Solenoid valves VUVG-B18, sub-base valves

## Accessories – Ordering data

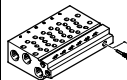




### Order code – Manifold rails

VABM	-	L1	-	18	W	-	G38	-
<b>Valve manifold parts</b>						<b>Number of valve positions</b>		
Manifold rail	VABM		2 to 10, 12, 14 and 16					
<b>Valve series</b>						<b>Port 1, 3, 5</b>		
VUVG	L1		G38 G <sup>3</sup> / <sub>8</sub>					
<b>Valve width</b>								
18 mm			18					
<b>Manifold rail with ports 1, 2, 3, 4, 5, 12/14, 82/84</b>								
Port 2 and 4 in G <sup>1</sup> / <sub>8</sub>						W		

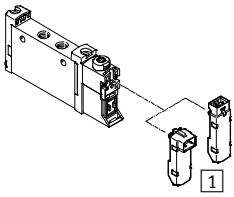
### Manifold assembly



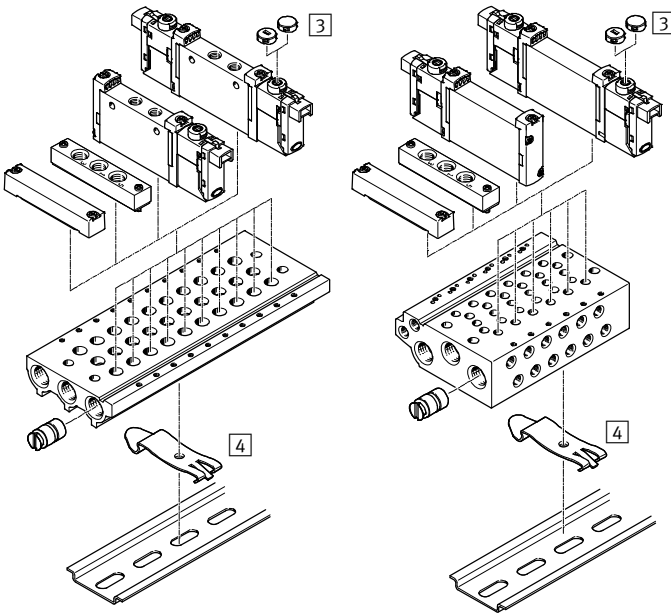
8

		Part no.	Type
	1 Manifold rail for 18 W (G <sup>1</sup> / <sub>4</sub> )	★ 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 18 W
	3 Blanking plug Separator for pressure zones	574483	VABD-14-B
	4 Supply plate For 18 W	574481	VABF-L1-18-P3A4-G14
<b>Seals for in-line valves (10 pieces incl. 20 screws)</b>			For 18 W 574480 VABD-L1-18B-S-G14

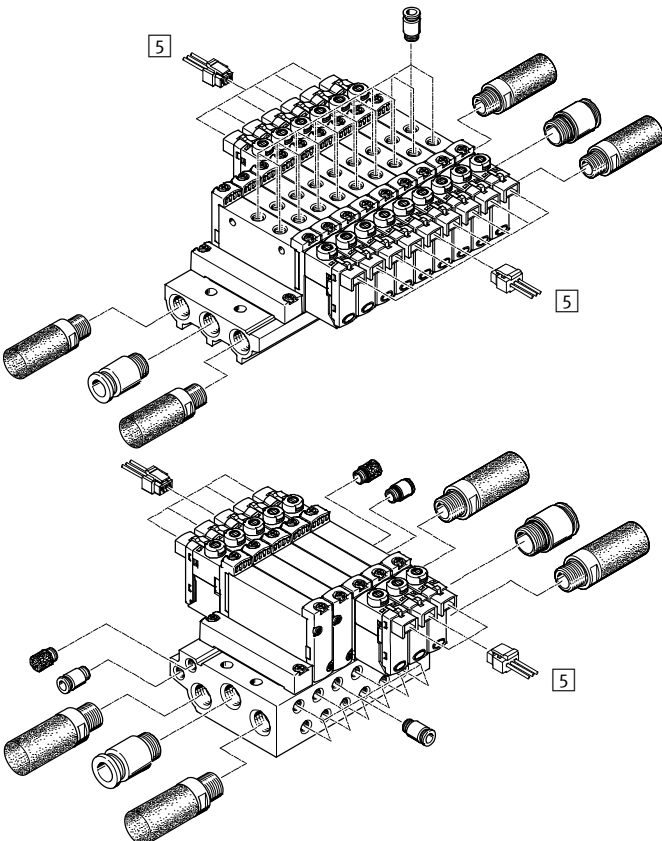
E-boxes



System overview



Accessories overview



Accessories – Ordering data

		Part no.	Type
<b>1 E-boxes,</b>			
<b>E-boxes, H2</b>			
	12/24 V DC	★ 566714	VAVE-L1-1VH2-LP
	24 V DC	★ 566716	VAVE-L1-1H2-LR
<b>E-box H3</b>			
	12/24 V DC	566715	VAVE-L1-1VH3-LP
	24 V DC	566717	VAVE-L1-1H3-LR
<b>E-boxes 1L1 ... 1L4/1VL1 ... 1VL4</b>			
	24 V DC	566726	VAVE-L1-1L1-LR
		566727	VAVE-L1-1L2-LR
		566728	VAVE-L1-1L3-LR
		566729	VAVE-L1-1L4-LR
	12/24 V DC	566722	VAVE-L1-1VL1-LP
		566723	VAVE-L1-1VL2-LP
		566724	VAVE-L1-1VL3-LP
		566725	VAVE-L1-1VL4-LP
<b>E-box R8/R1</b>			
	12/24 V DC	★ 573919	VAVE-L1-1VR8-LP
	24 V DC	573920	VAVE-L1-1R8-LR
<b>E-box K6 ... K9</b>			
	12/24 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
		573946	VAVE-L1-1K7-LR
		573947	VAVE-L1-1K8-LR
		573948	VAVE-L1-1K9-LR
	<b>3 Covers for manual override</b>		
	Covered	540898	VMPA-HBV-B
	Non-detent-ing	540897	VMPA-HBT-B
<b>4 H-rail mounting</b>			
	2 pieces	★ 569998	VAME-T-M4
<b>5 Plug socket with cable, open end</b>			
	0.5 m	★ 566654	NEBV-H1G2-KN-0.5-LE2
	1 m	★ 566655	NEBV-H1G2-KN-1-LE2
	2.5 m	★ 566656	NEBV-H1G2-KN-2.5-LE2
	5 m	566657	NEBV-H1G2-KN-5-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
<b>Inscription label holder</b>			
	10 pieces	570818	ASLR-D-L1



Overview/Configuration/Ordering

→ [www.festo.com/catalogue/tiger classic](http://www.festo.com/catalogue/tiger classic)

Additional information/Support/User documentation

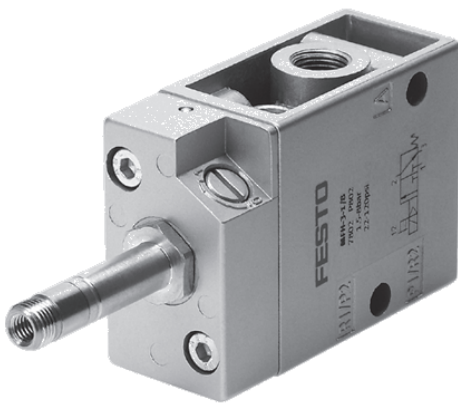
→ [www.festo.com/sp/tiger classic](http://www.festo.com/sp/tiger classic)

Electrically and pneumatically actuated directional control valves

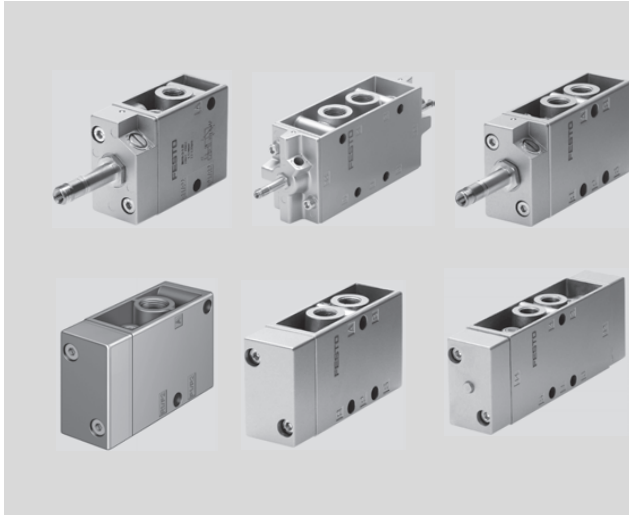
Universal directional control valves

Solenoid/Pneumatic valves

# Tiger Classic



- + Sturdy and reliable
- + Wide range of voltages
- + All-metal valve



- Electrically or pneumatically actuated valves
- Internal or external pilot air supply
- Sturdy and reliable
- ★ Quick ordering of basic designs → 739

→ [www.festo.com/catalogue/tiger classic](http://www.festo.com/catalogue/tiger classic)

### Product range overview

Type	Pneumatic connection	Valve function	Operating voltage		Normal position	Pilot air supply		→ Page/online
			[V DC]	[V AC]				
<b>Solenoid valve</b>								
MOFH	G $\frac{1}{8}$	3/2-way valve	12, 24, 42, 48	24, 42, 48, 110, 230, 240	Closed	Internal	External	736
	G $\frac{1}{4}$							737
	G $\frac{1}{2}$							737
	G $\frac{3}{4}$							738
MFH	G $\frac{1}{8}$	3/2-way valve	12, 24, 42, 48	24, 42, 48, 110, 230, 240	Open	Internal	–	736
	G $\frac{1}{4}$							737
	G $\frac{1}{2}$							737
	G $\frac{3}{4}$							738
MFH	G $\frac{1}{8}$	5/2-way valve	12, 24, 42, 48	24, 42, 48, 110, 230, 240	–	Internal	External	736
	G $\frac{1}{4}$							737
	G $\frac{1}{2}$							737
<b>Double solenoid valve</b>								
JMFH	G $\frac{1}{8}$	5/2-way valve	12, 24, 42, 48	24, 42, 48, 110, 230, 240	–	Internal	External	736
	G $\frac{1}{4}$							737
	G $\frac{1}{2}$							737
<b>Double solenoid valve with dominant signal</b>								
JMFDH	G $\frac{1}{8}$	5/2-way valve	12, 24, 42, 48	24, 42, 48, 110, 230, 240	–	–	External	736
	G $\frac{1}{4}$							737
<b>Pneumatic valve</b>								
VL/O	G $\frac{1}{8}$	3/2-way valve	–	–	Choice of open or closed	–	–	740
	G $\frac{1}{4}$							740
	G $\frac{1}{2}$							741
	G $\frac{3}{4}$							741
VL	G $\frac{1}{8}$	5/2-way valve	–	–	–	–	–	740
	G $\frac{1}{4}$							740
	G $\frac{1}{2}$							741
<b>Pneumatic bistable valve</b>								
JH	G $\frac{1}{8}$	5/2-way valve	–	–	–	–	–	740
	G $\frac{1}{4}$							740
	G $\frac{1}{2}$							741
<b>Pneumatic bistable valve with dominant signal</b>								
JDH	G $\frac{1}{8}$	5/2-way valve	–	–	–	–	–	740
	G $\frac{1}{4}$							740

