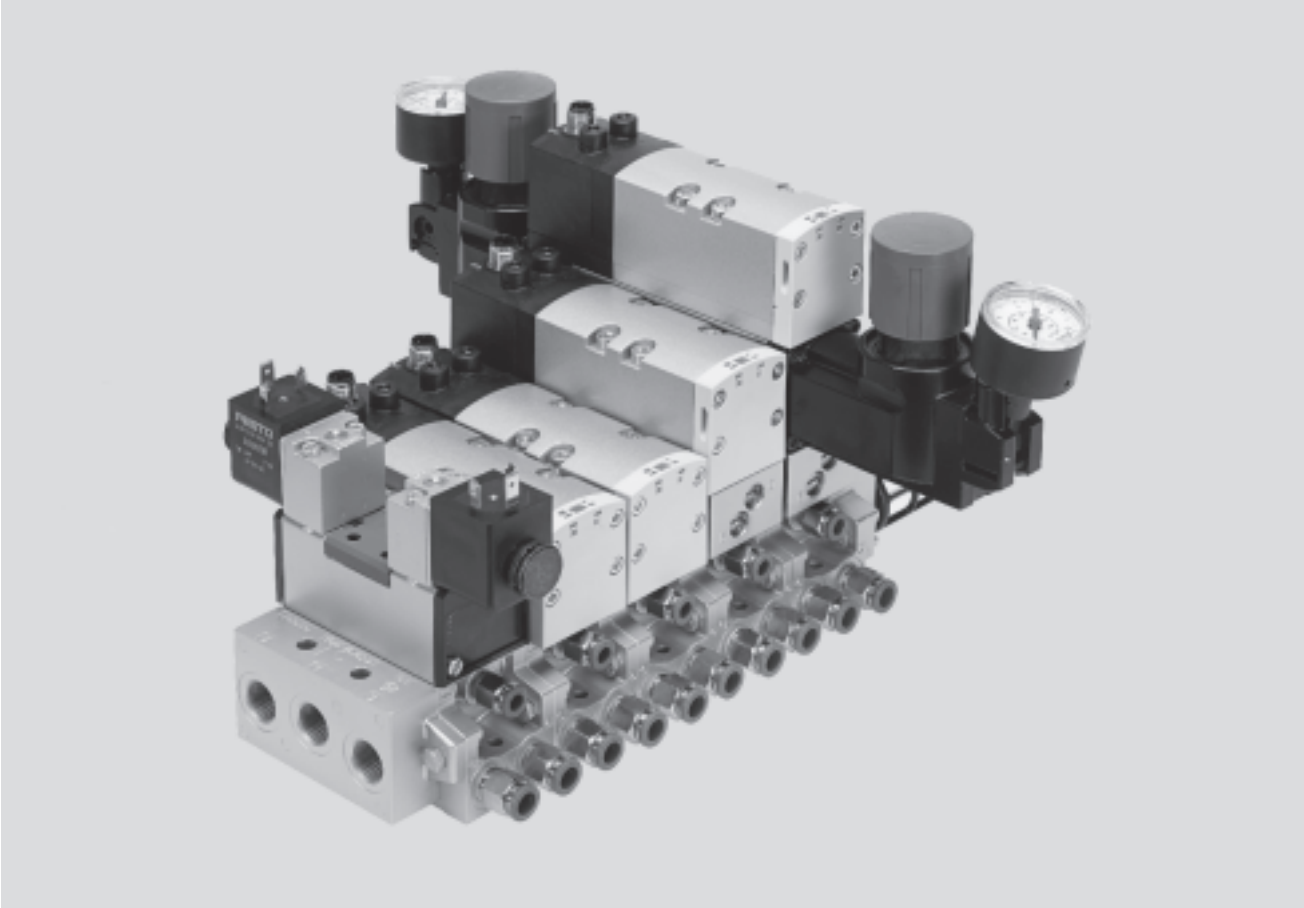
Solenoid valves, to ISO 5599-1

FESTO

Solenoid valves, to ISO 5599-1

Key features



Innovative

- High-performance valves in sturdy metal housing
- Individual electrical connection via square plug sockets or centrally for each valve via round plug sockets
- Valve replacement under pressure possible using vertical pressure shut-off plate
- Reverse operation
- Vacuum operation

Versatile

- Modular system offering a range of configuration options
- Conversions and extensions are possible at any time
- Integration of innovative function modules possible
  - Pressure regulator plate
  - Flow control plate
  - Vertical pressure shut-off plate
  - Vertical supply plate
- Vertical supply plates permit a flexible air supply and variable pressure zones
- Wide range of valve functions
- Extensive operating voltage range from 12 V DC to 230 V AC

Reliable

- Sturdy and durable metal components
  - Valves
  - Horizontal stacking plates
  - Vertical stacking plates
- Fast troubleshooting thanks to LED in the plug socket or illuminating seal
- LED integrated in the valve with the round plug variant
- Reliability of service thanks to valves that can be replaced quickly and easily
- Manual override
- Durable thanks to tried-and-tested piston spool valves

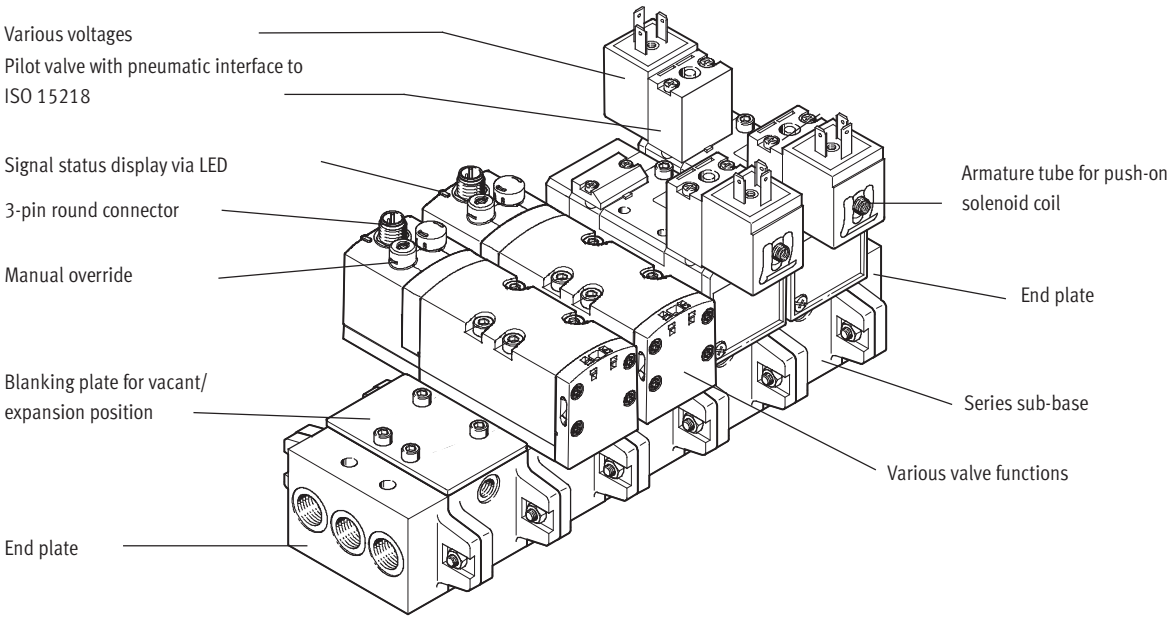
Easy to mount

- Plug-in pressure gauges on the pressure regulator plate

Solenoid valves, to ISO 5599-1

Key features

Individual valve manifold



Equipment options

2x 2/2-way valve, single solenoid

- Normally closed
- Normally closed, vacuum operation possible at ports 3 and 5

2x 3/2-way valve, single solenoid

- Normally open
- Normally closed
- 1x normally open, 1x normally closed
- Reverse operation possible (➔12)

5/2-way valve

- Single solenoid, mechanical or pneumatic spring return
- Double solenoid
- Double solenoid, with dominant signal at port 14

5/3-way valve

- Mid-position pressurised
- Mid-position closed
- Mid-position exhausted

Special features

Operation with external pilot air

- For vacuum applications
- For working pressures lower than 3 bar
- For significant pressure fluctuations in the power section. Power section and pneumatic control section are decoupled
- For heavily lubricated air in the power section
- For manifolds if the pressure zones are created via ducts 3 and 5 (not possible with 2x 3/2)
- For manifolds or pressure zones that are equipped with reversible 2x 3/2-way valves (valves on request)

Operation with internal pilot air

- For small pressure fluctuations in the power section
- For using pressure regulator plates in a vertical stacking construction, also in reverse operation
- As a low-cost solution

Reverse operation with pressure supply via ducts 3 and 5

- Pressure zone separation via ducts 3 and 5
  - Example: duct 3 vacuum, duct 5 ejector pulse
  - Example: duct 3 high pressure for advancing the piston rod of a double-acting cylinder. Duct 5 low pressure for retracting the piston rod with low energy consumption
- 2x 3/2-way valves used as 5/4-way valve with controllable overlapping and pressure zone separation with the reversible variant

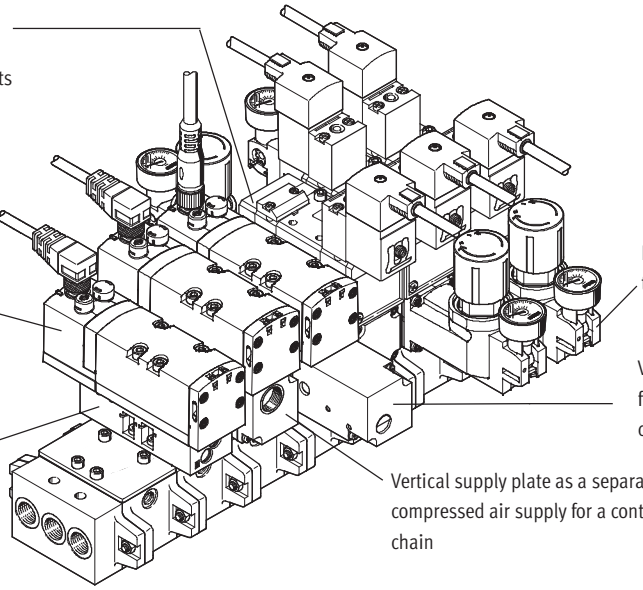
Reverse operation with a pressure regulator plate, compressed air supply via duct 1

- Reversible pressure regulator combined with a reversible 2x 3/2-way valve regulates outputs 2 and 4
  - AB regulator for outputs 2 and 4
  - A regulator for output 4
  - B regulator for output 2
- Reversible pressure regulators are in the control position immediately after the power supply is switched on
  - Adjustment possible at all times
  - Dynamic response characteristics
  - Reduced regulator load because the supply pressure is maintained when the valve is switched
  - Venting not via the regulator

Solenoid valves, to ISO 5599-1

Key features

Valve manifold with vertical stacking



Vertical stacking function

Pressure regulator plate

- Single variant to regulate the pressure at output 4(A) or 2(B) or at input 1(P)
- Dual variant to regulate the pressure at output 4(A) and 2(B) individually
- Reverse variant for the outputs so that the regulator is in the control position
- With pressure gauge connection

Flow control plate

- Designed with two flow control valves at which the exhaust air flow rate at exhausts 5 or 3 can be adjusted. This enables the movement of the drive to be initiated and the desired speed to be set at the manifold using the manual override.

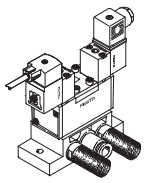
Vertical pressure shut-off plate

- Equipped with a switch via which the compressed air supply can be shut off. This enables a directional control valve or subsequent vertical stacking plate to be replaced without switching off the overall air supply
- If the control chain has a redundant connection, the cycle can continue in the case of a cyclical control system

Vertical supply plate

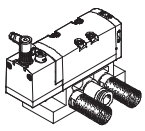
- As additional air supply for one valve
- To supply an additional pressure zone

Individual connection with square plug



The directional control valve has a pilot control to ISO 15218. The solenoid coil pushed onto the armature tube can be chosen in different designs and operating voltages.

Individual connection with central round plug

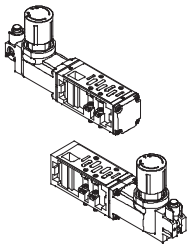


The electrical connection is established via a standardised M12 socket 24 V DC (EN 61076-2-101).

Solenoid valves, to ISO 5599-1

Key features

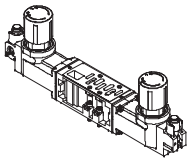
Pressure regulator plate with one pressure regulator



Versions

- For pressure regulation at supply input 1 (P). Set pressure is the same for outputs 2 and 4
- For pressure regulation at working port 4 (A)
  - The pressure regulator for reverse operation is supplied via port 1 of the sub-base and supplies port 5 on the directional control valve
  - The directional control valve vents via port 1 to ports 3 and 5 of the sub-base
- For pressure regulation at working port 2 (B)
  - Input 3 is supplied here in reverse operation

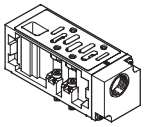
Pressure regulator plate with two pressure regulators



Versions

- For pressure regulation at working ports 4 (A) and 2 (B)
  - The pressure regulators for reverse operation are supplied via port 1 of the sub-base and supply inputs 5 and 3 on the directional control valve
  - The directional control valve vents via port 1 to ports 3 and 5 of the sub-base

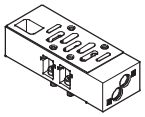
Vertical supply plate



Versions

- As intermediate supply
  - For one valve
  - To supply an additional pressure zone
- Can be equipped with a directional control valve

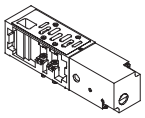
Flow control plate



Versions

- Exhaust air restrictors in ducts 3 and 5
  - The flow control plates function as supply air restrictors for pressure zones that are formed via ducts 3 and 5

Vertical pressure shut-off plate



Versions

- A switch activated with a slotted head screwdriver shuts off duct 1
  - The overlying flow control plates, pressure regulator plates or directional control valves can be replaced
  - Other components of the control chain such as drives, for example, can be replaced following venting via the directional control valve

Pressure gauge

Version

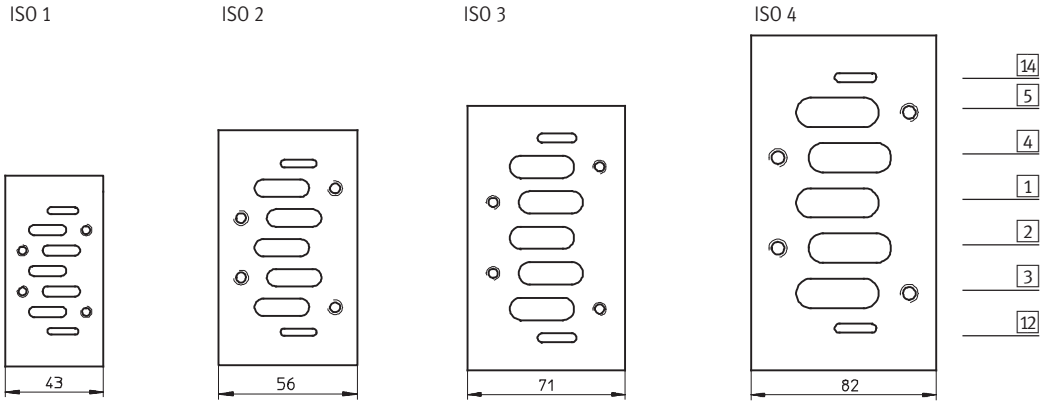
- Can be connected to the pressure regulator plates

Solenoid valves, to ISO 5599-1

Key features

Port pattern on sub-base to ISO 5599-1

Defined interface between valve and sub-base



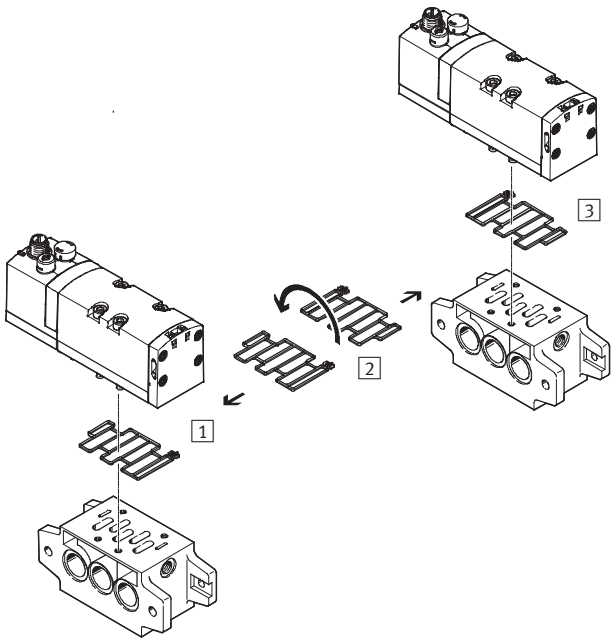
Sub-base port designations

		Solenoid valves
14	Control section	External pilot air supply for pilot valves 12 and 14
5	Power section	Exhaust port 5
4	Power section	Working port 4
1	Power section	Working air supply connection 1
2	Power section	Working port 2
3	Power section	Exhaust port 3
12	Control section	Exhaust port for pilot air from 12 and 14

VSVA

Conversion of pilot air venting

VSVA valve manifolds are supplied with unducted venting of the pilot air. By turning the seal between the valve and manifold block, exhaust air (pilot air) can be diverted into pilot duct 12 and can thus be contained and silenced (see illustration).

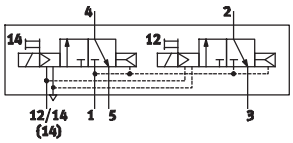
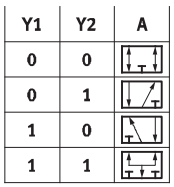
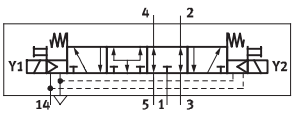
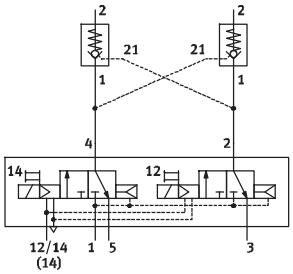
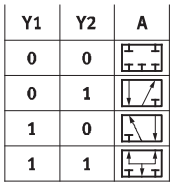
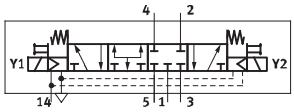
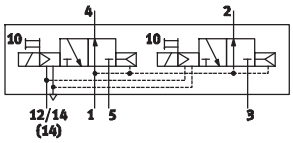
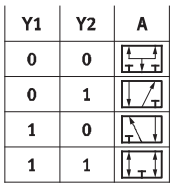
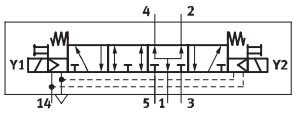
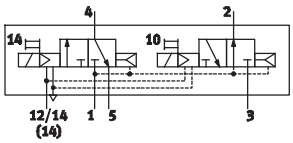
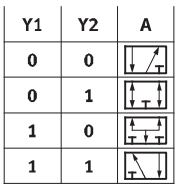
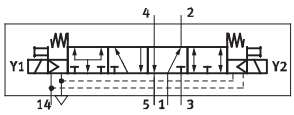


1 Ducted pilot air venting
2 Turning seal by 180°
3 Unducted pilot air venting (as supplied)

Solenoid valves, to ISO 5599-1

Key features

Use of 2x 3/2-way valve as 5/4-way valve

Code	Circuit symbol	Value table	Equivalent circuit symbol	Function
K				• Normally exhausted • The double-acting drive connected to outputs 2 and 4 is unpressurised when the valve is in the normal position and can be moved by an external force • If there is a signal present at Y1(14) and Y2(12), there is pressure at outputs 2 and 4
				• Normally closed (by combining directional control valve code K and two piloted non-return valves) • The piloted non-return valves connected to outputs 2 and 4 are unpressurised when the valve is in the normal position and the pressures in the drive close the non-return valves leak-tight • The drive stops when the forces are in equilibrium • Leakages can only occur via the drive seals • If there is a signal present at Y1(14) and Y2(12), the same pressure is present at outputs 2 and 4
N				• Normally open • The double-acting drive connected to outputs 2 and 4 is supplied with the same compressed air at both ends when the valve is in the normal position and stops when the forces are in equilibrium • If there is a signal present at Y1(10) and Y2(10), outputs 2 and 4 are exhausted, the drive is unpressurised and can be moved by an external force
H				• Normally open after output 2 • The double-acting drive connected to outputs 2 and 4 is supplied with compressed air via output 2 when the valve is in the normal position. Output 4 is exhausted. The drive is thus in a clearly defined position in the initial position of the system, as would also be the case with a single solenoid 5/2-way valve • If there is a signal present at Y1(14) and Y2(10), output 2 is exhausted and there is pressure at output 4. The drive leaves the initial position • A closed circuit can be created with this 2x 3/2-way valve by combining it with piloted non-return valves. However, this is then selected by an active signal at Y2(10)

Solenoid valves, to ISO 5599-1

Product range overview

ISO size/ width	Function		Solenoid coil ➔ Page/Internet				
			N1[1]	F[1]	VSVA	D[2]	EB
1/42 mm	**Operating voltage 12 V DC**						
	5/2-way valve	Single solenoid, pneumatic spring	–	27	–	–	–
		Single solenoid, mechanical spring	–	27	–	–	–
		Double solenoid	–	27	–	–	–
		Double solenoid, dominant signal at 14	–	27	–	–	–
	5/3-way valve	Mid-position closed	–	27	–	–	–
		Mid-position pressurised	–	27	–	–	–
		Mid-position exhausted	–	27	–	–	–
	Operating voltage 24 V AC						
	5/2-way valve	Single solenoid, pneumatic spring	–	27	–	–	–
		Single solenoid, mechanical spring	–	27	–	–	–
		Double solenoid	–	27	–	–	–
		Double solenoid, dominant signal at 14	–	27	–	–	–
	5/3-way valve	Mid-position closed	–	27	–	–	–
		Mid-position pressurised	–	27	–	–	–
		Mid-position exhausted	–	27	–	–	–
	Operating voltage 24 V DC						
	2x2/2-way valve	2x closed	–	–	35	–	–
	2x3/2-way valve	2x closed	–	–	35	–	–
		2x open	–	–	35	–	–
		1x closed, 1x open	–	–	35	–	–
	5/2-way valve	Single solenoid, pneumatic spring	19	27	35	45	–
		Single solenoid, mechanical spring	19	27	35	–	–
		Double solenoid	19	27	35	45	–
		Double solenoid, dominant signal at 14	19	27	35	45	–
	5/3-way valve	Mid-position closed	19	27	35	45	–
		Mid-position pressurised	19	27	–	45	53
		Mid-position exhausted	19	27	35	45	–
	Operating voltage 42 V AC						
	5/2-way valve	Single solenoid, pneumatic spring	–	27	–	–	–
		Single solenoid, mechanical spring	–	27	–	–	–
		Double solenoid	–	27	–	–	–
		Double solenoid, dominant signal at 14	–	27	–	–	–
	5/3-way valve	Mid-position closed	–	27	–	–	–
		Mid-position pressurised	–	27	–	–	–
		Mid-position exhausted	–	27	–	–	–
	Operating voltage 42 V DC						
	5/2-way valve	Single solenoid, pneumatic spring	–	27	–	–	–
		Single solenoid, mechanical spring	–	27	–	–	–
		Double solenoid	–	27	–	–	–
		Double solenoid, dominant signal at 14	–	27	–	–	–
	5/3-way valve	Mid-position closed	–	27	–	–	–
		Mid-position pressurised	–	27	–	–	–
		Mid-position exhausted	–	27	–	–	–
1/42 mm	**Operating voltage 48 V AC**						
	5/2-way valve	Single solenoid, pneumatic spring	–	27	–	–	–
		Single solenoid, mechanical spring	–	27	–	–	–
		Double solenoid	–	27	–	–	–
		Double solenoid, dominant signal at 14	–	27	–	–	–
	5/3-way valve	Mid-position closed	–	27	–	–	–
		Mid-position pressurised	–	27	–	–	–
		Mid-position exhausted	–	27	–	–	–

1) Coil with required voltage must be ordered separately
2) Only with internal pilot air supply

Solenoid valves, to ISO 5599-1

Product range overview

ISO size/ width	Function		Solenoid coil ➔ Page/Internet				
			N1[1]	F[1]	VSVA	D	EB
1/42 mm	**Operating voltage 110 V AC**						
	5/2-way valve	Single solenoid, pneumatic spring	19	27	–	–	–
		Single solenoid, mechanical spring	19	27	–	–	–
		Double solenoid	19	27	–	–	–
		Double solenoid, dominant signal at 14	19	27	–	–	–
	5/3-way valve	Mid-position closed	19	27	–	–	–
		Mid-position pressurised	19	27	–	–	–
		Mid-position exhausted	19	27	–	–	–
	Operating voltage 230 V AC						
	5/2-way valve	Single solenoid, pneumatic spring	19	27	–	–	–
		Single solenoid, mechanical spring	19	27	–	–	–
		Double solenoid	19	27	–	–	–
		Double solenoid, dominant signal at 14	19	27	–	–	–
	5/3-way valve	Mid-position closed	19	27	–	–	–
		Mid-position pressurised	19	27	–	–	–
		Mid-position exhausted	19	27	–	–	–
	Operating voltage 240 V AC						
	5/2-way valve	Single solenoid, pneumatic spring	–	27	–	–	–
		Single solenoid, mechanical spring	–	27	–	–	–
		Double solenoid	–	27	–	–	–
		Double solenoid, dominant signal at 14	–	27	–	–	–
	5/3-way valve	Mid-position closed	–	27	–	–	–
		Mid-position pressurised	–	27	–	–	–
		Mid-position exhausted	–	27	–	–	–

1) Coil with required voltage must be ordered separately

Solenoid valves, to ISO 5599-1

Product range overview

ISO size/ width	Function		Solenoid coil ➔ Page/Internet				
			N1[1]	F[1]	VSVA	D[2]	EB
2/52 mm	**Operating voltage 12 V DC**						
	5/2-way valve	Single solenoid, pneumatic spring	–	31	–	–	–
		Single solenoid, mechanical spring	–	31	–	–	–
		Double solenoid	–	31	–	–	–
		Double solenoid, dominant signal at 14	–	31	–	–	–
	5/3-way valve	Mid-position closed	–	31	–	–	–
		Mid-position pressurised	–	31	–	–	–
		Mid-position exhausted	–	31	–	–	–
	Operating voltage 24 V AC						
	5/2-way valve	Single solenoid, pneumatic spring	–	31	–	–	–
		Single solenoid, mechanical spring	–	31	–	–	–
		Double solenoid	–	31	–	–	–
		Double solenoid, dominant signal at 14	–	31	–	–	–
	5/3-way valve	Mid-position closed	–	31	–	–	–
		Mid-position pressurised	–	31	–	–	–
		Mid-position exhausted	–	31	–	–	–
	Operating voltage 24 V DC						
	2x2/2-way valve	2x closed	–	–	40	–	–
	2x3/2-way valve	2x closed	–	–	40	–	–
		2x open	–	–	40	–	–
		1x closed, 1x open	–	–	40	–	–
	5/2-way valve	Single solenoid, pneumatic spring	23	31	40	49	–
		Single solenoid, mechanical spring	23	31	40	–	–
		Double solenoid	23	31	40	49	–
		Double solenoid, dominant signal at 14	23	31	40	49	–
	5/3-way valve	Mid-position closed	23	31	40	49	–
		Mid-position pressurised	23	31	–	49	57
		Mid-position exhausted	23	31	40	49	–
	Operating voltage 42 V AC						
	5/2-way valve	Single solenoid, pneumatic spring	–	31	–	–	–
		Single solenoid, mechanical spring	–	31	–	–	–
		Double solenoid	–	31	–	–	–
		Double solenoid, dominant signal at 14	–	31	–	–	–
	5/3-way valve	Mid-position closed	–	31	–	–	–
		Mid-position pressurised	–	31	–	–	–
		Mid-position exhausted	–	31	–	–	–
	Operating voltage 42 V DC						
	5/2-way valve	Single solenoid, pneumatic spring	–	31	–	–	–
		Single solenoid, mechanical spring	–	31	–	–	–
		Double solenoid	–	31	–	–	–
		Double solenoid, dominant signal at 14	–	31	–	–	–
	5/3-way valve	Mid-position closed	–	31	–	–	–
		Mid-position pressurised	–	31	–	–	–
		Mid-position exhausted	–	31	–	–	–

1) Coil with required voltage must be ordered separately
2) Only with internal pilot air supply

Solenoid valves, to ISO 5599-1

Product range overview

ISO size/ width	Function		Solenoid coil ➔ Page/Internet				
			N1[1]	F[1]	VSVA	D	EB
2/52 mm	**Operating voltage 48 V AC**						
	5/2-way valve	Single solenoid, pneumatic spring	–	31	–	–	–
		Single solenoid, mechanical spring	–	31	–	–	–
		Double solenoid	–	31	–	–	–
		Double solenoid, dominant signal at 14	–	31	–	–	–
	5/3-way valve	Mid-position closed	–	31	–	–	–
		Mid-position pressurised	–	31	–	–	–
		Mid-position exhausted	–	31	–	–	–
	Operating voltage 110 V AC						
	5/2-way valve	Single solenoid, pneumatic spring	23	31	–	–	–
		Single solenoid, mechanical spring	23	31	–	–	–
		Double solenoid	23	31	–	–	–
		Double solenoid, dominant signal at 14	23	31	–	–	–
	5/3-way valve	Mid-position closed	23	31	–	–	–
		Mid-position pressurised	23	31	–	–	–
		Mid-position exhausted	23	31	–	–	–
	Operating voltage 230 V AC						
	5/2-way valve	Single solenoid, pneumatic spring	23	31	–	–	–
		Single solenoid, mechanical spring	23	31	–	–	–
		Double solenoid	23	31	–	–	–
		Double solenoid, dominant signal at 14	23	31	–	–	–
	5/3-way valve	Mid-position closed	23	31	–	–	–
		Mid-position pressurised	23	31	–	–	–
		Mid-position exhausted	23	31	–	–	–
	Operating voltage 240 V AC						
	5/2-way valve	Single solenoid, pneumatic spring	–	31	–	–	–
		Single solenoid, mechanical spring	–	31	–	–	–
		Double solenoid	–	31	–	–	–
		Double solenoid, dominant signal at 14	–	31	–	–	–
	5/3-way valve	Mid-position closed	–	31	–	–	–
		Mid-position pressurised	–	31	–	–	–
		Mid-position exhausted	–	31	–	–	–