# Solenoid valves MFH/MOFH/JMFH/JMFDH, Tiger Classic

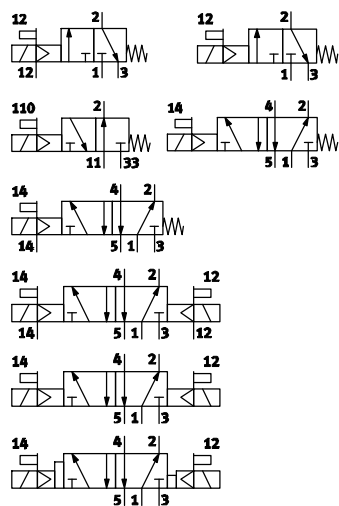
## Data sheet

Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, single-solenoid	5/2-way, single solenoid	5/2-way, double solenoid
Actuation type	Electric			
Reset method	Mechanical spring			-
Type of pilot control	Piloted			
Pilot air supply	Internal or external			
Direction of flow	Non-reversible			

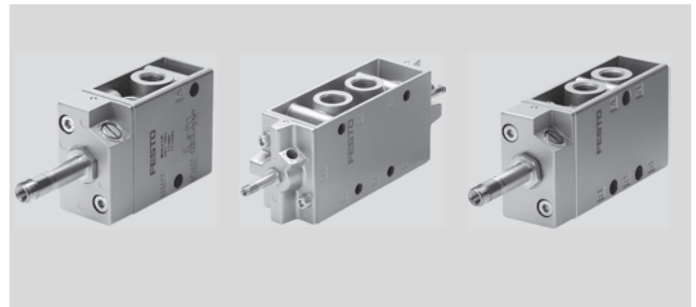
Operating conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature	[°C] -5 ... +40
Temperature of medium	[°C] -10 ... +60

Materials	
Housing	Die-cast aluminium
Seals	NBR

## 8 Data sheet – Pneumatic connection G1/8



Internal or external pilot air supply

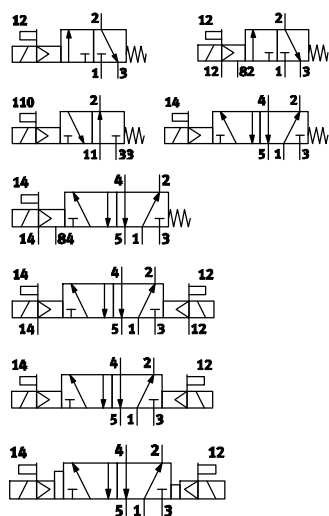


Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, single-solenoid	5/2-way, single solenoid	5/2-way, double solenoid
Nominal size	[mm]	5		
Standard nominal flow rate	[l/min]	500		600
Operating pressure	Internal	[bar] 1.5 ... 8	1.8 ... 8	1.5 ... 8
	External	[bar] -0.95 ... +10	0 ... 10	0 ... 8
	With dominant signal	[bar] -	-	2.5 ... 8
Pilot pressure	[bar]	1 ... 8		1.2 ... 8

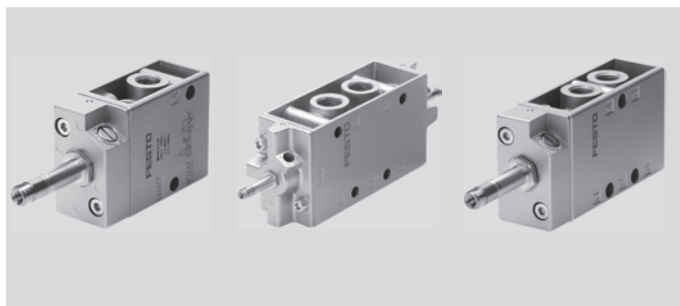
# Solenoid valves MFH/MOFH/JMFH/JMFDH, Tiger Classic



## Data sheet – Pneumatic connection G1/4

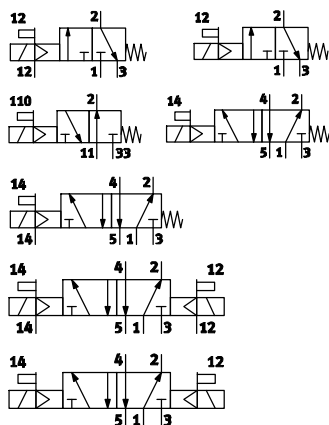


Internal or external pilot air supply

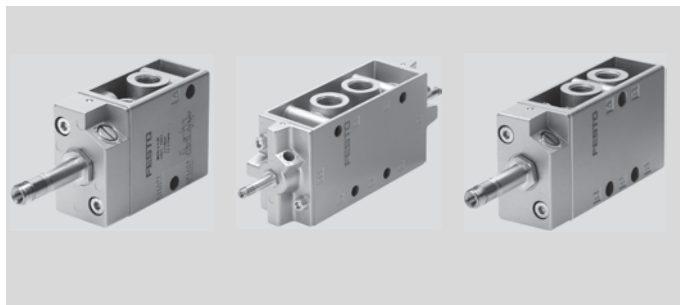


Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, single-solenoid	5/2-way, single solenoid	5/2-way, double solenoid
Nominal size	[mm]	7		
Standard nominal flow rate	[l/min]	800	1000	1100
Operating pressure	Internal	[bar] 1.5 ... 8	2.2 ... 8	1.5 ... 8
	External	[bar] -0.95 ... +10	0 ... 8	0 ... 8
	With dominant signal	[bar] -	-	2.5 ... 8
Pilot pressure	[bar]	1 ... 8	1.5 ... 8	1.2 ... 8

## Data sheet – Pneumatic connection G1/2



Internal or external pilot air supply

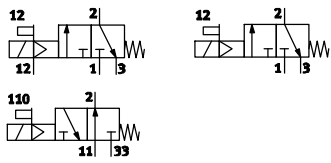


Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, single-solenoid	5/2-way, single solenoid	5/2-way, double solenoid
Nominal size	[mm]	14		
Standard nominal flow rate	[l/min]	3700	3700	4500
Operating pressure	Internal	[bar] 1.5 ... 8	2 ... 8	2 ... 8
	External	[bar] -0.95 ... +10	0 ... 8	0 ... 8
	With dominant signal	[bar] -	-	2.5 ... 8
Pilot pressure	[bar]	1 ... 8	1.5 ... 8	0.5 ... 8

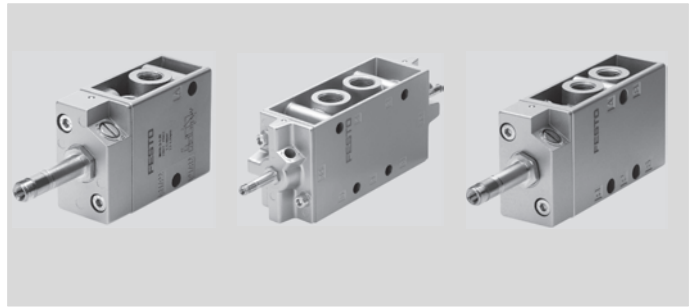
8

# Solenoid valves MFH/MOFH/JMFH/JMFDH, Tiger Classic

## Data sheet – Pneumatic connection G3/4



Internal or external pilot air supply



### Technical data

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

Valve function	3/2-way, single-solenoid		
Nominal size	[mm]	19	
Standard nominal flow rate	[l/min]	7500	
Operating pressure	Internal	[bar]	2 ... 8
	External	[bar]	-0.95 ... +10
Pilot pressure	[bar]	1 ... 8	



## Order code

		MFH	–		–		–	
<b>Type</b>								
MFH	Single solenoid, for F solenoid coil, normally closed							
MOFH	Single solenoid, for F solenoid coil, normally open							
JMFH	Double solenoid, for F solenoid coil							
JMFDH	Double solenoid, for F solenoid coil, with dominant signal <span style="border: 1px solid black; padding: 0 2px;">1</span>							
<b>Valve function</b>								
3	3/2-way valve							
5	5/2-way valve							
<b>Pneumatic connections</b>								
1/8	G1/8							
1/4	G1/4							
1/2	G1/2							
3/4	G3/4 <span style="border: 1px solid black; padding: 0 2px;">2</span>							
<b>Pilot air supply port</b>								
–	Internal							
S	External							

1 Only with pneumatic connection G1/8 or G1/4

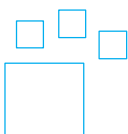
2 Only in combination with 3/2-way valve

## Order example:

MFH-5-1/4

Solenoid valve MFH Tiger Classic, single solenoid, for F solenoid coil, normally closed - 5/2-way valve - pneumatic connection G1/4 - internal pilot air supply

## 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/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

★ Quick ordering<sup>1)</sup>

Part no.	Type
<b>3/2-way solenoid valve, internal pilot air</b>	
9964	MFH-3-1/4
7802	MFH-3-1/8

Part no.	Type
<b>5/2-way solenoid valve, internal pilot air</b>	
6211	MFH-5-1/4
9982	MFH-5-1/8

Part no.	Type
<b>5/2-way double solenoid valve, internal pilot air</b>	
8820	JMFH-5-1/8
10410	JMFH-5-1/4

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

# Pneumatic valves VL/O, VL, JH, JDH, Tiger Classic

## Data sheet

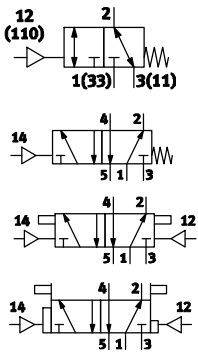
Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, monostable	5/2-way, monostable	5/2-way, bistable
Actuation type	Pneumatic			
Reset method	Mechanical spring			–
Type of pilot control	Direct			
Direction of flow	Reversible	Non-reversible		

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] –10 ... +60

Materials	
Housing	Die-cast aluminium
Seals	NBR

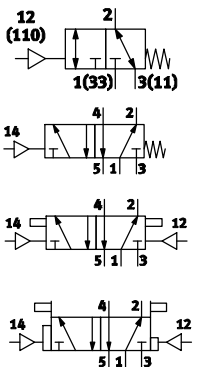
## Data sheet – Pneumatic connection G1/8

8



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, monostable	5/2-way, monostable	5/2-way, bistable
Nominal size	[mm]	5		
Standard nominal flow rate	[l/min]	500		600
Operating pressure	[bar]	–0.95 ... +10 (normally closed) 0 ... 10 (normally open)	0 ... 10	0 ... 10
Pilot pressure	[bar]	Max. 10		