1) Coil with required voltage must be ordered separately

Solenoid valves, to ISO 5599-1

Type codes for valves with round plug

VSVA	–	B	–	T	32	C	–	A	Z	D	–	D1	–	1	R5	L

Valve series	
VSVA	Standard valves to ISO 5599-1

Valve type	
B	Sub-base valve

Valve function	
M	Single solenoid
B	Double solenoid
D	Double solenoid with dominant signal at 14
P	Single solenoid, mid-position
T	2 single solenoid valves in one housing

Ports/switching positions	
22	2/2-way valve
32	3/2-way valve
52	5/2-way valve
53	5/3-way valve

Normal position/additional function	
C	Closed
U	Open
E	Exhausted
H	T with 1x open, 1x closed, double solenoid valve
N	T, closed, reverse operation
F	T, open, reverse operation
W	T, exhausted, reverse operation
V	T22C, vacuum operation

Reset method	
A	Pneumatic spring
M	Mechanical spring

Pilot air supply	
Z	External
	Internal

Manual override	
D	Non-detenting/detenting

Standard	
D1	ISO size 1, width 42 mm
D2	ISO size 2, width 52 mm

Operating voltage	
1	24 V DC

Electrical connection	
R5	Central plug M12x1

Signal status display	
L	LED (integrated)

Solenoid valves, to ISO 5599-1

Type codes for valves with square plug

MN1H	–	5/3	G	–	D-1	–		–		–		–	C

Type	
MN1H	Single solenoid, for N1 solenoid coil
MFH	Single solenoid, for F solenoid coil
MDH	Single solenoid, with D solenoid coil
JMN1H	Double solenoid, for N1 solenoid coil
JMN1DH	Double solenoid, for N1 solenoid coil, with dominant signal at 14
JMFH	Double solenoid, for F solenoid coil
JMFDH	Double solenoid, for F solenoid coil, with dominant signal at 14
JMDH	Double solenoid, with D solenoid coil

Valve function	
5/2	5/2-way valve
5/3	5/3-way valve

Normal position	
G	Closed
E	Exhausted
B	Pressurised

Size	
D-1	ISO size 1, width 42 mm
D-2	ISO size 2, width 52 mm
D-3	ISO size 3, width 65 mm
¾-D-4	ISO size 4, width 76 mm

Electrical connection, operating voltage	
Plug, square design to DIN EN 175301-803, type A	
24DC	24 V DC

Pilot air supply	
	Internal
S	External

Reset method	
FR	Mechanical spring
	Pneumatic spring

Generation	
C	C series

Solenoid valves, to ISO 5599-1

Type codes for valves with round plug

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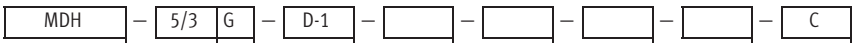


Type	
MDH	Single solenoid, with D solenoid coil
MEBH	Single solenoid, with EB solenoid coil
JMDH	Double solenoid, for D solenoid coil
JMDDH	Double solenoid, for D solenoid coil, with dominant signal at 14
JMEBH	Double solenoid, with EB solenoid coil
JMEBDH	Double solenoid, with EB solenoid coil, with dominant signal at 14

Valve function	
5/2	5/2-way valve
5/3	5/3-way valve

Normal position	
G	Closed
E	Exhausted
B	Pressurised

Size	
D-1	ISO size 1, width 42 mm
D-2	ISO size 2, width 52 mm
D-3	ISO size 3, width 65 mm

Electrical connection, operating voltage	
Central plug, round design, M12x1	
ZSR	24 V DC
Individual plug, round design, M12x1	
M12	24 V DC

Pin allocation	
	2-pin to VDMA
D	4-pin to Desina

Pilot air supply	
	Internal
S	External

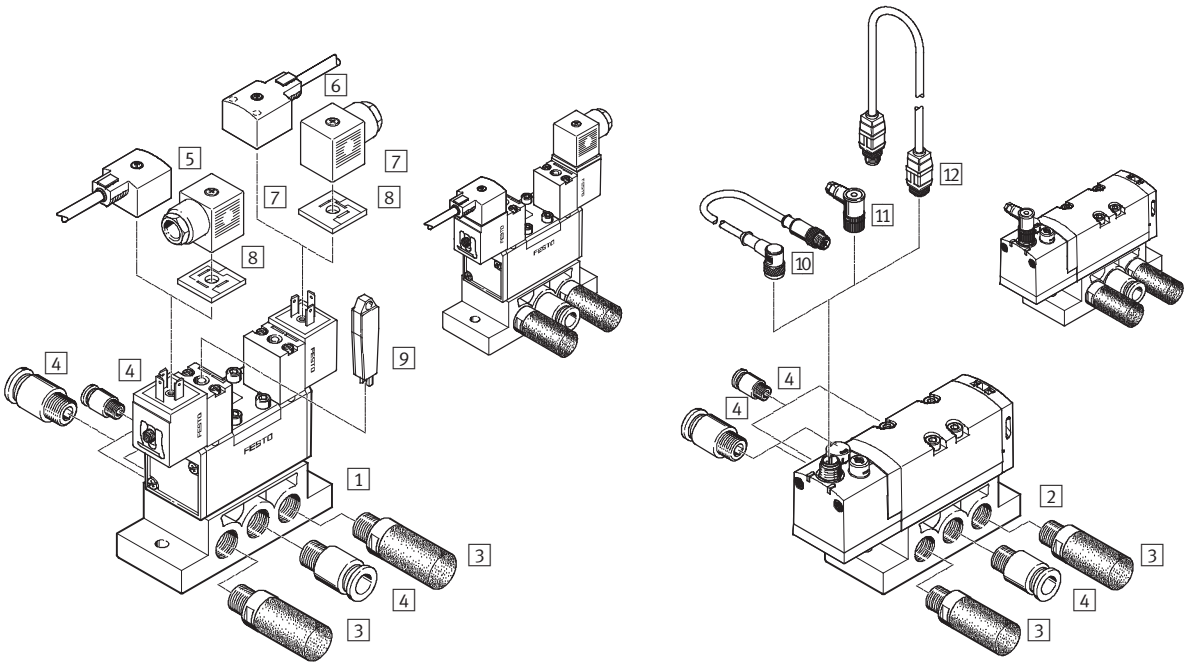
Reset method	
FR	Mechanical spring
	Pneumatic spring

Generation	
C	C series

Solenoid valves, to ISO 5599-1

Peripherals overview

Individual mounting with square plug or round plug

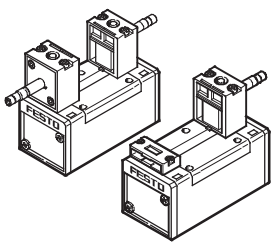


Component parts

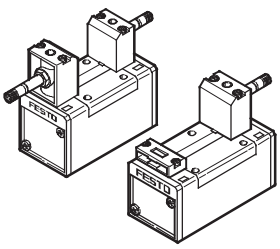
	Type	Brief description	➔ Page/ Internet
1 Solenoid valve on individual sub-base	MN1H-..., NAS	Port pattern to ISO 5599-1, corresponding solenoid coils ➔ 72	61
2 Solenoid valve on individual sub-base	VSVA..., NAS	Port pattern to ISO 5599-1	
3 Silencer	U	For fitting in exhaust ports	u
4 Push-in fitting	QS	For connecting compressed air tubing with standard O.D.	qs
5 Plug socket with cable	KMC-...	Without LED	72
6 Plug socket with cable	KMC-...LED	With LED	
7 Plug socket	MSSD-C	For self-assembly	
8 Illuminating seal	M...-LD	For indicating the signal status	
9 Manual override	AHB	Tool for detenting manual override	
10 Connecting cable	NEBU	–	
11 Plug socket	SAE	For self-assembly	
12 Plug socket with cable	KM	–	

Variants

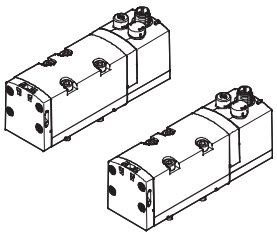
MN1H, JMN1H



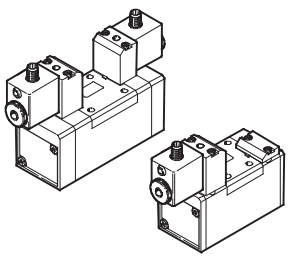
MFH, JMFH



VSVA



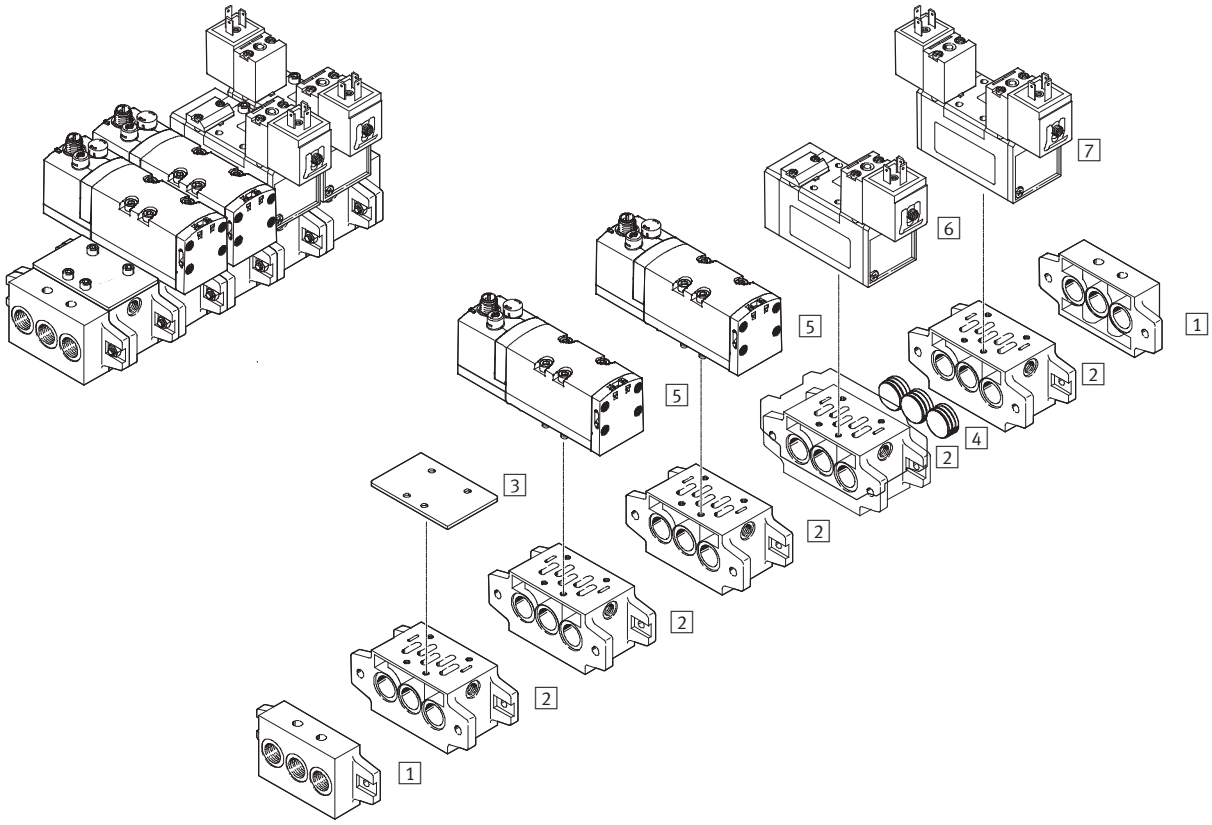
MDH, JMDH



Solenoid valves, to ISO 5599-1

System overview

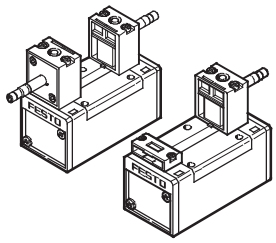
Manifold assembly without vertical stacking



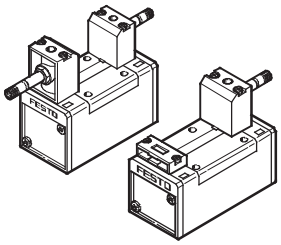
Component parts			
	Type	Brief description	➔ Page/ Internet
1 End plate kit	NEV	With ports for air supply 1 and exhausts 3 and 5	61
2 Manifold sub-base	NAV	With ports 2 and 4 underneath	
3 Blanking plate	NDV	For sealing unused manifold sub-bases	
4 Isolating disc	NSC	For sealing the common lines 1, 3, 5 between end plates and manifold sub-bases or between 2 manifold sub-bases, for example for different working pressures	
5 Solenoid valve	VSVA	Port pattern to ISO 5599-1, all functions	35
6 Solenoid valve	MN1H	Port pattern to ISO 5599-1, corresponding solenoid coils ➔ 72	19
7 Solenoid valve	JMN1H		

Variants

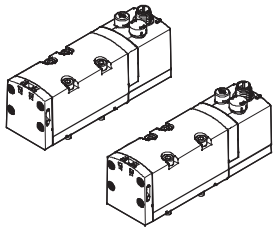
MN1H, JMN1H



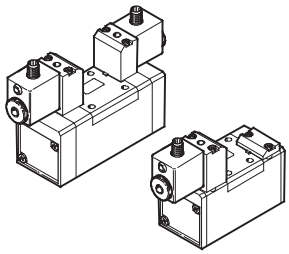
MFH, JMFH



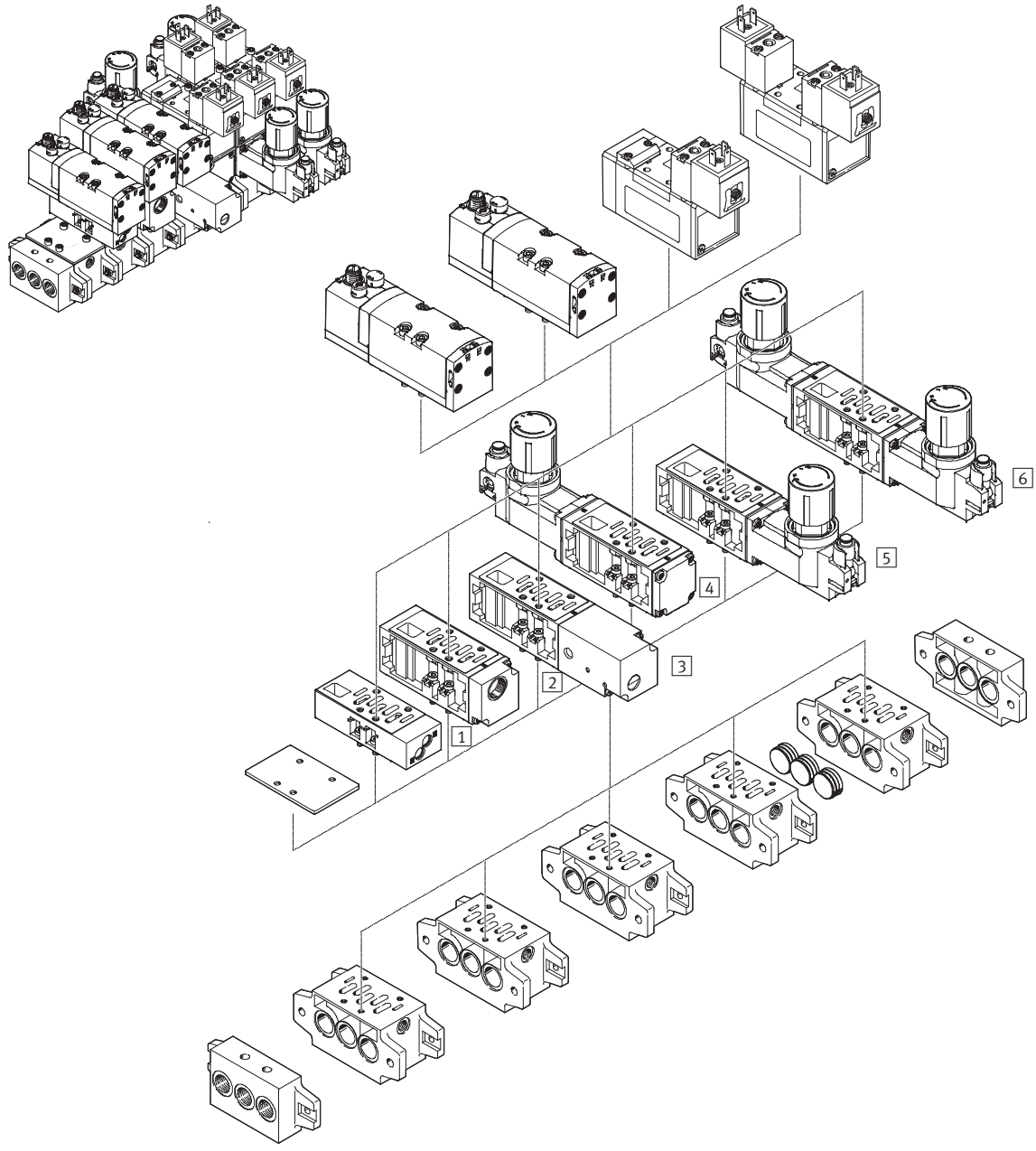
VSVA



MDH, JMDH



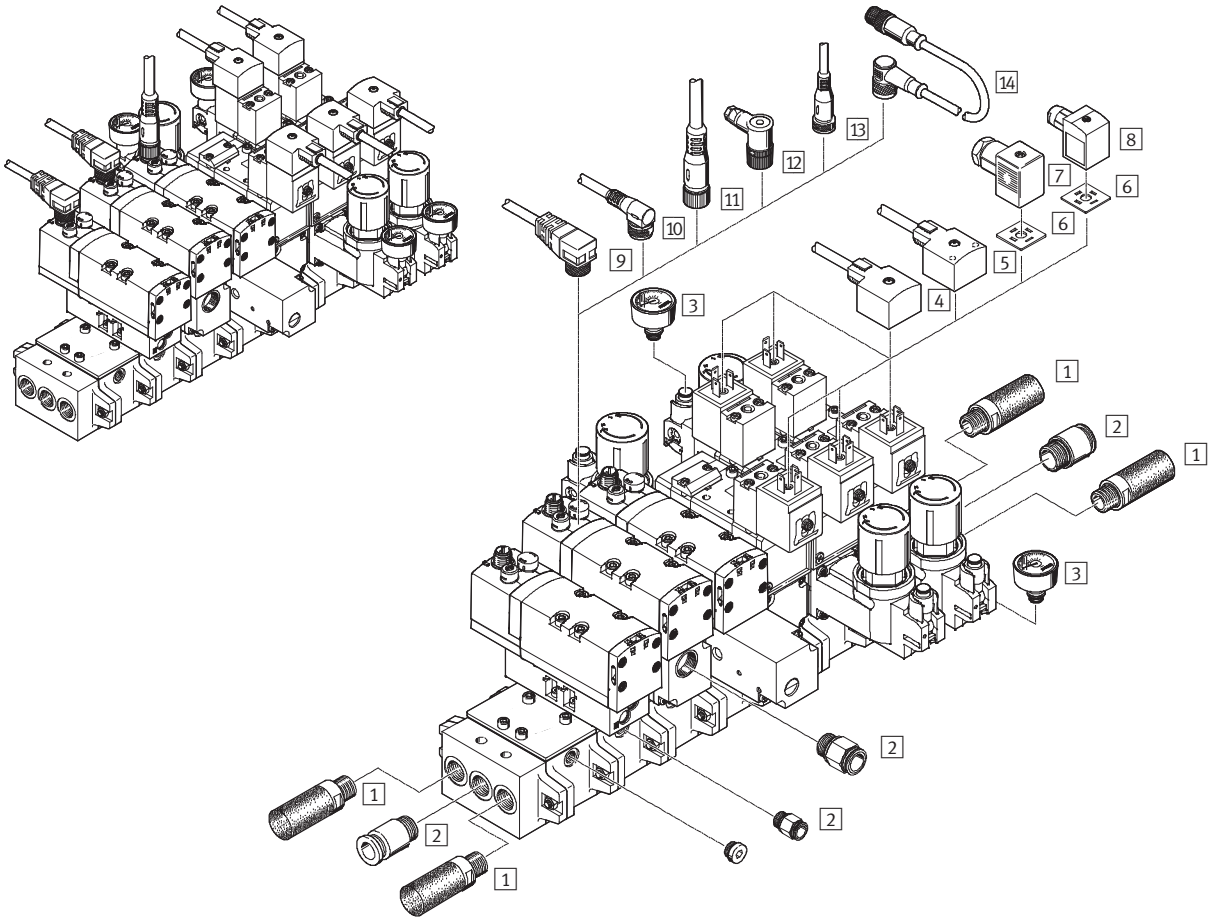
Manifold assembly with vertical stacking



Component parts

	Type	Brief description	➔ Page/ Internet
1 Flow control plate	VABF-S1-1-F1B1-C164	Controls the flow of exhaust air in 3 and 5	69
2 Vertical supply plate	VABF-S1-1-L1D1-C	Supplies the mounted valve with air	70
3 Vertical pressure shut-off plate	VABF-S1-1-P1A3-G38	Switch for shutting off the air supply 1 to the valve	71
4 Regulator plate P	VABF-S1-1-R1...	Regulates input 1	65
5 Regulator plate B	VABF-S1-1-R3...	Regulates output 2	
6 Regulator plate AB	VABF-S1-1-R4...	Regulates outputs 2 and 4 individually	

Accessories



Component parts

		Type	Brief description	➔ Page/ Internet
1	Silencer	U	For fitting in exhaust ports	u
2	Push-in fitting	QS	For connecting compressed air tubing with standard O.D.	qs
3	Pressure gauge	PAGN	With push-in connector	72
4	Plug socket with cable	KMC-...	Without LED	
5	Plug socket with cable	KMC-...LED	With LED	
6	Illuminating seal	M...-LD	For indicating the signal status	
7	Plug socket	MSSD-C-M16	With screw terminal connection	
8	Plug socket	MSSD-C-S-M16	With insulation displacement connection	
9	Plug socket with cable	NEBU	–	
10	Connecting cable	NEBU	–	
11	Plug socket with cable	NEBU	–	
12	Plug socket	SAE	For self-assembly	
13	Connecting cable	NEBU	–	
14	Plug socket with cable	KM-12-M12-GSWD-1-4	–	km

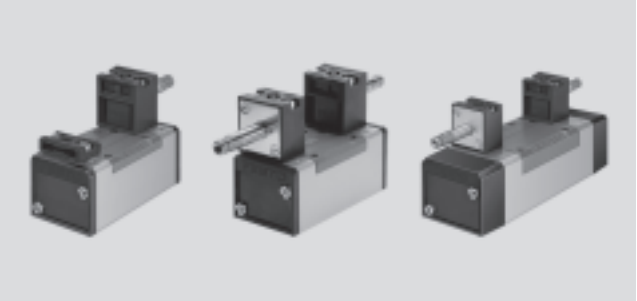
Solenoid valves MN1H, JMN1H, JMN1DH, to ISO 5599-1

Technical data – Width 42 mm

FESTO

Flow rate
1,200 l/min

Voltage
24 V DC
110, 230 V AC



General technical data							
Valve function			5/2-way		5/3-way		
Normal position			–	–	G[1]	B[2]	E[3]
Memory stability			Single solenoid	Double solenoid	Single solenoid		
Pneumatic spring reset method			Yes	–	No		
Mechanical spring reset method			Yes	–	Yes		
Design			Piston spool valve				
Sealing principle			Soft				
Actuation type			Electric				
Type of control			Piloted				
Pilot interface			To ISO 15218				
Pilot air supply			Internal or external				
Direction of flow			Reversible with external pilot air supply				
Exhaust function			Flow control				
Manual override			Non-detenting, detenting with tool				
Type of mounting			On sub-base				
Mounting position			Any				
Nominal size		[mm]	8				
Standard nominal flow rate		[l/min]	1,200				
Switching time on/off, pneumatic spring		[ms]	23/32	–	–		
Switching time on/off, mechanical spring		[ms]	17/39	–	20/44	20/46	
Changeover time		[ms]	–	18	–		
Switching time with dominant signal at 14 (12/14)		[ms]	–	18/15	–		
Width		[mm]	42				
Grid dimension		[mm]	43				
Connection on the sub-base	1, 2, 3, 4, 5		G¼				
	12, 14		M5				
Tightening torque for valve mounting		[Nm]					
Noise level		[dB (A)]	85				
Conforms to			ISO 5599-1 and ISO 15218 for pilot valve interface				
Certification			Germanischer Lloyd				
			c UL us Recognized (OL) (C series with internal pilot air supply only)				
Product weight		[g]	450	610	650		

1) G = Normally closed
2) B = Normally open
3) E = Normally exhausted

Solenoid valves MN1H, JMN1H, JMN1DH, to ISO 5599-1

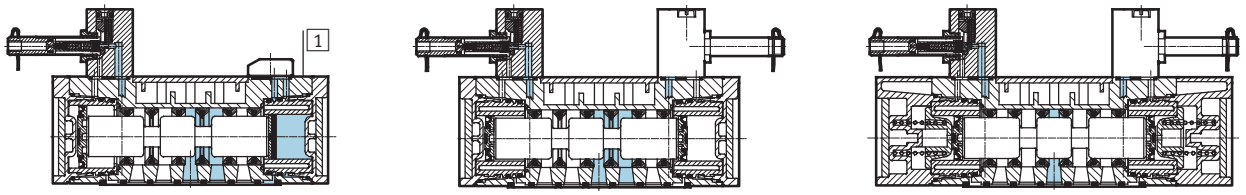
Technical data – Width 42 mm

Operating and environmental conditions				
Reset method			Pneumatic	Mechanical
Operating medium			Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated, vacuum	
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +16	–0.9 ... +16
Pilot pressure		[bar]	2 ... 10	3 ... 10
Ambient temperature		[°C]	–5 ... +50	
Temperature of medium		[°C]	–5 ... +50	

Electrical data – N1 solenoid coil			
Electrical connection			Plug, square design to EN 175301-803, type A
Operating voltage	DC voltage	[V DC]	24
	AC voltage	[V AC]	110/230 (50 ... 60 Hz)
Coil characteristics	DC voltage	[W]	2.5
	AC voltage	[VA]	Pull: 7.5 Hold: 5
Protection class to EN 60529			IP65

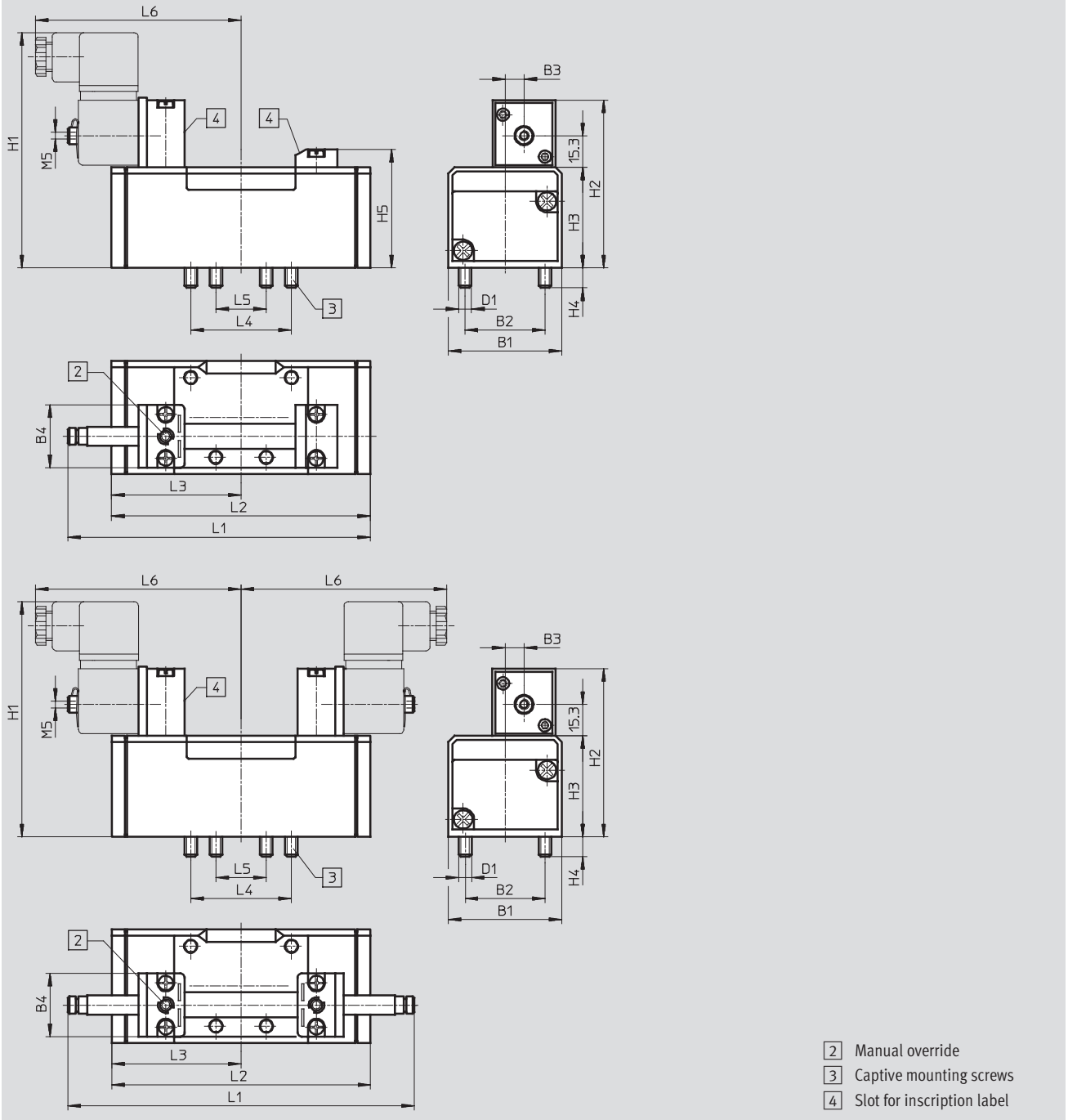
Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	NBR (nitrile rubber)
	Note on materials	RoHS-compliant