## Data sheet – Pneumatic connection G1/4

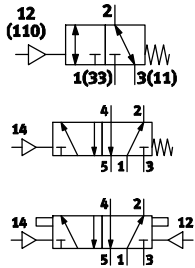


Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, monostable	5/2-way, monostable	5/2-way, bistable
Nominal size	[mm]	7		

## Data sheet – Pneumatic connection G1/4

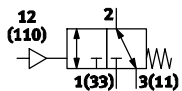
Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, monostable	5/2-way, monostable	5/2-way, bistable
Standard nominal flow rate	[l/min]	800	800	1100
Operating pressure	[bar]	-0.95 ... +10 (normally closed) 0 ... 10 (normally open)	0 ... 8	0 ... 8
Pilot pressure	[bar]	Max. 10		

## Data sheet – Pneumatic connection G1/2



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, monostable	5/2-way, monostable	5/2-way, bistable
Nominal size	[mm]	14		
Standard nominal flow rate	[l/min]	3700	3700	4500
Operating pressure	[bar]	-0.95 ... +10 (normally closed) 0 ... 10 (normally open)	0 ... 10	0 ... 10
Pilot pressure	[bar]	Max. 10		

## Data sheet – Pneumatic connection G3/4



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>		
Valve function		3/2-way, monostable		
Nominal size	[mm]	19		
Standard nominal flow rate	[l/min]	7500		
Operating pressure	[bar]	-0.95 ... +10 (normally closed) 0 ... 10 (normally open)		
Pilot pressure	[bar]	Max. 10		

# Pneumatic valves VL/O, VL, JH, JDH, Tiger Classic

## Order code

VL/O		—		—	
<b>Type</b>					
VL/O	Monostable, normally open or closed				
VL	Monostable				
JH	Bistable				
JDH	Bistable, with dominant signal	1			
<b>Valve function</b>					
3	3/2-way valve				
5	5/2-way valve				
<b>Pneumatic connection</b>					
1/8	G1/8				
1/4	G1/4				
1/2	G1/2				
3/4	G3/4	2			

1 Only with pneumatic connection G1/8 or G1/4

2 Only in combination with 3/2-way valve

8

### Order example:

VL-5-1/4

Pneumatic valve VL Tiger Classic, monostable - 5/2-way valve - pneumatic connection G1/4

## Ordering – Product options

**Configurable product**

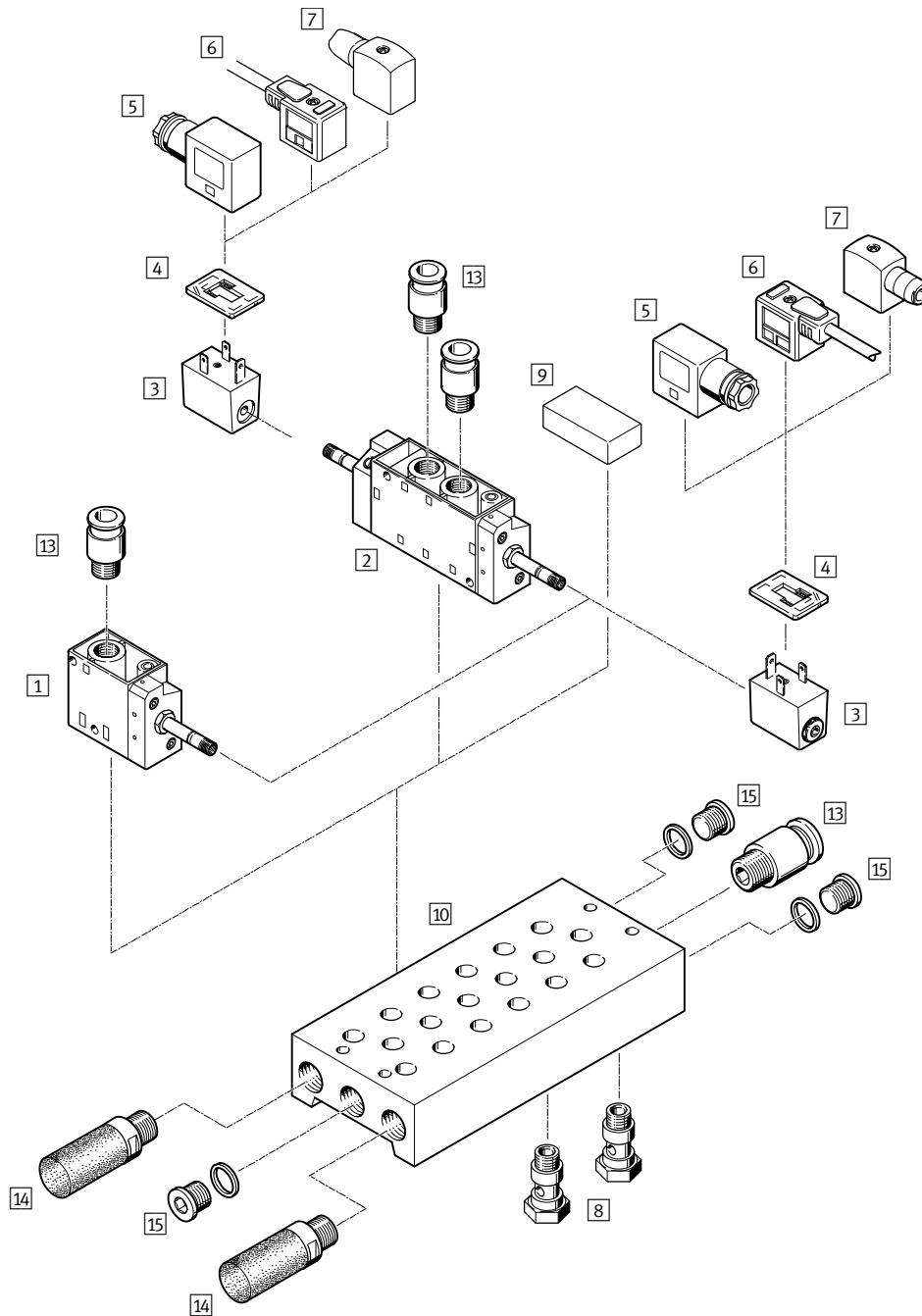
**This product and all its options can be ordered using the configurator.**

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

Enter the type code in the search field.

## Accessories

## Mounting on manifold block

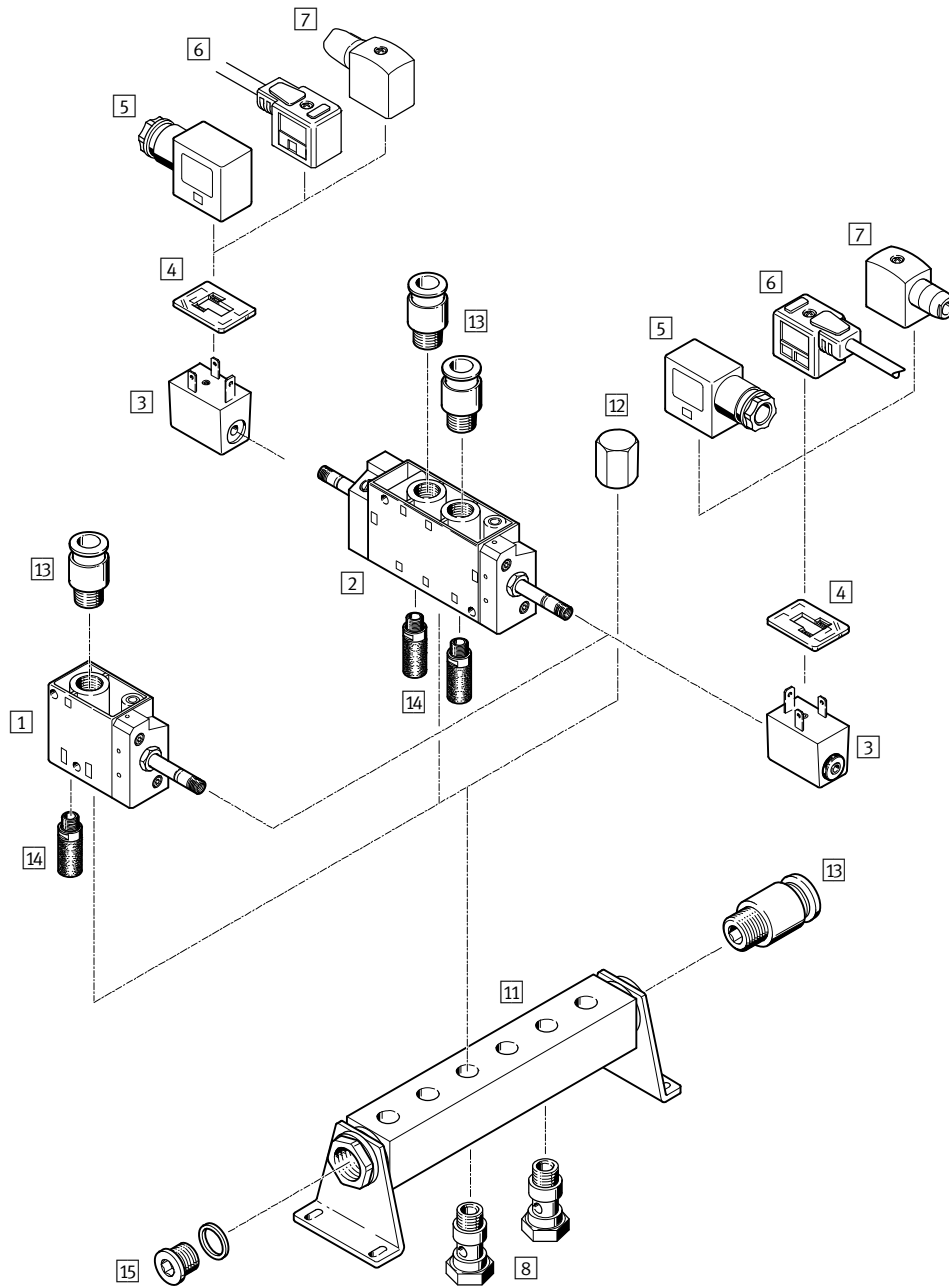


		→ Page/online
1	Solenoid valve MFH	739
2	Solenoid valve JMFH	739
3	F solenoid coil MSFG, MSFW	746
4	Illuminating seal MF-LD	746
5	Plug socket MSSD-F-S	746
6	Plug socket with cable KMF	746
7	Plug socket MSSD-F	746
8	Hollow bolt VT	746
9	Blanking plate PRSB	746
10	Manifold block PRS	746
13	Push-in fitting QS	1098
14	Pneumatic silencer	1237
15	Blanking plug B (3 included in the scope of delivery of the manifold block PRS)	b-1

# Solenoid valves MFH/MOFH/JMFH/JMFDH, Tiger Classic

## Accessories

### Mounting on manifold rail

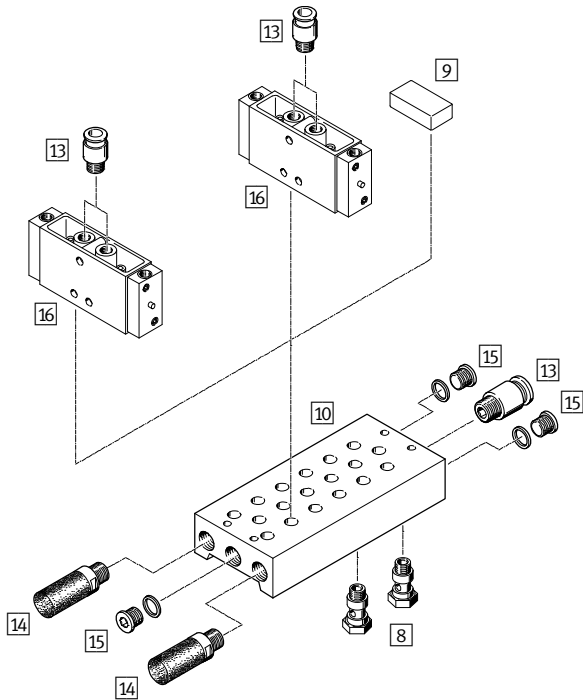


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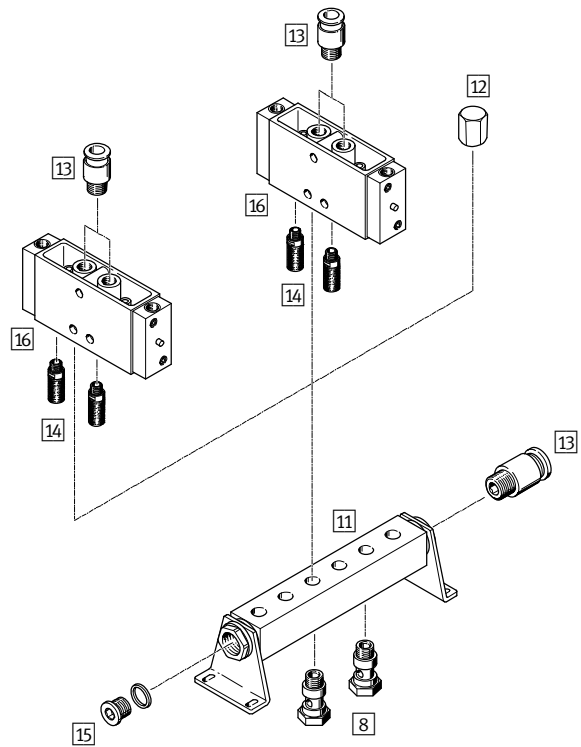
		→ Page/online
1	Solenoid valve JMFH	739
2	Solenoid valve MFH	739
3	F solenoid coil MSFG, MSFW	746
4	Illuminating seal MF-LD	746
5	Plug socket MSSD-F-S	746
6	Plug socket with cable KMF	746
7	Plug socket MSSD-F	746
8	Hollow bolt VT	746
11	Manifold rail PAL	746
12	Cap nut VTM	746
13	Push-in fitting QS	1098
14	Pneumatic silencer	1237
15	Blanking plug B (1 included in the scope of delivery of the manifold rail PAL)	b-1

Accessories

Mounting on manifold block



Mounting on manifold rail

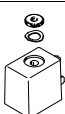


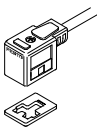





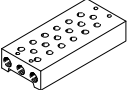
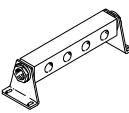

8

		→ Page/online
8	Hollow bolt VT	746
9	Blanking plate PRSB	746
10	Manifold block PRS	746
11	Manifold rail PAL	746
12	Cap nut VTM	746
13	Push-in fitting QS	1098
14	Pneumatic silencer	1237
15	Blanking plug B	3 included in the scope of delivery of the manifold block PRS 1 included in the scope of delivery of the manifold rail PAL
16	Pneumatic valve VL, JH	742

# Solenoid/pneumatic valves, Tiger Classic

## Accessories – Ordering data

		Part no.	Type
<b>3 F solenoid coil</b>			
	12 V DC	34410	MSFG-12-OD
	24 V DC	★ 34411	MSFG-24/42-50/60-OD
	42 V AC		
	42 V DC	34413	MSFG-42-OD
	24 V AC	34415	MSFW-24-50/60-OD
	48 V AC	34418	MSFW-48-50/60-OD
	110 V AC	34420	MSFW-110-50/60-OD
	120 V AC		
	230 V AC	34422	MSFW-230-50/60-OD
	240 V AC		
	240 V AC	34424	MSFW-240-50/60-OD
	24 V DC	4527	MSFG-24/42-50/60
42 V AC	34412	MSFG-24/42-50/60-DS-OD	
<b>4 Illuminating seal for F solenoid coil</b>			
	-	19143	MF-LD-12-24DC
	-	19144	MF-LD-230AC
<b>5 Plug socket for F solenoid coil, without cable</b>			
	-	★ 34431	MSSD-F
	-	539710	MSSD-F-M16
<b>6 Connecting cable for F solenoid coil</b>			
	24 V DC	★ 30935	KMF-1-24DC-2,5-LED
		30937	KMF-1-24DC-5-LED
		193458	KMF-1-24DC-10-LED
	Up to 240 V	30936	KMF-1-230AC-2,5
		30938	KMF-1-230AC-5
<b>7 Plug socket without cable with insulation displacement technology</b>			
	-	192746	MSSD-F-S-M16
<b>8 Hollow bolt</b>			
	For manifold block PRS		
	G $\frac{1}{8}$	11539	VT- $\frac{1}{8}$ -PRSK
	G $\frac{1}{4}$	9499	VT- $\frac{1}{4}$ -PRS
	For manifold rail PAL		
	G $\frac{1}{8}$	8626	VT- $\frac{1}{8}$
	G $\frac{1}{4}$	206147	VT- $\frac{1}{4}$ -2
G $\frac{1}{2}$	9986	VT- $\frac{1}{2}$	

		Part no.	Type	
<b>9 Blanking plate</b>				
	G $\frac{1}{8}$	11687	PRSB- $\frac{1}{8}$	
	G $\frac{1}{4}$	11688	PRSB- $\frac{1}{4}$	
<b>10 Manifold block</b>				
	Pneumatic connection G $\frac{1}{8}$	11898	PRS- $\frac{1}{8}$ -2	
		11899	PRS- $\frac{1}{8}$ -3	
		11900	PRS- $\frac{1}{8}$ -4	
		11901	PRS- $\frac{1}{8}$ -5	
		11902	PRS- $\frac{1}{8}$ -6	
		Pneumatic connection G $\frac{1}{4}$	10185	PRS- $\frac{1}{4}$ -2
	10186		PRS- $\frac{1}{4}$ -3	
	10187		PRS- $\frac{1}{4}$ -4	
	10188		PRS- $\frac{1}{4}$ -5	
	10189		PRS- $\frac{1}{4}$ -6	
	<b>11 Manifold rail</b>			
		Pneumatic connection G $\frac{1}{8}$	★ 8601	PAL- $\frac{1}{8}$ -2
★ 8602			PAL- $\frac{1}{8}$ -3	
★ 8603			PAL- $\frac{1}{8}$ -4	
8604			PAL- $\frac{1}{8}$ -5	
★ 9767			PAL- $\frac{1}{8}$ -6	
Pneumatic connection G $\frac{1}{4}$			★ 9188	PAL-5- $\frac{1}{4}$ -2
		★ 9189	PAL-5- $\frac{1}{4}$ -3	
		★ 9190	PAL-5- $\frac{1}{4}$ -4	
		9191	PAL-5- $\frac{1}{4}$ -5	
		★ 9192	PAL-5- $\frac{1}{4}$ -6	
		<b>12 Cap nut</b>		
		G $\frac{1}{8}$	9768	VTM- $\frac{1}{8}$
	G $\frac{1}{4}$	3099	VTM- $\frac{1}{4}$	
	G $\frac{1}{2}$	9987	VTM- $\frac{1}{2}$	





Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/hgl](http://www.festo.com/catalogue/hgl)



Additional information/Support/User documentation  
→ [www.festo.com/sp/hgl](http://www.festo.com/sp/hgl)

Shut-off valves  
Non-return valves and quick exhaust valves

Non-return valves

# HGL



- + Valve function: piloted non-return function
- + Pneumatically piloted
- + Screw-in with male thread
- + Pilot air connection: M5, G1/8, G1/4, G3/8, QS4

# Check valves HGL, piloted



- Piloted non-return function
- With push-in connector at one end for tubing O.D. from 4 ... 12 mm
- With connecting thread at one or both ends from M5 ... G½
- ★ Quick ordering of basic designs → 748

→ [www.festo.com/catalogue/hgl](http://www.festo.com/catalogue/hgl)

## Data sheet

Operating conditions		M5	G¼	G¼	G¾	G½
Pneumatic connection 2		M5	G¼	G¼	G¾	G½
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		HGL...-B with threaded connection at both ends	HGL...-QS with push-in/threaded connection
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 qnN in flow direction at 6 bar → 5 bar [l/min]	Standard flow rate qn in flow direction at 6 bar → 0 bar [l/min]		Part no.	Type
	2	1						
<b>Threaded connection at both ends</b>								
	M5	M5	M5	130	200	★	530029	HGL-M5-B
	G¼	G¼	M5	300	430	★	530030	HGL-¼-B
		G¼	G¼	300	430		543253	HGL-¼-¼-B
	G¼	G¼	G¼	550	680	★	530031	HGL-¼-B
	G¾	G¾	G¼	1100	1500	★	530032	HGL-¾-B
	G½	G½	G¾	1600	2100	★	530033	HGL-½-B
<b>Push-in/threaded connection</b>								
	M5	QS-4	QS-4	130	200	★	530038	HGL-M5-QS-4
	G¼	QS-4	M5	200	300	★	530039	HGL-¼-QS-4
		QS-6	M5	270	400	★	530040	HGL-¼-QS-6
	G¼	QS-8	G¼	390	640	★	530041	HGL-¼-QS-8
		QS-10	G¼	400	670	★	530042	HGL-¼-QS-10
	G¾	QS-8	G¼	830	1200	★	530043	HGL-¾-QS-8
		QS-10	G¼	890	1300	★	530044	HGL-¾-QS-10
	G½	QS-12	G¾	1400	2100	★	530045	HGL-½-QS-12



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/vboh](http://www.festo.com/catalogue/vboh)



Additional information/Support/User documentation  
→ [www.festo.com/sp/vboh](http://www.festo.com/sp/vboh)

Shut-off valves  
Ball valves and shut-off valves  
Hand slide valve

# VBOH



- + Non-overlapping, so no pressure losses when switching
- + Minimal installation
- + High flow rate and operating pressure
- + Exclusive design