Dimensions Download CAD data ➔ **www.festo.com**

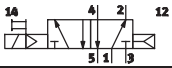
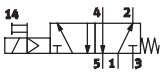
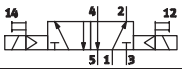
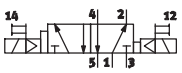
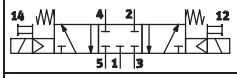
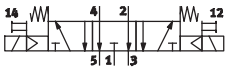
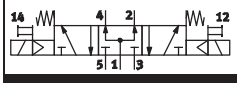


2 Manual override
3 Captive mounting screws
4 Slot for inscription label

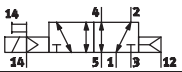
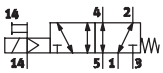
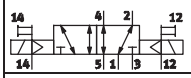
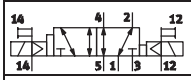
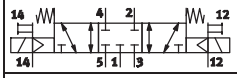
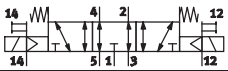
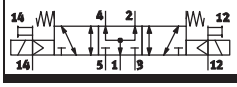
Type	B1	B2	B3	B4	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6
MN1H-5/2	42	28	6	30	M5	106	74	38	9	46.5	117.5	87.6	43.8	36	18	89
JMN1H-5/2											147.3	87.6				
MN1H-5/2-...-FR											128	98				
MN1H-5/3											147.3	108.4				

Solenoid valves MN1H, JMN1H, JMN1DH, to ISO 5599-1

Ordering data – Width 42 mm

Ordering data – Solenoid valves without solenoid coil[1], internal pilot air supply			
Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic reset method	**159688**	**MN1H-5/2-D-1-C**
	Mechanical reset method	**159687**	**MN1H-5/2-D-1-FR-C**
5/2-way valve, double solenoid			
	–	**159690**	**JMN1H-5/2-D-1-C**
	With dominant signal at 14	**159691**	**JMN1DH-5/2-D-1-C**
5/3-way valve, single solenoid			
	Normally closed	**159681**	**MN1H-5/3G-D-1-C**
	Normally exhausted	**159683**	**MN1H-5/3E-D-1-C**
	Normally open	**159685**	**MN1H-5/3B-D-1-C**

1) N1 solenoid coils ➔ 72

Ordering data – Solenoid valves without solenoid coil[1], external pilot air supply			
Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic reset method	**159686**	**MN1H-5/2-D-1-S-C**
	Mechanical reset method	**159716**	**MN1H-5/2-D-1-FR-S-C**
5/2-way valve, double solenoid			
	–	**159689**	**JMN1H-5/2-D-1-S-C**
	With dominant signal at 14	**159717**	**JMN1DH-5/2-D-1-S-C**
5/3-way valve, single solenoid			
	Normally closed	**159680**	**MN1H-5/3G-D-1-S-C**
	Normally exhausted	**159682**	**MN1H-5/3E-D-1-S-C**
	Normally open	**159684**	**MN1H-5/3B-D-1-S-C**

1) N1 solenoid coils ➔ 72

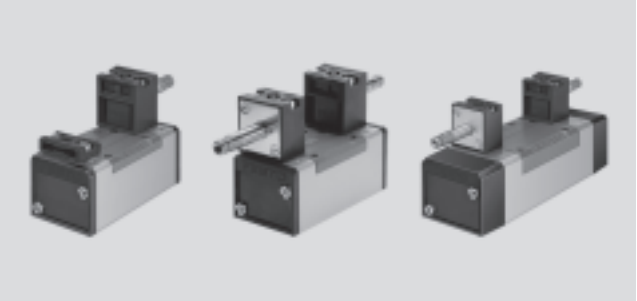
Solenoid valves MN1H, JMN1H, JMN1DH, to ISO 5599-1

Technical data – Width 52 mm

FESTO

- Flow rate
  2,300 l/min

- Voltage
  24 V DC
  110, 230 V AC



General technical data							
Valve function			5/2-way		5/3-way		
Normal position			–	–	G[1]	B[2]	E[3]
Memory stability			Single solenoid	Double solenoid	Single solenoid		
Pneumatic spring reset method			Yes	–	No		
Mechanical spring reset method			Yes	–	Yes		
Design			Piston spool valve				
Sealing principle			Soft				
Actuation type			Electric				
Type of control			Piloted				
Pilot interface			To ISO 15218				
Pilot air supply			Internal or external				
Direction of flow			Reversible with external pilot air supply				
Exhaust function			Flow control				
Manual override			Non-detenting, detenting with tool				
Type of mounting			On sub-base				
Mounting position			Any				
Nominal size		[mm]	11				
Standard nominal flow rate		[l/min]	2,300				
Switching time on/off, pneumatic spring		[ms]	46/69	–	–		
Switching time on/off, mechanical spring		[ms]	24/62	–	33/82	35/78	36/84
Changeover time		[ms]	–	21	–		
Switching time with dominant signal at 14 (12/14)		[ms]	–	24/21	–		
Width		[mm]	42				
Grid dimension		[mm]	56				
Connection on the sub-base	1, 2, 3, 4, 5		G3/8				
	12, 14		M5				
Tightening torque for valve mounting		[Nm]					
Noise level		[dB (A)]	85				
Conforms to			ISO 5599-1 and ISO 15218 for pilot valve interface				
Certification			Germanischer Lloyd				
			c UL us Recognized (OL) (C series with internal pilot air supply only)				
Product weight		[g]	710	880	940		

1) G = Normally closed
2) B = Normally open
3) E = Normally exhausted

Solenoid valves MN1H, JMN1H, JMN1DH, to ISO 5599-1

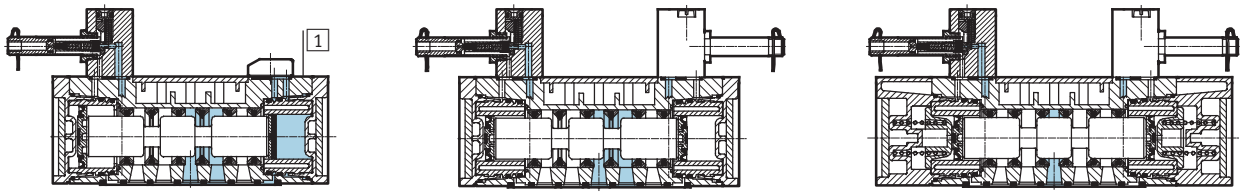
Technical data – Width 52 mm

Operating and environmental conditions				
Reset method			Pneumatic	Mechanical
Operating medium			Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated, vacuum	
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +16	–0.9 ... +16
Pilot pressure		[bar]	2 ... 10	3 ... 10
Ambient temperature		[°C]	–5 ... +50	
Temperature of medium		[°C]	–5 ... +50	

Electrical data – N1 solenoid coil			
Electrical connection			Plug, square design to EN 175301-803, type A
Operating voltage	DC voltage	[V DC]	24
	AC voltage	[V AC]	110/230 (50 ... 60 Hz)
Coil characteristics	DC voltage	[W]	2.5
	AC voltage	[VA]	Pull: 7.5 Hold: 5
Protection class to EN 60529			IP65

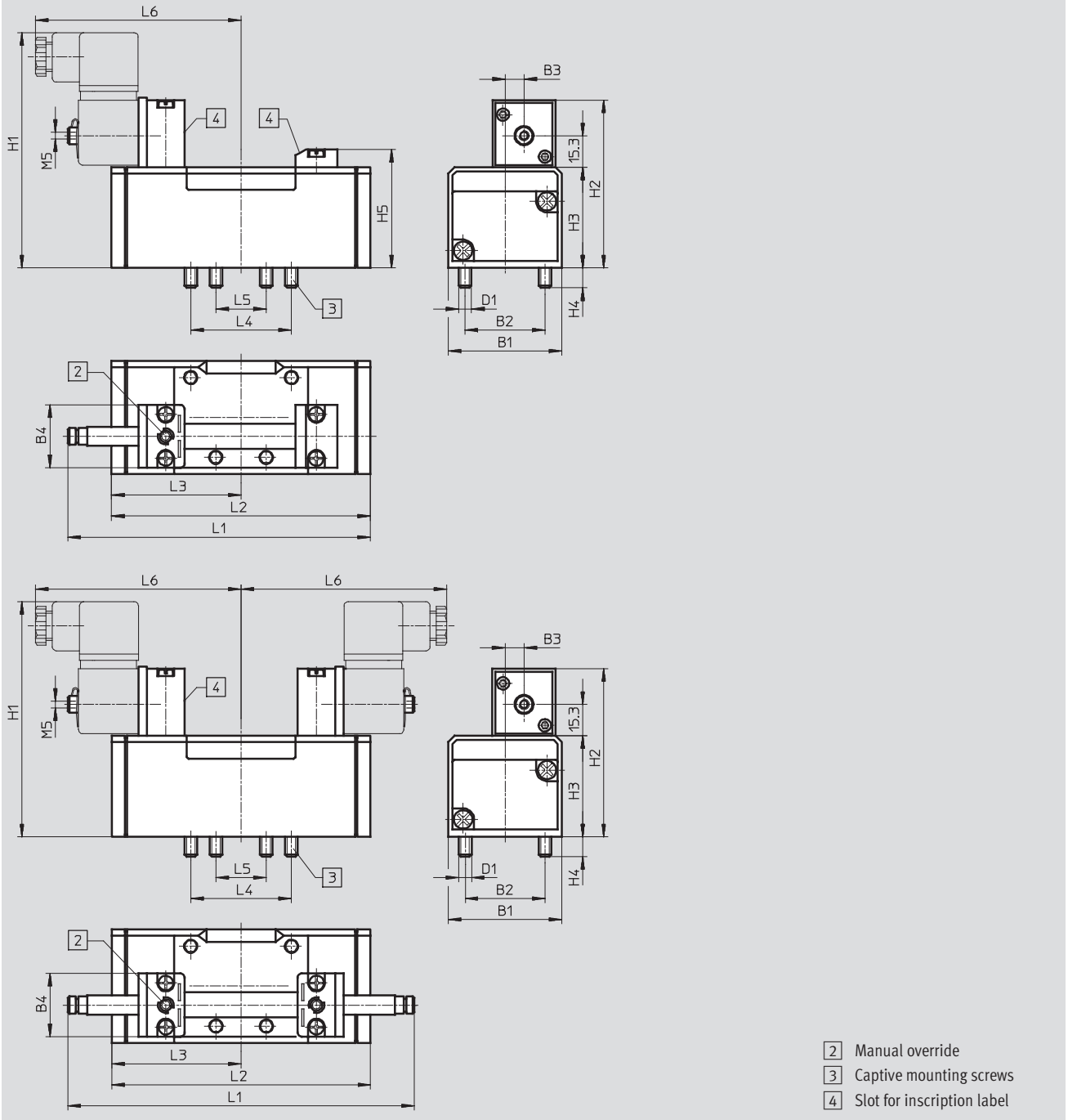
Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	NBR (nitrile rubber)
	Note on materials	RoHS-compliant

Dimensions Download CAD data ➔ **www.festo.com**

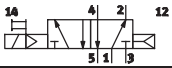
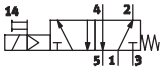
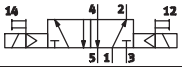
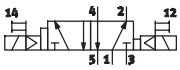
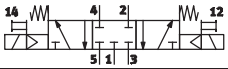
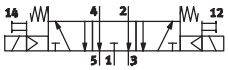
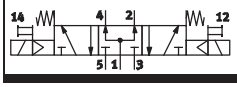


2 Manual override
3 Captive mounting screws
4 Slot for inscription label

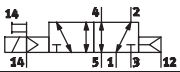
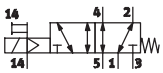
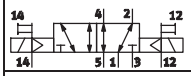
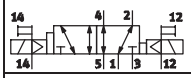
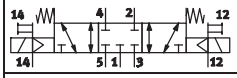
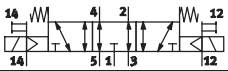
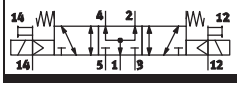
Type	B1	B2	B3	B4	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6
MN1H-5/2	54	38	9	30	M6	116	84	48	9.5	56.5	147.6	123.4	61.7	48	24	98
JMN1H-5/2											165	123.4	61.7			
MN1H-5/2-...-FR											161.5	140.7	61.7			
MN1H-5/3											165	158	79			

Solenoid valves MN1H, JMN1H, JMN1DH, to ISO 5599-1

Ordering data – Width 52 mm

Ordering data – Solenoid valves without solenoid coil[1], internal pilot air supply			
Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic reset method	**159700**	**MN1H-5/2-D-2-C**
	Mechanical reset method	**159699**	**MN1H-5/2-D-2-FR-C**
5/2-way valve, double solenoid			
	–	**159702**	**JMN1H-5/2-D-2-C**
	With dominant signal at 14	**159703**	**JMN1DH-5/2-D-2-C**
5/3-way valve, single solenoid			
	Normally closed	**159693**	**MN1H-5/3G-D-2-C**
	Normally exhausted	**159695**	**MN1H-5/3E-D-2-C**
	Normally open	**159697**	**MN1H-5/3B-D-2-C**

1) N1 solenoid coils ➔ 72

Ordering data – Solenoid valves without solenoid coil[1], external pilot air supply			
Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic reset method	**159698**	**MN1H-5/2-D-2-S-C**
	Mechanical reset method	**159718**	**MN1H-5/2-D-2-FR-S-C**
5/2-way valve, double solenoid			
	–	**159701**	**JMN1H-5/2-D-2-S-C**
	With dominant signal at 14	**159719**	**JMN1DH-5/2-D-2-S-C**
5/3-way valve, single solenoid			
	Normally closed	**159692**	**MN1H-5/3G-D-2-S-C**
	Normally exhausted	**159694**	**MN1H-5/3E-D-2-S-C**
	Normally open	**159696**	**MN1H-5/3B-D-2-S-C**