# Hand slide valves VBOH

FESTO



- Used as a shut-off function for pressurising and exhausting compressed air systems
- Non-overlapping, so no pressure losses when switching
- Minimal installation
- With connecting thread at both ends from M5 ... G $\frac{3}{4}$

→ [www.festo.com/catalogue/vboh](http://www.festo.com/catalogue/vboh)

## Data sheet

### Technical data

Design	Sleeve valve
Valve function	3/2-way, bistable
Type of pilot 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
Stud end connector	Anodised wrought aluminium alloy
Grip ring	PBT
Seals	NBR

## Ordering data

	Pneumatic connection		Valve function	Nominal size [mm]	Standard nominal flow rate q <sub>nN</sub> [l/min.]	Part no.	Type
	1	2					
	M5	M5	3/2-way, bistable	3.6	236	<b>1609969</b>	<b>VBOH-32-M5</b>
	G $\frac{1}{8}$	G $\frac{1}{8}$	3/2-way, bistable	5.7	777	<b>1558073</b>	<b>VBOH-32-G18</b>
	G $\frac{1}{4}$	G $\frac{1}{4}$	3/2-way, bistable	8.4	1675	<b>1302994</b>	<b>VBOH-32-G14</b>
	G $\frac{3}{8}$	G $\frac{3}{8}$	3/2-way, bistable	9.9	2201	<b>1482679</b>	<b>VBOH-32-G38</b>
	G $\frac{1}{2}$	G $\frac{1}{2}$	3/2-way, bistable	12.1	3420	<b>1587988</b>	<b>VBOH-32-G12</b>
	G $\frac{3}{4}$	G $\frac{3}{4}$	3/2-way, bistable	19.3	7691	<b>1629664</b>	<b>VBOH-32-G34</b>

Flow control valves  
Ball valves and shut-off valves  
Shut-off valves

# HE



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/he](http://www.festo.com/catalogue/he)



Additional information/Support/User documentation  
→ [www.festo.com/sp/he](http://www.festo.com/sp/he)



- + Shut-off valve, manually actuated
- + Connection: thread at both ends, push-in connector at both ends, thread/push-in connector



- Manual shut-off valve
- 2/2-way or 3/2-way bistable
- Connection: push-in connector at both ends, threaded/push-in connector or threaded connector at both ends

→ [www.festo.com/catalogue/he](http://www.festo.com/catalogue/he)

## Data sheet

### Technical data

Valve function	2/2-way, bistable	3/2-way, bistable
Design	Piston spool valve	
Type of pilot control	Direct	
Direction of flow	Non-reversible	
Exhaust air function	–	No flow control

### Operating conditions

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

### Materials

Housing	PBT reinforced
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## Ordering data

	Pneumatic connection			Valve function	Nominal size [mm]	Standard nominal flow rate q <sub>nN</sub> [l/min]	Part no.	Type
	1	2	3					
<b>Push-in connector at both ends</b>								
	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
<b>Threaded/ Push-in connector</b>								
	R <sup>1</sup> / <sub>8</sub>	QS-6	–	2/2-way, bistable	5	307	153471	HE-2- <sup>1</sup> / <sub>8</sub> -QS-6
			Not ducted	3/2-way, bistable	5	301	153479	HE-3- <sup>1</sup> / <sub>8</sub> -QS-6
	R <sup>1</sup> / <sub>4</sub>	QS-8	–	2/2-way, bistable	5	396	153472	HE-2- <sup>1</sup> / <sub>4</sub> -QS-8
			Not ducted	3/2-way, bistable	5	380	153480	HE-3- <sup>1</sup> / <sub>4</sub> -QS-8
	R <sup>3</sup> / <sub>8</sub>	QS-10	–	2/2-way, bistable	7	728	153473	HE-2- <sup>3</sup> / <sub>8</sub> -QS-10
			Not ducted	3/2-way, bistable	7	733	153481	HE-3- <sup>3</sup> / <sub>8</sub> -QS-10
	R <sup>1</sup> / <sub>2</sub>	QS-12	–	2/2-way, bistable	7	776	153474	HE-2- <sup>1</sup> / <sub>2</sub> -QS-12
			Not ducted	3/2-way, bistable	7	796	153482	HE-3- <sup>1</sup> / <sub>2</sub> -QS-12
<b>Threaded connection at both ends</b>								
	R <sup>1</sup> / <sub>8</sub>	R <sup>1</sup> / <sub>8</sub>	Not ducted	3/2-way, bistable	5	301	153296	HE-3- <sup>1</sup> / <sub>8</sub> - <sup>1</sup> / <sub>8</sub>
	R <sup>1</sup> / <sub>4</sub>	R <sup>1</sup> / <sub>4</sub>	Not ducted	3/2-way, bistable	7	380	153297	HE-3- <sup>1</sup> / <sub>4</sub> - <sup>1</sup> / <sub>4</sub>
	R <sup>3</sup> / <sub>8</sub>	R <sup>3</sup> / <sub>8</sub>	Not ducted	3/2-way, bistable	7	733	153298	HE-3- <sup>3</sup> / <sub>8</sub> - <sup>3</sup> / <sub>8</sub>



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/gh](http://www.festo.com/catalogue/gh)



Additional information/Support/User documentation  
→ [www.festo.com/sp/gh](http://www.festo.com/sp/gh)

Shut-off valves  
Ball valves and shut-off valves

Shut-off valve

# QH, QHS



- + Large connection width
- + Extreme flow rate - up to 84000 l/min

## Ball valves QH/QHS

FESTO



- Shut-off valve, manually actuated
- In-line installation, can be screwed in, bulkhead fitting
- Connection: push-in connector at both ends, threaded/push-in connector or threaded connection at both ends

→ [www.festo.com/catalogue/qh](http://www.festo.com/catalogue/qh)

### Product range overview

Type	Version	Pneumatic port 1	Pneumatic port 2	→ Page/ online	
QH	Push-in connector at both ends	QS-4	QS-4	755	
		QS-6	QS-6		
	Threaded/push-in connector	R1/8	QS-4		756
			QS-6		
qhs	Push-in connector at both ends, bulkhead fitting	QS-6	QS-6		
QH	Female threads on both sides, with hand lever	G1/4	G1/4	756	
		G3/8	G3/8		
		G1/2	G1/2		
		G3/4	G3/4		
		G1	G1		
		G1 1/2	G1 1/2		



## Data sheet



Technical data				
Pneumatic connection 1	QS-4	QS-6	R1/8	
Pneumatic connection 2	QS-4	QS-6	QS-4	QS-6
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	Operation with lubricated medium 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 size [mm]	Standard nominal flow rate q <sub>N</sub> [l/min]	Part no.	Type
	1	2					
<b>Push-in connector at both ends</b>							
	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
<b>Threaded/push-in connector</b>							
	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
<b>Bulkhead fitting, push-in connector at both ends</b>							
	QS-6	QS-6	2/2-way, bistable	4	528	153485	QHS-QS-6

# Ball valves QH/QHS

## Data sheet – With hand lever



### Technical data

Pneumatic port 1	G1/4	G3/8	G1/2	G3/4	G1	G1 1/2
Pneumatic connection 2	G1/4	G3/8	G1/2	G3/4	G1	G1 1/2
Design	Ball valve					
Valve function	2/2-way, bistable					
Actuation type	Manual					

### Operating conditions

Operating medium <sup>1)</sup>	Compressed air to ISO 8573-1:2010 [7:-:-]
	Water
Note on operating/pilot medium	Operation with lubricated medium 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 size [mm]	Standard nominal flow rate q <sub>N</sub> [l/min.]	Part no.	Type
	1	2					
<b>Female thread at both ends</b>							
	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	11500	9543	QH-1/2
	G3/4	G3/4	2/2-way, bistable	20	21000	9544	QH-3/4
	G1	G1	2/2-way, bistable	25	33000	9545	QH-1
	G1 1/2	G1 1/2	2/2-way, bistable	40	84000	6837	QH-1 1/2



Overview/Configuration/Ordering  
 → [www.festo.com/catalogue/grla](http://www.festo.com/catalogue/grla)



Additional information/Support/User documentation  
 → [www.festo.com/sp/grla](http://www.festo.com/sp/grla)

Flow control valves

One-way flow control valves

# GR..., VFO...



- + GR...: flow control valve, flow control at one end
- + Standard, mini, in-line variants with different flow rates
- + Functional combination with one-way flow control valve and piloted check valve
- + 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
- + Minimal height, high flow rate

# One-way flow control valves



- Flow control valves, flow control at one end
  - Exhaust or supply air flow control
  - Function combinations consisting of a one-way flow control valve and piloted check valve
  - With screw-in thread M3 ... G1/2 and push-in connector QS-3 ... QS-12 mm
  - Metal and polymer versions
  - Can be swivelled 360° around the screw-in axis after mounting
- ★ Quick ordering of basic designs → 761

→ [www.festo.com/catalogue/grla](http://www.festo.com/catalogue/grla)

## Product range overview

	Valve function	Type	Connection direction	Pneumatic connection 1	Pneumatic connection 2	qnN <sup>1)</sup> [l/min]	Adjusting element	→ Page/online
<b>standard</b>								
Metal	Exhaust air one-way flow control function	GRLA	Elbow outlet	QS-3, QS-4, QS-6, QS-8, QS-10, QS-12	M5, G1/8, G1/4, G3/8, G1/2	100 ... 1580	Slotted head screw Knurled screw	760
				M5, G1/8, G1/4, G3/8, G1/2, G3/4	M5, G1/8, G1/4, G3/8, G1/2, G3/4	95 ... 4320	Slotted head screw	<a href="#">grla</a>
				M5, G1/8, G1/4	M5, G1/8, G1/4	95 ... 610	Knurled screw	
				PK-3, PK-4, PK-6	M5, G1/8, G1/4	83 ... 540	Slotted head screw	<a href="#">grla</a>
		GRLSA	Elbow outlet	QS-6, QS-8	G1/8, G1/4	0 ... 450	Rotary knob with scale, internal hex	<a href="#">grlsa</a>
		Supply air one-way flow control function	GRLZ	Elbow outlet	QS-3, QS-4, QS-6, QS-8	M5, G1/8	100 ... 215	Slotted head screw
	M5, G1/8, G1/4				M5, G1/8, G1/4	95 ... 610	Slotted head screw Knurled screw	<a href="#">grlz</a>
	PK-3, PK-4, PK-6				M5, G1/8, G1/4	83 ... 540	Slotted head screw	<a href="#">grlz</a>
	VFOC		Elbow outlet	QS-4, QS-6	Push-in sleeve <sup>2)</sup> QS-4, QS-6	100 ... 270	Slotted head screw	<a href="#">vfo</a>
	Nickel-plated metal	Exhaust air one-way flow control function	VFOH	Elbow outlet	QS-4, QS-6, QS-8, QS-10	G1/8, G1/4	180 ... 530	External hex
Polymer	Exhaust air one-way flow control function	GRLA	Elbow outlet	QS-6, QS-8	G1/8, G1/4, G3/8	520 ... 650	Knurled screw	<a href="#">grla</a>
<b>Flat</b>								
Polymer	Exhaust air one-way flow control function	VFOF	Elbow outlet	QS-6, QS-8	G1/8, G1/4	250 ... 650	Internal hex	762

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

2) Only suitable for push-in connector QS.

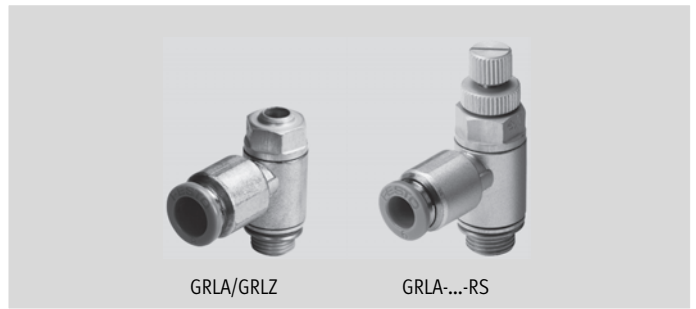
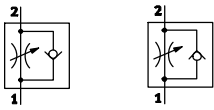
## Product range overview

Type	Valve function	Type	Connection direction	Pneumatic connection 1	Pneumatic connection 2	qn <sup>1)</sup> [l/min]	Adjusting element	→ Page/online
<b>Mini</b>								
Metal	Exhaust air one-way flow control function	GRLA	Elbow outlet	QS-3, QS-4	M3, M5	40 ... 41	Slotted head screw	<a href="#">grla</a>
				M3	M3	0 ... 18	Slotted head screw	<a href="#">grla</a>
		GRGA	Parallel outlet	QS-3	M3	0 ... 41	Slotted head screw	<a href="#">grga</a>
	Supply air one-way flow control function	GRLZ	Elbow outlet	QS-3, QS-4	M3, M5	41 ... 48	Slotted head screw	<a href="#">grlz</a>
				M3	M3	0 ... 18	Slotted head screw	<a href="#">grlz</a>
		GRGZ	Parallel outlet	QS-3	M3	0 ... 41	Slotted head screw	<a href="#">grgz</a>
<b>In-line installation</b>								
Polymer	One-way flow control function	GR	Straight	QS-3, QS-4, QS-6, QS-8	QS-3, QS-4, QS-6, QS-8	40 ... 250	Knurled screw	763
Metal		GR/GRA		M3, M5, G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	M3, M5, G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	29.5 ... 3300	Knurled screw	764
<b>Corrosion-resistant</b>								
Stainless steel	Exhaust air one-way flow control function	CRGRLA	Elbow outlet	M5, G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	M5, G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	95 ... 2100	Slotted head screw	<a href="#">crgla</a>
<b>Precision one-way flow control valve</b>								
Metal	One-way flow control function	GRP	–	G <sup>1</sup> / <sub>8</sub>	G <sup>1</sup> / <sub>8</sub>	40.7 ... 75.8	Rotary knob with scale	<a href="#">grp</a>
				PK-3, PK-4	PK-3, PK-4	3.8 ... 75.8	Rotary knob with scale	<a href="#">grp</a>
<b>M5 Compact System</b>								
Metal	One-way flow control function	GRF	–	PK-3	PK-3	45	Knurled screw	<a href="#">grf</a>
<b>Function combination</b>								
Metal	Exhaust air one-way flow control function	GRXA	Elbow outlet	QS-4, QS-6, QS-8,	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub>	130 ... 280	Slotted head screw	<a href="#">grxa</a>
Polymer	Exhaust air one-way flow control function	VFOF	Elbow outlet	QS-6, QS-8,	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub>	240 ... 590	Internal hex	765

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	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
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	G $\frac{1}{8}$
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 operating/pilot medium	Operation with lubricated medium 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	GRLA/GRLZ with slotted head screw	GRLA-...-RS with knurled screw
Threaded plug	Wrought aluminium alloy (GRLA/GRLZ-M5: brass)	
Swivel connection	Chromated die-cast zinc	
Knurled head	-	Anodised wrought aluminium alloy
Releasing ring	POM	
Regulating screw	Brass	High-alloy stainless steel
Seals	NBR	

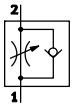
★ Quick ordering<sup>1)</sup>

	Pneumatic connection		Standard nominal flow rate q <sub>N</sub>		Standard flow rate q <sub>n</sub>		Part no.	Type	
			at 6 bar → 5 bar		at 6 bar → 0 bar				
	2	1	In direction of flow control [l/min]	In blocked direction [l/min]	In direction of flow control [l/min]	In blocked direction [l/min]			
<b>Exhaust air one-way flow control function</b>									
<b>GRLA with slotted head screw</b>									
	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	
	G <sup>1</sup> / <sub>8</sub>	QS-3	130	100 ... 130	180	200 ... 220	193142	GRLA- <sup>1</sup> / <sub>8</sub> -QS-3-D	
		QS-4	160	120 ... 190	250	270 ... 300	193143	GRLA- <sup>1</sup> / <sub>8</sub> -QS-4-D	
		QS-6	185	160 ... 240	370	330 ... 390	193144	GRLA- <sup>1</sup> / <sub>8</sub> -QS-6-D	
			400	290 ... 420	600	570 ... 680	537075	GRLA- <sup>1</sup> / <sub>8</sub> -QS-6-MF-D	
		QS-8	215	175 ... 250	400	330 ... 410	193145	GRLA- <sup>1</sup> / <sub>8</sub> -QS-8-D	
			475	325 ... 500	720	610 ... 760	537076	GRLA- <sup>1</sup> / <sub>8</sub> -QS-8-MF-D	
	G <sup>1</sup> / <sub>4</sub>	QS-6	400	290 ... 420	600	570 ... 680	193146	GRLA- <sup>1</sup> / <sub>4</sub> -QS-6-D	
		QS-8	475	325 ... 500	720	610 ... 760	193147	GRLA- <sup>1</sup> / <sub>4</sub> -QS-8-D	
		QS-10	480	345 ... 500	760	630 ... 790	193148	GRLA- <sup>1</sup> / <sub>4</sub> -QS-10-D	
	G <sup>3</sup> / <sub>8</sub>	QS-6	495	320 ... 495	740	840 ... 890	193149	GRLA- <sup>3</sup> / <sub>8</sub> -QS-6-D	
		QS-8	820	450 ... 850	1300	1080 ... 1420	193150	GRLA- <sup>3</sup> / <sub>8</sub> -QS-8-D	
		QS-10	900	540 ... 975	1400	1160 ... 1620	193151	GRLA- <sup>3</sup> / <sub>8</sub> -QS-10-D	
	G <sup>1</sup> / <sub>2</sub>	QS-12	1580	925 ... 1605	2220	1910 ... 2500	193152	GRLA- <sup>1</sup> / <sub>2</sub> -QS-12-D	
<b>GRLA with knurled screw</b>									
	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	
	G <sup>1</sup> / <sub>8</sub>	QS-3	130	100 ... 130	180	200 ... 220	197579	GRLA- <sup>1</sup> / <sub>8</sub> -QS-3-RS-D	
		QS-4	160	120 ... 190	250	270 ... 300	197580	GRLA- <sup>1</sup> / <sub>8</sub> -QS-4-RS-D	
		QS-6	185	160 ... 240	370	330 ... 390	197581	GRLA- <sup>1</sup> / <sub>8</sub> -QS-6-RS-D	
		QS-8	215	175 ... 250	400	330 ... 410	534337	GRLA- <sup>1</sup> / <sub>8</sub> -QS-8-RS-D	
	G <sup>1</sup> / <sub>4</sub>	QS-6	400	290 ... 420	600	570 ... 680	534338	GRLA- <sup>1</sup> / <sub>4</sub> -QS-6-RS-D	
		QS-8	475	325 ... 500	720	610 ... 760	534339	GRLA- <sup>1</sup> / <sub>4</sub> -QS-8-RS-D	
		QS-10	480	345 ... 500	760	630 ... 790	534340	GRLA- <sup>1</sup> / <sub>4</sub> -QS-10-RS-D	
	G <sup>3</sup> / <sub>8</sub>	QS-6	495	320 ... 495	740	840 ... 890	534341	GRLA- <sup>3</sup> / <sub>8</sub> -QS-6-RS-D	
		QS-8	820	450 ... 850	1300	1080 ... 1420	534342	GRLA- <sup>3</sup> / <sub>8</sub> -QS-8-RS-D	
		QS-10	900	540 ... 975	1400	1160 ... 1620	534343	GRLA- <sup>3</sup> / <sub>8</sub> -QS-10-RS-D	
	G <sup>1</sup> / <sub>2</sub>	QS-12	1580	925 ... 1605	2220	1910 ... 2500	534344	GRLA- <sup>1</sup> / <sub>2</sub> -QS-12-RS-D	
	<b>Supply air one-way flow control function</b>								
	<b>GRLZ with slotted head screw</b>								
	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	
	G <sup>1</sup> / <sub>8</sub>	QS-3	130	100 ... 130	200	180 ... 200	193156	GRLZ- <sup>1</sup> / <sub>8</sub> -QS-3-D	
		QS-4	160	120 ... 190	300	260 ... 290	193157	GRLZ- <sup>1</sup> / <sub>8</sub> -QS-4-D	
		QS-6	185	160 ... 240	340	390 ... 460	193158	GRLZ- <sup>1</sup> / <sub>8</sub> -QS-6-D	
		QS-8	215	175 ... 250	370	390 ... 470	193159	GRLZ- <sup>1</sup> / <sub>8</sub> -QS-8-D	

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

# One-way flow control valves VFOF

## Technical data



### 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 operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Operating pressure [bar]	0.2 ... 10	
Ambient temperature [°C]	-10 ... +60	

### Materials

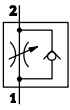
Housing	PBT
Hollow bolt	Wrought aluminium alloy
Sleeve	Wrought aluminium alloy
Releasing ring	POM
Regulating screw	Brass
Seals	NBR

## Ordering data

	Pneumatic connection		Standard nominal flow rate q <sub>nN</sub> at 6 bar → 5 bar		Standard flow rate q <sub>n</sub> at 6 bar → 0 bar		Part no.	Type
			In direction of flow control	In blocked direc- tion	In direction of flow control	In blocked direc- tion		
	2	1	[l/min]	[l/min]	[l/min]	[l/min]		
	G1/8	QS-6	250	150 ... 260	420	460 ... 540	<b>1526931</b>	<b>VFOF-LE-H-G18-Q6</b>
	G1/4	QS-8	650	300 ... 650	1100	840 ... 1100	<b>1505391</b>	<b>VFOF-LE-H-G14-Q8</b>