1) N1 solenoid coils ➔ 72

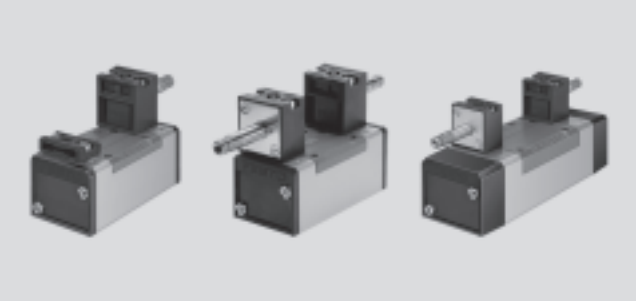
Solenoid valves MFH, JMFH, JMFDH, to ISO 5599-1

Technical data – Width 42 mm

FESTO

- Flow rate
  1,200 l/min

- Voltage
  12, 24, 42, 48 V DC
  24, 42, 48, 110, 230,
  240 V AC



General technical data							
Valve function			5/2-way		5/3-way		
Normal position			–	–	G[1]	B[2]	E[3]
Memory stability			Single solenoid	Double solenoid	Single solenoid		
Pneumatic spring reset method			Yes	–	No		
Mechanical spring reset method			Yes	–	Yes		
Design			Piston spool valve				
Sealing principle			Soft				
Actuation type			Electric				
Type of control			Piloted				
Pilot interface			To ISO 15218				
Pilot air supply			Internal or external				
Direction of flow			Reversible with external pilot air supply				
Exhaust function			Flow control				
Manual override			Non-detenting, detenting with tool				
Type of mounting			On sub-base				
Mounting position			Any				
Nominal size		[mm]	8				
Standard nominal flow rate		[l/min]	1,200				
Switching time on/off, pneumatic spring		[ms]	23/35	–	–		
Switching time on/off, mechanical spring		[ms]	16/45	–	18/35	18/36	
Changeover time		[ms]	–	16	–		
Changeover time (dominant)		[ms]	–	13	–		
Width		[mm]	42				
Grid dimension		[mm]	43				
Connection on the sub-base	1, 2, 3, 4, 5		G¼				
	12, 14		M5				
Noise level		[dB (A)]	85				
Conforms to			ISO 5599-1 and ISO 15218 for pilot valve interface				
Certification			Germanischer Lloyd				
Product weight		[g]	550	600	630		

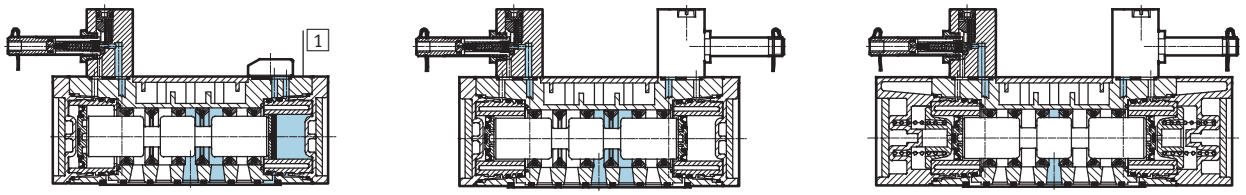
1) G = Normally closed
2) B = Normally open
3) E = Normally exhausted

Operating and environmental conditions				
Reset method			Pneumatic	Mechanical
Operating medium			Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated, vacuum	
Operating pressure	Internal pilot air supply	[bar]	2 … 10	3 … 10
	External pilot air supply	[bar]	–0.9 … +16	–0.9 … +16
Pilot pressure		[bar]	2 … 10	3 … 10
Ambient temperature		[°C]	–5 … +40	
Temperature of medium		[°C]	–10 … +60	

Electrical data – F solenoid coil			
Electrical connection			Plug vanes for plug sockets MSSD-F, KMF
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: 7.5 Hold: 6
Protection class to EN 60529			IP65

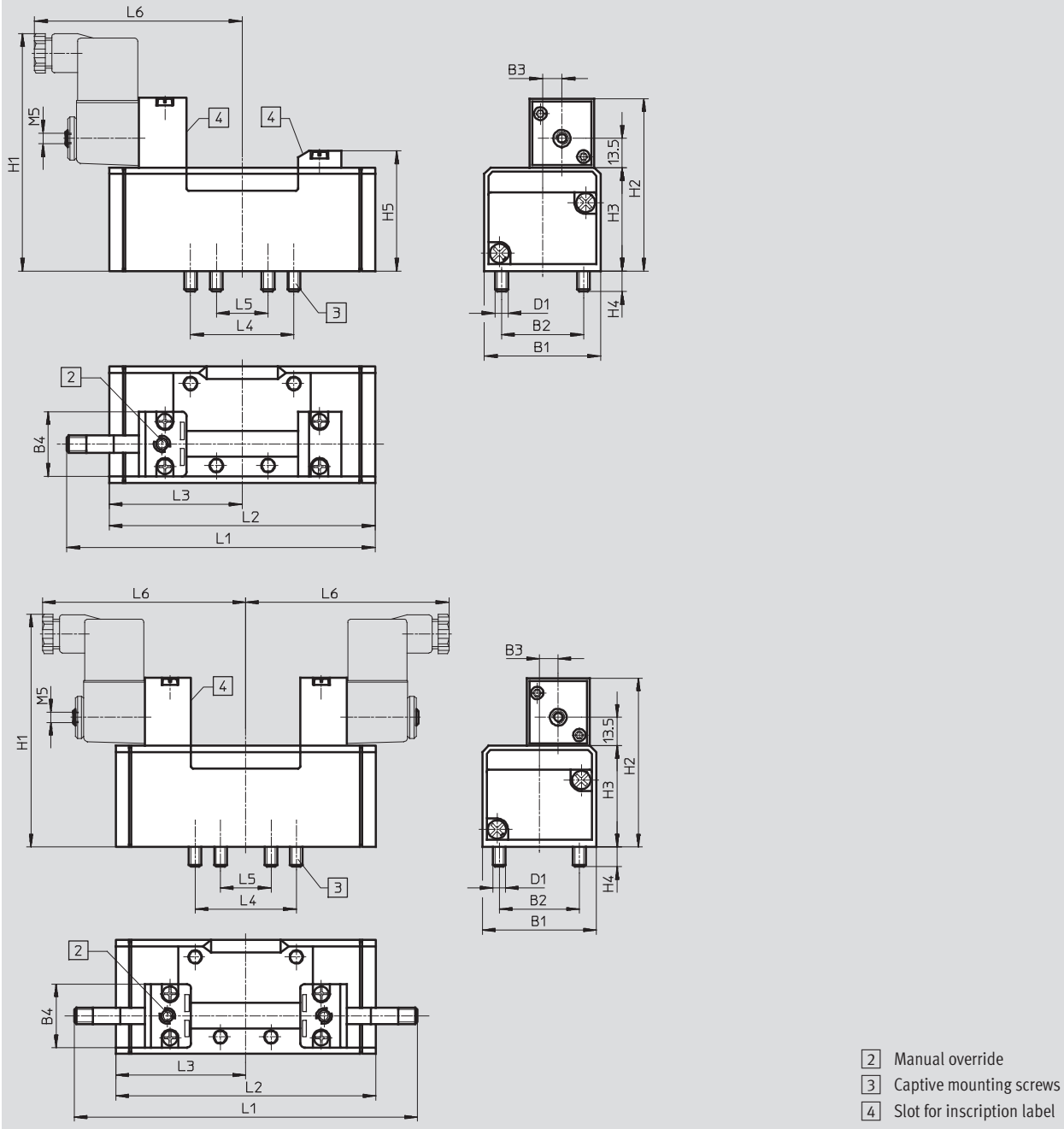
Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	NBR (nitrile rubber)
	Note on materials	RoHS-compliant

Dimensions Download CAD data ➔ **www.festo.com**

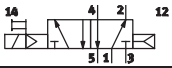
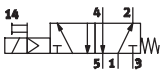
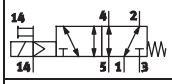
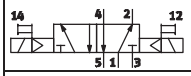
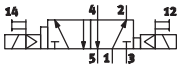
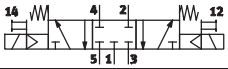
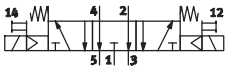
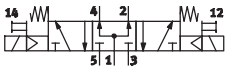


2 Manual override
3 Captive mounting screws
4 Slot for inscription label

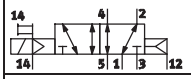
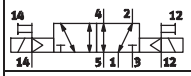
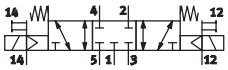
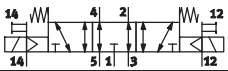
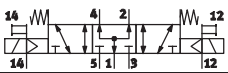
Type	B1	B2	B3	B4	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6
MFH-5/2-...	42	28	6	30	M5	100	70.3	38	9	46.5	115	87.6	43.8	36	18	89
JMFH-5/2-...										–	142.6	87.6	43.8			
MFH-5/2-...-FR										46.5	125.6	98	43.8			
MFH-5/3-...										–	142.6	108.4	54.2			

Solenoid valves MFH, JMFH, JMFDH, to ISO 5599-1

Ordering data – Width 42 mm

Ordering data – Solenoid valves without solenoid coil[1], internal pilot air supply			
Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic reset method	**150981**	**MFH-5/2-D-1-C**
	Mechanical reset method	**151016**	**MFH-5/2-D-1-FR-C**
	Mechanical reset method, reversible	**188510**	**MFH-5/2-D-1-FR-S-C**
5/2-way valve, double solenoid			
	–	**150980**	**JMFH-5/2-D-1-C**
	With dominant signal at 14	**151019**	**JMFDH-5/2-D-1-C**
5/3-way valve, single solenoid			
	Normally closed	**150982**	**MFH-5/3G-D-1-C**
	Normally exhausted	**150983**	**MFH-5/3E-D-1-C**
	Normally open	**150984**	**MFH-5/3B-D-1-C**

1) F solenoid coils ➔ 72

Ordering data – Solenoid valves without solenoid coil[1], external pilot air supply			
Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic reset method	**152562**	**MFH-5/2-D-1-S-C**
5/2-way valve, double solenoid			
	–	**152563**	**JMFH-5/2-D-1-S-C**
5/3-way valve, single solenoid			
	Normally closed	**152564**	**MFH-5/3G-D-1-S-C**
	Normally exhausted	**152565**	**MFH-5/3E-D-1-S-C**
	Normally open	**152566**	**MFH-5/3B-D-1-S-C**

1) F solenoid coils ➔ 72

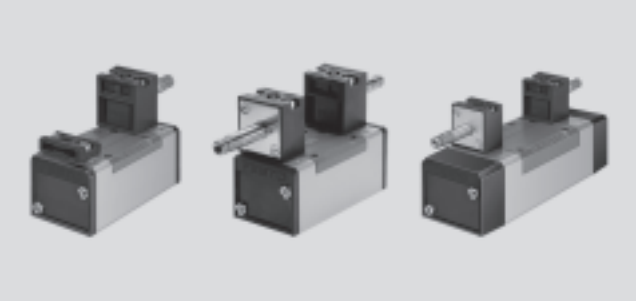
Solenoid valves MFH, JMFH, JMFDH, to ISO 5599-1

Technical data – Width 52 mm

FESTO

Flow rate
2,300 l/min

Voltage
12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC



General technical data							
Valve function			5/2-way		5/3-way		
Normal position			–	–	G[1]	B[2]	E[3]
Memory stability			Single solenoid	Double solenoid	Single solenoid		
Pneumatic spring reset method			Yes	–	No		
Mechanical spring reset method			Yes	–	Yes		
Design			Piston spool valve				
Sealing principle			Soft				
Actuation type			Electric				
Type of control			Piloted				
Pilot interface			To ISO 15218				
Pilot air supply			Internal or external				
Direction of flow			Reversible with external pilot air supply				
Exhaust function			Flow control				
Manual override			Non-detenting, detenting with tool				
Type of mounting			On sub-base				
Mounting position			Any				
Nominal size		[mm]	11				
Standard nominal flow rate		[l/min]	2,300				
Switching time on/off, pneumatic spring		[ms]	48/71	–	–		
Switching time on/off, mechanical spring		[ms]	27/73	–	33/63	35/69	35/67
Changeover time		[ms]	–	18	–		
Width		[mm]	52				
Grid dimension		[mm]	56				
Connection on the sub-base	1, 2, 3, 4, 5		G3/8				
	12, 14		M5				
Noise level		[dB (A)]	85				
Conforms to			ISO 5599-1 and ISO 15218 for pilot valve interface				
Certification			Germanischer Lloyd				
Product weight		[g]	650	750	820		

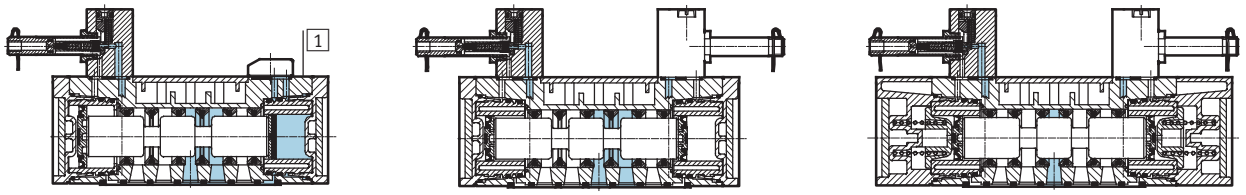
1) G = Normally closed
2) B = Normally open
3) E = Normally exhausted

Operating and environmental conditions				
Reset method			Pneumatic	Mechanical
Operating medium			Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated, vacuum	
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +16	–0.9 ... +16
Pilot pressure		[bar]	2 ... 10	3 ... 10
Ambient temperature		[°C]	–5 ... +40	
Temperature of medium		[°C]	–10 ... +60	

Electrical data – F solenoid coil			
Electrical connection			Plug vanes for plug sockets MSSD-F, KMF
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: 7.5 Hold: 6
Protection class to EN 60529			IP65