## 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 operating/pilot medium	Operation with lubricated medium 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
Regulating screw	Nickel-plated brass
Seals	NBR

## Ordering data

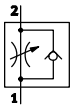
	Pneumatic connection		Standard nominal flow rate q <sub>nN</sub> at 6 bar → 5 bar		Standard flow rate q <sub>n</sub> at 6 bar → 0 bar		Part no.	Type
			In direction of flow control	In blocked direc- tion	In direction of flow control	In blocked direc- tion		
	2	1	[l/min]	[l/min]	[l/min]	[l/min]		
	QS-3	QS-3	85	120	–	–	193965	GR-QS-3
	QS-4	QS-4	40	100 ... 110	130	170 ... 185	193966	GR-QS-4-LF
			110	165	–	–	193967	GR-QS-4
	QS-6	QS-6	75	260 ... 270	110	500 ... 510	193968	GR-QS-6-LF
			230	430	–	–	193969	GR-QS-6
QS-8	QS-8	250	500	–	–	193970	GR-QS-8	

## Accessories – Ordering data

	For type	Description	Part no.	Type
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 operating/pilot medium	Operation with lubricated medium 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
Regulating screw	Brass	Stainless steel		Brass			
Seals	NBR						

## Ordering data

	Pneumatic connection		Standard nominal flow rate qnN at 6 bar → 5 bar		Part no.	Type
	2	1	In direction of flow control [l/min]	In blocked direction [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

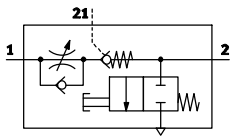
## Accessories – Ordering data

	For type	Description	Part no.	Type
	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

FESTO

## Data sheet



Technical data		
Pneumatic connection 2	G $\frac{1}{8}$	G $\frac{1}{4}$
Pneumatic port 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 operating/pilot medium	Operation with lubricated medium 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
Regulating screw	Brass
Cover	ES-BE
Seals	NBR

## Ordering data

	Pneumatic connection		Pilot air port	Standard nominal flow rate q <sub>nN</sub> at 6 bar → 5 bar		Standard flow rate q <sub>n</sub> at 6 bar → 0 bar		Part no.	Type
				In direction of flow control	In blocked direction	In direction of flow control	In blocked direction		
	2	1	21	[l/min]	[l/min]	[l/min]	[l/min]		
	G $\frac{1}{8}$	QS-6	QS-6	240	150 ... 230 120 ... 220 <sup>1)</sup>	420	400 ... 460 400 ... 460 <sup>1)</sup>	8001459	VFOF-LE-BAH-G18-Q6
	G $\frac{1}{4}$	QS-8	QS-8	590	315 ... 540 310 ... 540 <sup>1)</sup>	940	830 ... 1000 840 ... 1000 <sup>1)</sup>	1927030	VFOF-LE-BAH-G14-Q8

1) Unactuated.



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/vffk](http://www.festo.com/catalogue/vffk)



Additional information/Support/User documentation  
→ [www.festo.com/sp/vffk](http://www.festo.com/sp/vffk)

Flow control valves  
Flow control/silencer

# VFFK



+ With polymer silencer



- Reduces noise generation
- Can be screwed into the exhaust controls of control valves and drives
- Connecting thread from M5 ... R $\frac{1}{4}$

→ [www.festo.com/catalogue/vffk](http://www.festo.com/catalogue/vffk)

## Data sheet

Technical data	
Pneumatic connection 1	M5   M7   R $\frac{1}{8}$   R $\frac{1}{4}$
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 operating/pilot medium	Operation with lubricated medium possible
Operating pressure [bar]	0 ... 10
Ambient temperature [°C]	0 ... +60

## Materials

Materials	
Pneumatic connection 1	M5   M7   R $\frac{1}{8}$   R $\frac{1}{4}$
Silencer insert	PE
Threaded plug	Nickel-plated brass
Regulating screw	Nickel-plated brass
Knurled nut	Aluminium
Seals	NBR   -

## Ordering data

	Pneumatic connection 1	Standard flow rate q <sub>n</sub> at 6 bar → 0 bar [l/min]	Part no.	Type
	M5	0 ... 80	133140	VFFK-C-K-M5-P
	M7	0 ... 100	133141	VFFK-C-K-M7-P
	R $\frac{1}{8}$	0 ... 270	133142	VFFK-C-K-R18-P
	R $\frac{1}{4}$	0 ... 420	133143	VFFK-C-K-R14-P



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/vppm](http://www.festo.com/catalogue/vppm)



Additional information/Support/User documentation  
→ [www.festo.com/sp/vppm](http://www.festo.com/sp/vppm)

Proportional valves

Proportional pressure regulator

# 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 top precision



- Choice of regulator characteristics thanks to presets: fast, universal, precise
- Multi-sensor control: optimum regulator results, robust regulator response, temperature compensated
- IO-Link, for direct connection to a higher-level IO-Link/I-Port master
- Diagnostics
- Key or display operation
- Connection size G<sup>1</sup>/<sub>8</sub>, G<sup>1</sup>/<sub>4</sub>, G<sup>1</sup>/<sub>2</sub>
- Manifold assembly possible: 2, 3 or 4 valve positions




→ [www.festo.com/catalogue/vppm](http://www.festo.com/catalogue/vppm)

### Product range overview

Type	Design	Pneumatic connection	Nominal width  Pressurisation/ exhausting [mm]	Pressure regulation range  [bar]	Setpoint range			→ Page/ online			
					Voltage type 0 ... 10 V	Current type 4 ... 20 mA	Digital				
<b>Operator unit with LED</b>											
VPPM	Piloted diaphragm valve	G <sup>1</sup> / <sub>8</sub>	6/4.5	0.02 ... 2	■	■	–	770			
				0.06 ... 6	■	■	–				
				0.1 ... 10	■	■	–				
		Sub-base	6/4.5, 8/7	0.02 ... 2	■	■	–				
				0.06 ... 6	■	■	–				
				0.1 ... 10	■	■	–				
		G <sup>1</sup> / <sub>4</sub>	8/7	0.06 ... 6	■	■	–				
				0.1 ... 10	■	■	–				
		G <sup>1</sup> / <sub>2</sub>	12/12	0.06 ... 6	■	■	–				
				0.1 ... 10	■	■	–				
		<b>Operator unit with LED with IO-Link</b>									
		VPPM	Piloted diaphragm valve	G <sup>1</sup> / <sub>8</sub>	6/4.5	0.02 ... 2	–		–	■	770
0.06 ... 6	–					–	■				
0.1 ... 10	–					–	■				
Sub-base	6/4.5, 8/7			0.02 ... 2	–	–	■				
				0.06 ... 6	–	–	■				
				0.1 ... 10	–	–	■				
G <sup>1</sup> / <sub>4</sub>	8/7			0.06 ... 6	–	–	■				
				0.1 ... 10	–	–	■				
G <sup>1</sup> / <sub>2</sub>	12/12			0.06 ... 6	–	–	■				
				0.1 ... 10	–	–	■				
<b>Operator unit with LCD, pressure unit variable</b>											
VPPM	Piloted diaphragm valve			G <sup>1</sup> / <sub>8</sub>	6/4.5	0.02 ... 2	■	■	–	770	
		0.06 ... 6	■			■	–				
		0.1 ... 10	■			■	–				
		Sub-base	6/4.5	0.02 ... 2	■	■	–				
				0.06 ... 6	■	■	–				
				0.1 ... 10	■	■	–				
		G <sup>1</sup> / <sub>4</sub>	8/7	0.06 ... 6	■	■	–				
				0.1 ... 10	■	■	–				
		G <sup>1</sup> / <sub>2</sub>	12/12	0.06 ... 6	■	■	–				
				0.1 ... 10	■	■	–				
		<b>Operator unit with LED, for valve terminal MPA-S</b>									
		VPPM	Piloted diaphragm valve	Sub-base MPA	6/4.5, 8/7	0.02 ... 2	–	–	■		mpas
0.06 ... 6	–					–	■				
0.1 ... 10	–					–	■				

# Proportional pressure regulators VPPM

## Technical data

-  Flow rate  
380 ... 7000 l/min
-  Operating voltage  
21.6 ... 26.4 V DC
-  Pressure regulation range  
0.02 ... 10 bar



### Technical data

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

Design	Piloted diaphragm regulator
Type of mounting	Via through-hole

### Electrical data

Type	VPPM-6	VPPM-8	VPPM-12
Operating voltage range [V DC]	21.6 ... 26.4		
Max. electrical power consumption [W]	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
Inlet pressure 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		

### Materials

Housing	Wrought aluminium alloy
Seals	NBR



## Technical data

-  - Flow rate  
380 ... 7000 l/min
-  - Operating voltage  
18 ... 30 V DC
-  - Pressure regulation range  
0.02 ... 10 bar



Technical data		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>	
Design	Piloted diaphragm regulator		
Type of mounting	Via through-hole		
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

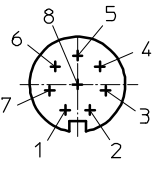
Electrical data		VPPM-6	VPPM-8	VPPM-12
Type				
Operating voltage range	[V DC]	18 ... 30		
Max. electrical power consumption	[W]	7		12
Degree of protection to EN 60529		IP65 (with plug socket)		

Operating conditions		VPPM-6	VPPM-8	VPPM-12
Pressure regulation range	[bar]	0.02 ... 2	0.06 ... 6	0.1 ... 10
Inlet pressure 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		

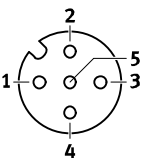
Materials	
Housing	Wrought aluminium alloy
Seals	NBR

## Technical data

## 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

## Pin allocation of IO-Link interface

	Pin	Allocation	Function
	1	24 V DC (U <sub>EL/SEN</sub> )	Operating voltage supply (PS)
	2	n.c.	Not connected
	3	0 V DC (U <sub>EL/SEN</sub> )	Operating voltage supply (PS)
	4	C/Q I-Port	Data communication
	5	n.c.	Not connected
	-	FE	Functional earth

## Order code

VPPM		-		-	L	-	1	-		-	OL		-			-		
<b>Type</b>																		
VPPM	Modular proportional pressure regulator																	
<b>Nominal width</b>																		
6	6 mm																	
8	8 mm																	
12	12 mm																	
<b>Design</b>																		
L	In-line valve																	
F	Flanged valve																	
<b>Mounting method</b>																		
-	Freely mountable																	
C	H-rail																	
P	Manifold rail PR																	
<b>Dynamic response class</b>																		
L	Low																	
<b>Valve function</b>																		
1	3/2-way valve, normally closed																	
<b>Pneumatic connection</b>																		
G18	G1/8 thread																	
G14	G1/4 thread																	
G12	G1/2 thread																	
F	Flange/sub-base <span style="border: 1px solid black; padding: 0 2px;">1</span>																	
<b>Lower pressure value of control range</b>																		
OL	0 bar																	
<b>Upper pressure value of control range</b>																		
2H	2 bar																	
6H	6 bar																	
10H	10 bar																	
<b>Setpoint specification for individual valve</b>																		
V1	0 ... 10 V																	
LK	IO-Link																	
A4	4 ... 20 mA																	
<b>Switching output</b>																		
N	NPN switching																	
P	PNP switching																	
<b>Accuracy</b>																		
-	2% (standard)																	
S1	1%																	
<b>Operator unit</b>																		
-	LED (standard)																	
C1	With LCD, pressure unit variable																	

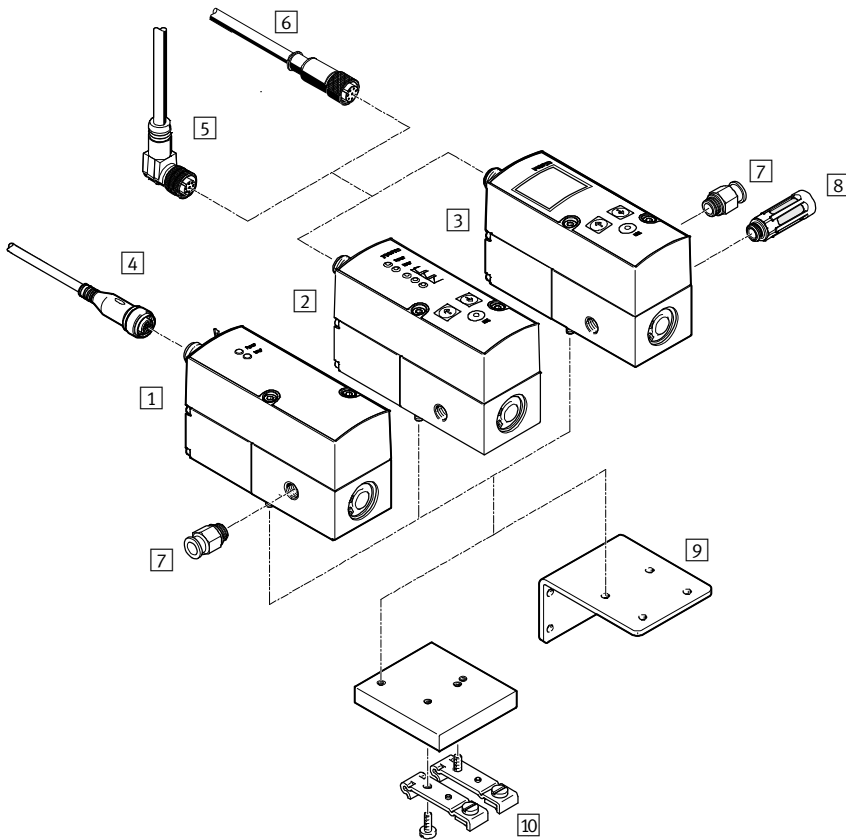
1 Only for flanged valve code F

**Order example:**

VPPM-6L-L-1-G18-OL2H-V1P

Modular proportional pressure regulator - nominal size: 6 mm - design: in-line valve - free mounting - dynamic response class: low - 3/2-way valve, normally closed - pneumatic connection: G1/8 thread - lower regulation range: 0 bar; upper regulation range: 2 bar - setpoint specification: 0 ... 10 V, PNP switching - 2% accuracy - with LED

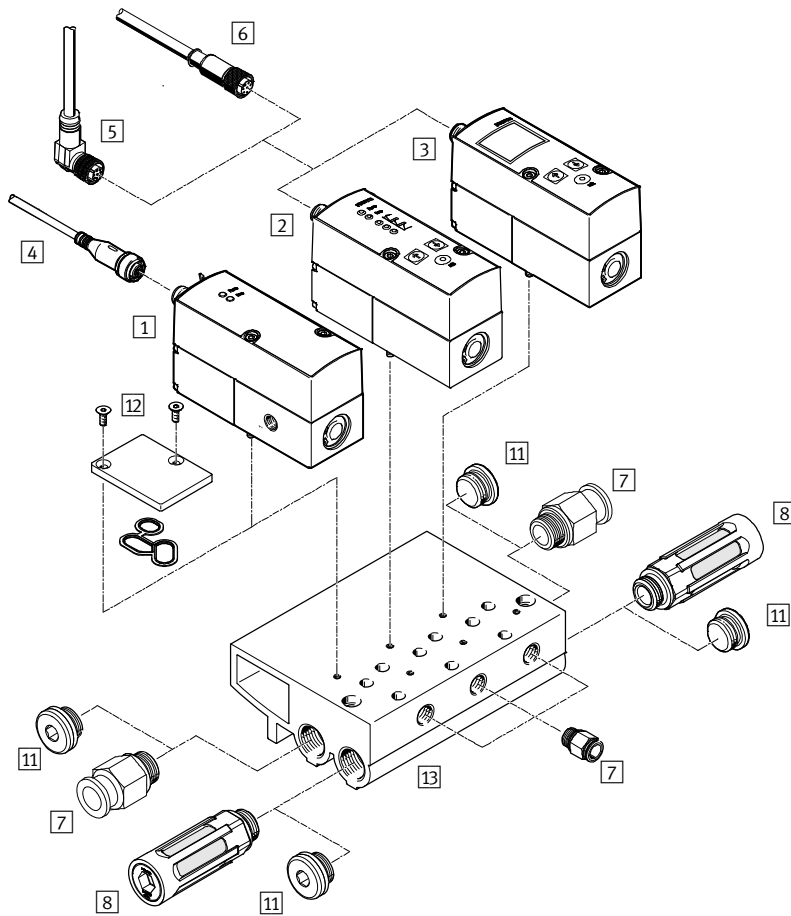
## Peripherals overview – Individual mounting



8

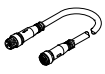






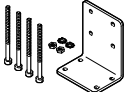
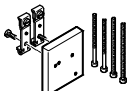

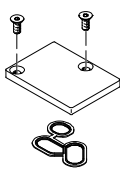
Accessories	→ Page/online
1 Proportional pressure regulator VPPM, operator unit with LED, IO-Link	773
2 Proportional pressure regulator VPPM, operator unit with LED	773
3 Proportional pressure regulator VPPM, operator unit with LCD	773
4 Connecting cable NEBU-M12G5	776
5 Angled plug socket with cable NEBU-M12W8	776
6 Straight plug socket with cable SIM-M12-8GD	776
7 Push-in fitting QS for connecting compressed air tubing with standard O.D.	776
8 Silencer U for fitting in exhaust ports	776
9 Bracket VAME-P1-A for mounting the valve	776
10 H-rail mounting VAME-P1-T for mounting on an H-rail	776
– Setpoint module MPZ	777

## Peripherals overview – Manifold assembly

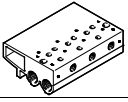



Accessories	→ Page/online
<b>1</b> Proportional pressure regulator VPPM, operator unit with LED, IO-Link	773
<b>2</b> Proportional pressure regulator VPPM, operator unit with LED	773
<b>3</b> Proportional pressure regulator VPPM, operator unit with LCD	773
<b>4</b> Connecting cable NEBU-M12G5	776
<b>5</b> Angled plug socket with cable NEBU-M12W8	776
<b>6</b> Straight plug socket with cable SIM-M12-8GD	776
<b>7</b> Push-in fitting QS for connecting compressed air tubing with standard O.D.	776
<b>8</b> Silencer U for fitting in exhaust ports	776
<b>11</b> Blanking plug B	776
<b>12</b> Blanking plate VABB-P1, for vacant position, seal and countersunk screws included in the scope of delivery	776
<b>13</b> Manifold block VABM	777
– Setpoint module MPZ	777

## Accessories – Ordering data

	Description	Part No.	Type
<b>4</b>	<b>Connecting cable for IO-Link, straight socket, M12x1, 5-pin, degree of protection IP65, IP68, IP69K</b>		<b>Technical data → 1162</b>
	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
<b>5</b>	<b>Plug socket with cable, angled socket, 8-pin, M12</b>		<b>Technical data → 1162</b>
	Cable length 2 m	542256	NEBU-M12W8-K2-10-N-LE8
	Cable length 5 m	542257	NEBU-M12W8-K-5-N-LE8
	Cable length 10 m	570007	NEBU-M12W8-K-10-N-LE8
<b>6</b>	<b>Plug socket with cable, straight socket, 8-pin, M12,</b>		<b>Technical data → 1162</b>
	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
	<b>Connecting cable, straight socket, 8-pin, and 1 straight plug connector, 4-pin</b>		<b>Technical data → 1162</b>
	Cable length 2 m	553575	NEBV-M12G8-K-2-M12G4
	Cable length 5 m	553576	NEBV-M12G8-K-5-M12G4
<b>8</b>	<b>Straight socket, 8-pin, and 2 straight plug connectors, 4-pin</b>		
	Straight socket, 8-pin, and 2 straight plug connectors, 4-pin	547888	NEBV-M12G8-KD-3-M12G4
<b>7</b>	<b>Push-in fitting</b>		<b>Technical data → 1098</b>
	For G $\frac{1}{8}$	★ 186098	QS-G $\frac{1}{8}$ -8
	For G $\frac{1}{4}$	★ 186099	QS-G $\frac{1}{4}$ -8
	For G $\frac{1}{2}$	★ 186104	QS-G $\frac{1}{2}$ -12
<b>8</b>	<b>Silencer</b>		<b>Technical data → 1237</b>
	For G $\frac{1}{8}$	★ 6841	U- $\frac{1}{8}$ -B
	For G $\frac{1}{4}$	★ 6842	U- $\frac{1}{4}$ -B
	For G $\frac{1}{2}$	★ 6844	U- $\frac{1}{2}$ -B
<b>9</b>	<b>Bracket</b>		
	For valve mounting	542251	VAME-P1-A
<b>10</b>	<b>H-rail mounting</b>		
	For individual valve	542255	VAME-P1-T
<b>11</b>	<b>Blanking plug</b>		<b>Technical data online: → b-1</b>
	For G $\frac{1}{8}$ thread	3568	B- $\frac{1}{8}$
	For G $\frac{1}{4}$ thread	3569	B- $\frac{1}{4}$
	For G $\frac{1}{2}$ thread	3571	B- $\frac{1}{2}$
<b>12</b>	<b>Blanking plate</b>		
	For one valve position	558350	VABB-P1

## Accessories – Ordering data

	Description	Part No.	Type
	<b>13</b> <b>Manifold block</b>	Technical data online: <a href="#">→ vabm</a>	
	2 valve positions	542252	VABM-P1-SF-G18-2-P3
	3 valve positions	542253	VABM-P1-SF-G18-3-P3
	4 valve positions	542254	VABM-P1-SF-G18-4-P3
	<b>Setpoint module</b>	Technical data <a href="#">→ mpz</a>	
	Setpoint module for generating 6 + 1 analogue voltage signals	546224	MPZ-1-24DC-SGH-6-SW