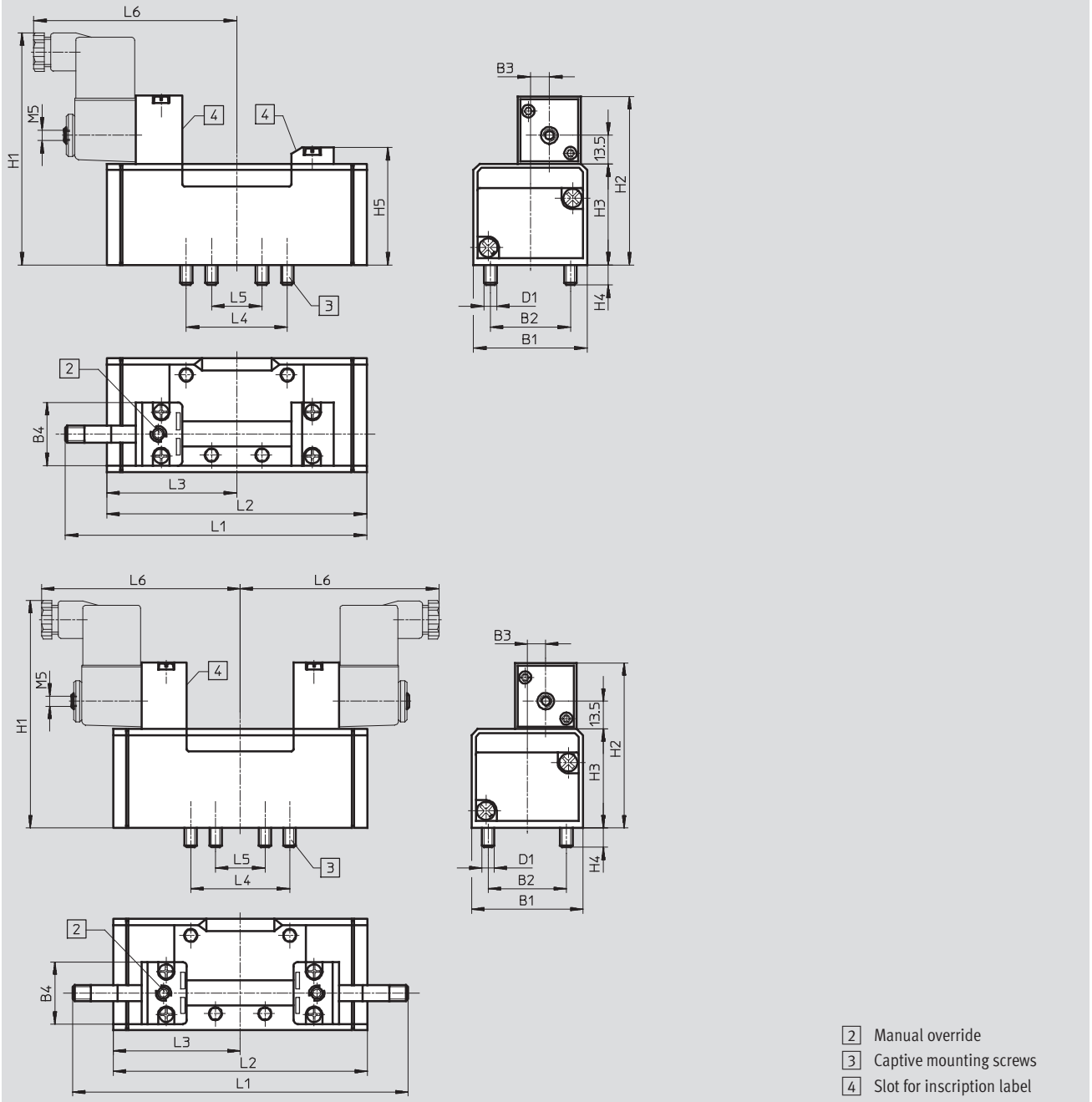
Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	NBR (nitrile rubber)
	Note on materials	RoHS-compliant

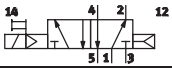
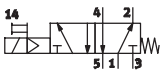
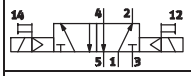
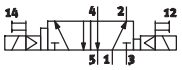
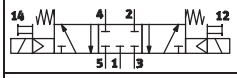
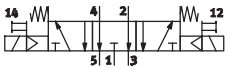
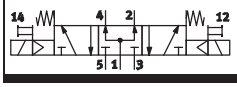
Dimensions Download CAD data ➔ **www.festo.com**



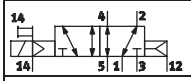
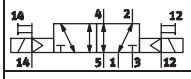
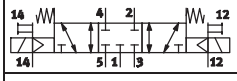
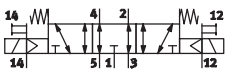
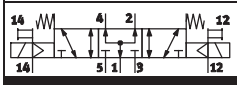
Type	B1	B2	B3	B4	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6
MFH-5/2	54	38	9	30	M6	110	80.3	48	9.5	56.5	142	123.4	61.7	48	24	98
MFH-5/2-...-FR										56.5	159.4	140.7	61.7			98
JMFH-5/2										–	160.4	123.4	61.7			97
MFH-5/3										–	160	158	79			98

Solenoid valves MFH, JMFH, JMFDH, to ISO 5599-1

Ordering data – Width 52 mm

Ordering data – Solenoid valves without solenoid coil[1], internal pilot air supply			
Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic reset method	**151851**	**MFH-5/2-D-2-C**
	Mechanical reset method	**151709**	**MFH-5/2-D-2-FR-C**
5/2-way valve, double solenoid			
	–	**151852**	**JMFH-5/2-D-2-C**
	With dominant signal at 14	**151853**	**JMFDH-5/2-D-2-C**
5/3-way valve, single solenoid			
	Normally closed	**151854**	**MFH-5/3G-D-2-C**
	Normally exhausted	**151855**	**MFH-5/3E-D-2-C**
	Normally open	**151856**	**MFH-5/3B-D-2-C**

1) F solenoid coils ➔ 72

Ordering data – Solenoid valves without solenoid coil[1], external pilot air supply			
Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic reset method	**151022**	**MFH-5/2-D-2-S-C**
5/2-way valve, double solenoid			
	–	**151023**	**JMFH-5/2-D-2-S-C**
5/3-way valve, single solenoid			
	Normally closed	**151024**	**MFH-5/3G-D-2-S-C**
	Normally exhausted	**151025**	**MFH-5/3E-D-2-S-C**
	Normally open	**151026**	**MFH-5/3B-D-2-S-C**

1) F solenoid coils ➔ 72

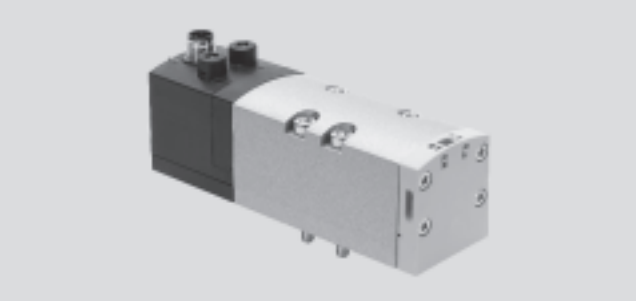
Solenoid valves VSVA, to ISO 5599-1/central plug M12x1

Technical data – Width 42 mm

FESTO

Flow rate
1,100 ... 1,300 l/min

Voltage
24 V DC



General technical data															
Valve function		2x 2/2-way	2x 3/2-way							5/2-way		5/3-way		
Normal position		C[1]	C[1]	U[2]	H[4]	C[1]	U[2]	H[4]		–	–	C[1]	U[2]	E[3]
Memory stability		Single solenoid	Single solenoid							Yes	Double solenoid	Single solenoid		
Pneumatic spring reset method		Yes	Yes							Yes	–	No		
Mechanical spring reset method		No	No							Yes	–	Yes		
Design		Piston spool valve												
Sealing principle		Soft												
Actuation type		Electric												
Type of control		Piloted												
Pilot air supply		Internal or external					External			Internal or external				
Direction of flow		Reversible with external pilot air supply	Non-reversible				Reversible only			Reversible with external pilot air supply				
Exhaust function		Flow control, external or via vertically stacked flow control plate												
Manual override		Non-detenting, detenting												
Type of mounting		On sub-base												
Mounting position		Any												
Nominal size	[mm]	11												
Flow rate of valve	[l/min]	1,600	1,600							2,000		1,900		
Flow rate of valve on individual sub-base	[l/min]	1,400	1,200							1,400		1,400		
Flow rate of pneumatically interlinked valve	[l/min]	1,300	1,100							1,300		1,400		
Standard nominal flow rate	[l/min]	1,300	1,100							1,300		1,300		
Switching time on/off, pneumatic spring	[ms]	20/38	20/38			34/28				27/45	–	–		
Switching time on/off, mechanical spring	[ms]	–	–			–				22/60	–	22/65		
Changeover time, dominant at 1st signal	[ms]	–	–			–				–	16	–		
Changeover time, dominant at 14	[ms]	–	–			–				–	19	–		
Non-overlapping		Yes												
Width	[mm]	42												
Grid dimension	[mm]	43												
Connection on the sub-base	1, 2, 3, 4, 5	G¼, end plates G⅜												
	12, 14	M5												
Pilot exhaust air	82/84	Either ducted (12) or unducted (standard)												
Product weight	[g]	442								426	439	456		
Conforms to		ISO 5599-1												

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

Solenoid valves VSVA, to ISO 5599-1/central plug M12x1

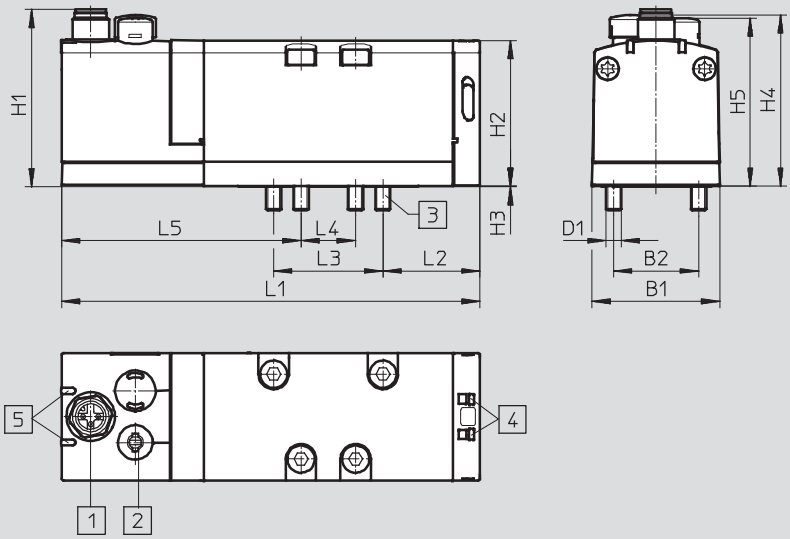
Technical data – Width 42 mm

Operating and environmental conditions							
Valve function			2x 2/2-way	2x 3/2-way	2x 3/2-way reversible	5/2-way	5/3-way
Operating medium			Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated, vacuum				
Operating pressure	Internal pilot air supply	[bar]	3 … 10				
	External pilot air supply	[bar]	3 … 10	3 … 10	–0.9 … 10	–0.9 … 10	
Pilot pressure[1)]		[bar]	3 … 10				
Ambient temperature		[°C]	–5 … +50				
Materials	Seals		FPM, NBR				
	Housing		Die-cast aluminium, PA				
	Screws		Galvanised steel				
	Note		RoHS-compliant				

1) Minimum pilot pressure 50% of operating pressure

Electrical data						
Valve function			2x 2/2-way	2x 3/2-way	5/2-way	5/3-way
Electrical connection to IEC 60 947-5-2			Central plug, round design M12x1, 3-pin			
Coil characteristics	Voltage	[V DC]	24±10% = 21.6 … 26.4			
	Power	[W]	1.3	1.3	1.6	1.6
Duty cycle		%	100			
Protection class to EN 60529			IP65 to EN 60529 and NEMA4 (in combination with a plug socket)			
Protective circuit and LED			Integrated in the valve			

Dimensions Download CAD data ➔ **www.festo.com**



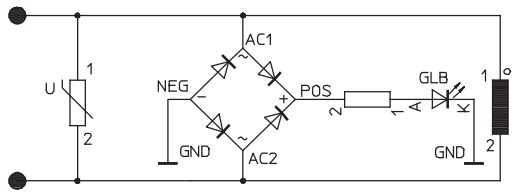
1 3-pin plug
2 Manual override
3 Captive screws M5x48
4 Slot for inscription label
5 LED

Type	B1	B2	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5
VSVA-B -…-D1-1R5L	42	28	M5	58.3	48	0.25	46.6	55.3	137.8	32	36	18	69.3

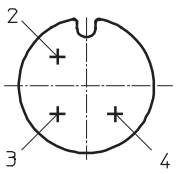
Protective circuit

Each VSVA solenoid coil is protected with a spark arresting protective circuit as well as against polarity reversal.

24 V DC version (width 42 mm)



M12x1 – Pin allocation on the valve

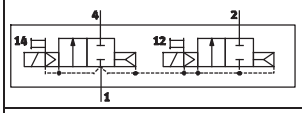
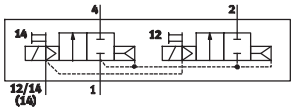
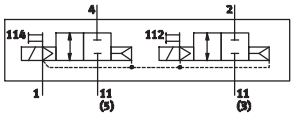
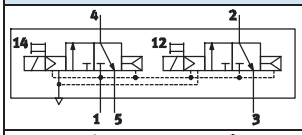
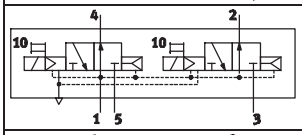
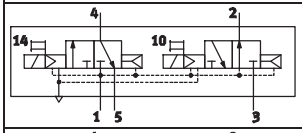
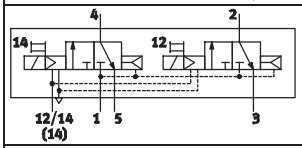
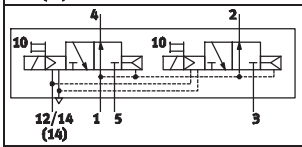
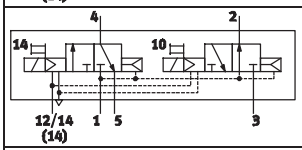
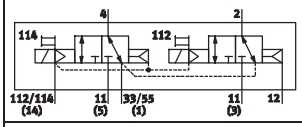
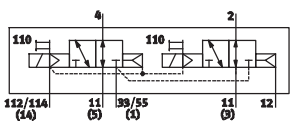
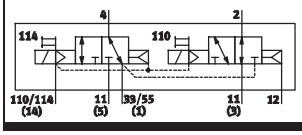


2	Signal (+) solenoid 12
3	com (–)
4	Signal (+) solenoid 14

Solenoid valves VSVA, to ISO 5599-1/central plug M12x1

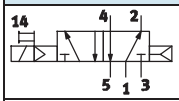
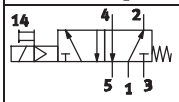
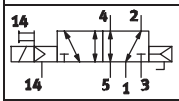
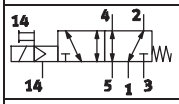
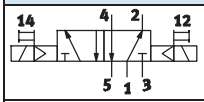
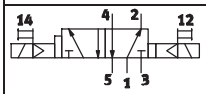
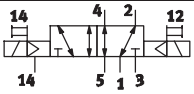
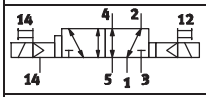
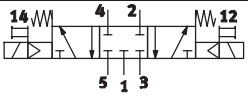
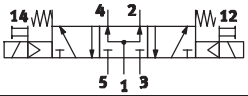
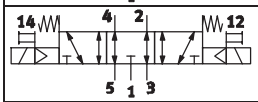
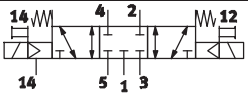
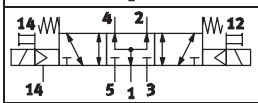
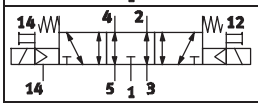
Ordering data – Width 42 mm

Ordering data

		Pilot air supply		Part No. Type
2x 2/2-way valve				
	Normally 2x closed	Internal	24 V DC	Order via online configurator ➔ Internet: vsva
	Normally 2x closed	External	24 V DC	
	Normally 2x closed Vacuum operation possible at 3 and 5	Internal	24 V DC	
2x 3/2-way valve				
	Normally 2x closed	Internal	24 V DC	**561359 VSVA-B-T32C-AD-D1-1R5L**
	Normally 2x open	Internal	24 V DC	**561360 VSVA-B-T32U-AD-D1-1R5L**
	Normally 1x closed, 1x open	Internal	24 V DC	**561361 VSVA-B-T32H-AD-D1-1R5L**
	Normally 2x closed	External	24 V DC	**561369 VSVA-B-T32C-AZD-D1-1R5L**
	Normally 2x open	External	24 V DC	**561370 VSVA-B-T32U-AZD-D1-1R5L**
	Normally 1x closed, 1x open	External	24 V DC	**561371 VSVA-B-T32H-AZD-D1-1R5L**
2x 3/2-way valve, reversible				
	Normally 2x closed	External	24 V DC	Order via online configurator ➔ Internet: vsva
	Normally 2x open	External	24 V DC	
	Normally 1x closed, 1x open	External	24 V DC	

Solenoid valves VSVA, to ISO 5599-1/central plug M12x1

Ordering data – Width 42 mm

Ordering data					
		Pilot air supply		Part No.	Type
5/2-way valve, single solenoid					
	Pneumatic reset method	Internal	24 V DC	**561362**	**VSVA-B-M52-AD-D1-1R5L**
	Mechanical spring reset method	Internal	24 V DC	**561363**	**VSVA-B-M52-MD-D1-1R5L**
	Pneumatic reset method	External	24 V DC	**561372**	**VSVA-B-M52-AZD-D1-1R5L**
	Mechanical spring reset method	External	24 V DC	**561373**	**VSVA-B-M52-MZD-D1-1R5L**
5/2-way valve, double solenoid					
	Dominant: 1st signal	Internal	24 V DC	**561364**	**VSVA-B-B52-D-D1-1R5L**
	Dominant: at 14	Internal	24 V DC	**561365**	**VSVA-B-D52-D-D1-1R5L**
	Dominant: 1st signal	External	24 V DC	**561374**	**VSVA-B-B52-ZD-D1-1R5L**
	Dominant: at 14	External	24 V DC	**561375**	**VSVA-B-D52-ZD-D1-1R5L**
5/3-way valve					
	Normally closed	Internal	24 V DC	**561366**	**VSVA-B-P53C-D-D1-1R5L**
	Normally open	Internal	24 V DC	**561368**	**VSVA-B-P53U-D-D1-1R5L**
	Normally exhausted	Internal	24 V DC	**561367**	**VSVA-B-P53E-D-D1-1R5L**
	Normally closed	External	24 V DC	**561376**	**VSVA-B-P53C-ZD-D1-1R5L**
	Normally open	External	24 V DC	**561378**	**VSVA-B-P53U-ZD-D1-1R5L**
	Normally exhausted	External	24 V DC	**561377**	**VSVA-B-P53E-ZD-D1-1R5L**

New

Solenoid valves VSVA, to ISO 5599-1/central plug M12x1

Technical data – Width 52 mm

FESTO

Flow rate
2,200 ... 2,800 l/min

Voltage
24 V DC

General technical data														
Valve function		2x 2/2-way	2x 3/2-way					5/2-way		5/3-way				
Normal position		C[1]	C[1]	U[2]	H[4]	C[1]	U[2]	H[4]	–	–	C[1]	U[2]	E[3]	
Memory stability		Single solenoid	Single solenoid			Single solenoid			Single solenoid	Double solenoid	Single solenoid			
Pneumatic spring reset method		Yes	Yes			Yes			Yes	–	–			
Mechanical spring reset method		No	No			No			Yes	–	–			
Design		Piston spool valve												
Sealing principle		Soft												
Actuation type		Electric												
Type of control		Piloted												
Pilot air supply		Internal or external												
Direction of flow		Non-reversible	Non-reversible			Reversible only			Reversible		Reversible	Non-reversible	Reversible	
Exhaust function		Via individual sub-base, with flow control, external or via vertically stacked flow control plate												
Manual override		Non-detenting, detenting												
Type of mounting		On sub-base												
Mounting position		Any												
Nominal size	[mm]	15												
Flow rate of valve	[l/min]	4,000	3,000						4,000		3,600			
Flow rate of valve on individual sub-base	[l/min]	2,400	2,000						2,400		2,300			
Flow rate of pneumatically interlinked valve	[l/min]	2,800	2,200						2,800		2,700			
Standard nominal flow rate	[l/min]	2,800	2,200						2,800		2,700			
Switching time on/off, pneumatic spring	[ms]	14/35	20/35			30/30			40/45	–	–			
Switching time on/off, mechanical spring	[ms]	–	–			–			20/60	–	23/60			
Changeover time, dominant at 1st signal	[ms]	–	–			–			–	18	–			
Changeover time, dominant at 14	[ms]	–	–			–			–	18	–			
Non-overlapping		Yes												
Width	[mm]	52												
Grid dimension	[mm]	59												
Connection on the sub-base	1, 2, 3, 4, 5	G⅜, end plates G½												
	12, 14	G⅛												
Pilot exhaust air	82/84	Either ducted or unducted (standard)												
Product weight	[g]	740	740			740			702	732	780			
Conforms to		ISO 5599-1												

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

Solenoid valves VSVA, to ISO 5599-1/central plug M12x1

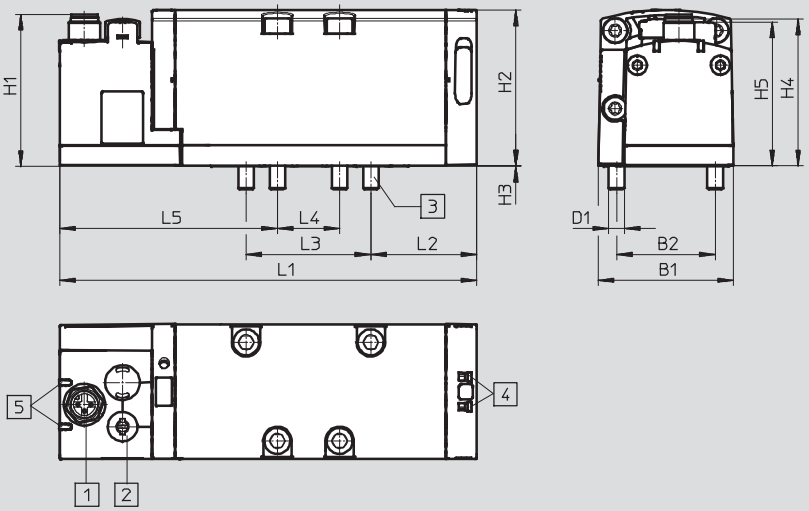
Technical data – Width 52 mm

Operating and environmental conditions							
Valve function			2x 2/2-way	2x 3/2-way	2x 3/2-way reversible	5/2-way	5/3-way
Operating medium			Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated, vacuum				
Operating pressure	Internal pilot air supply	[bar]	3 … 10				
	External pilot air supply	[bar]	3 … 10	3 … 10	–0.9 … 10	–0.9 … 10	
Pilot pressure[1]		[bar]	3 … 10				
Ambient temperature		[°C]	–5 … +50				
Materials	Seals		FPM, HNBR, NBR				
	Housing		Die-cast aluminium, PA				
	Screws		Galvanised steel				
	Note		RoHS-compliant				

1) Minimum pilot pressure 50% of operating pressure

Electrical data			
Electrical connection to IEC 60947-5-2			Central plug, round design M12x1, 3-pin
Coil characteristics	Voltage	[V DC]	24±10% = 21.6 … 26.4
	Power	[W]	4.6
Nominal pull current per solenoid coil		[mA]	165
Nominal current with current reduction		[mA]	35
Time until current reduction		[ms]	30
Duty cycle		%	100
Protection class to EN 60529			IP65 to EN 60529 and NEMA4 (in combination with a plug socket)
Protective circuit and LED			Integrated in the valve

Dimensions Download CAD data ➔ **www.festo.com**



1 3-pin plug
2 Manual override
3 Captive screws M6x60
4 Slot for inscription label
5 LED

Type	B1	B2	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5
VSVA-B -…-D2-1R5L	52	38	M6	58.3	60	0.3	56.4	55.3	160.7	40.9	48	24	64.3

Solenoid valves VSVA, to ISO 5599-1/central plug M12x1

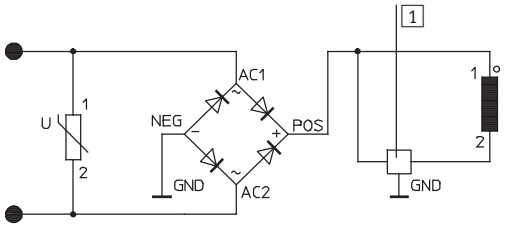
Technical data – Width 52 mm

FESTO

Protective circuit

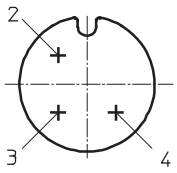
Each VSVA solenoid coil is protected with a spark arresting protective circuit as well as against polarity reversal.

24 V DC version (width 52 mm)



1 Holding current reduction

M12x1 – Pin allocation on valve

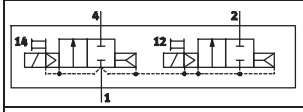
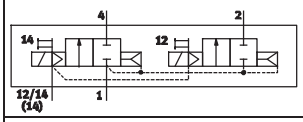
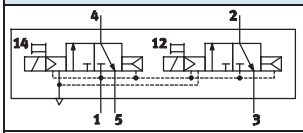
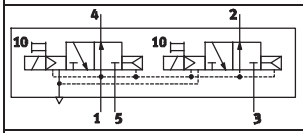
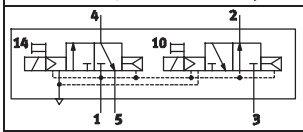
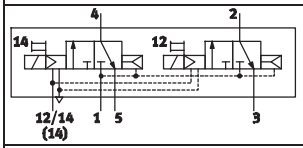
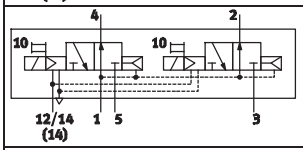
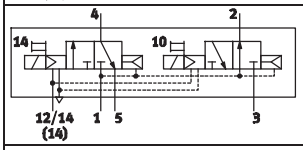
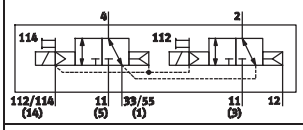
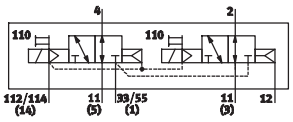
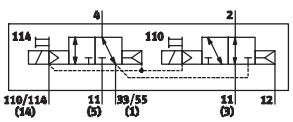


2 Signal (+) solenoid 12
3 com (–)
4 Signal (+) solenoid 14

Solenoid valves VSVA, to ISO 5599-1/central plug M12x1

Ordering data – Width 52 mm

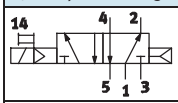
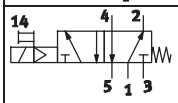
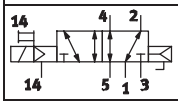
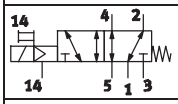
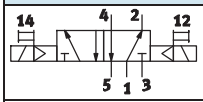
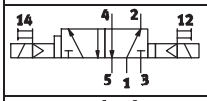
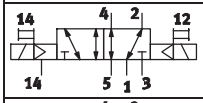
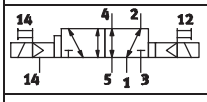
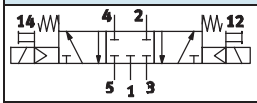
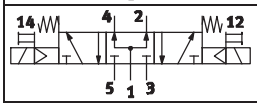
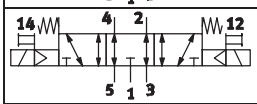
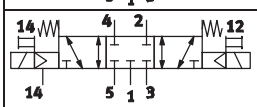
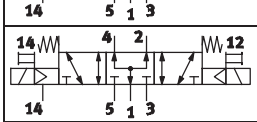
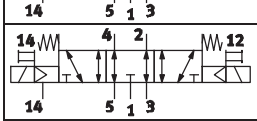
FESTO

Ordering data					
		Pilot air supply		Part No.	Type
2x 2/2-way valve					
	Normally 2x closed	Internal	24 V DC	Order via online configurator ➔ Internet: vsva	
	Normally 2x closed	External	24 V DC		
2x 3/2-way valve					
	Normally 2x closed	Internal	24 V DC	566990	VSVA-B-T32C-AD-D2-1R5L
	Normally 2x open	Internal	24 V DC	566991	VSVA-B-T32U-AD-D2-1R5L
	Normally 1x closed, 1x open	Internal	24 V DC	566992	VSVA-B-T32H-AD-D2-1R5L
	Normally 2x closed	External	24 V DC	567000	VSVA-B-T32C-AZD-D2-1R5L
	Normally 2x open	External	24 V DC	567001	VSVA-B-T32U-AZD-D2-1R5L
	Normally 1x closed, 1x open	External	24 V DC	567002	VSVA-B-T32H-AZD-D2-1R5L
2x 3/2-way valve, reversible					
	Normally 2x closed	External	24 V DC	Order via online configurator ➔ Internet: vsva	
	Normally 2x open	External	24 V DC		
	Normally 1x closed, 1x open	External	24 V DC		

Solenoid valves VSVA, to ISO 5599-1/central plug M12x1

Ordering data – Width 52 mm

FESTO

Ordering data					
		Pilot air supply		Part No.	Type
5/2-way valve, single solenoid					
	Pneumatic reset method	Internal	24 V DC	**566993**	**VSVA-B-M52-AD-D2-1R5L**
	Mechanical spring reset method	Internal	24 V DC	**566994**	**VSVA-B-M52-MD-D2-1R5L**
	Pneumatic reset method	External	24 V DC	**567003**	**VSVA-B-M52-AZD-D2-1R5L**
	Mechanical spring reset method	External	24 V DC	**567004**	**VSVA-B-M52-MZD-D2-1R5L**
5/2-way valve, double solenoid					
	Dominant: 1st signal	Internal	24 V DC	**566995**	**VSVA-B-B52-D-D2-1R5L**
	Dominant: at 14	Internal	24 V DC	**566996**	**VSVA-B-D52-D-D2-1R5L**
	Dominant: 1st signal	External	24 V DC	**567005**	**VSVA-B-B52-ZD-D2-1R5L**
	Dominant: at 14	External	24 V DC	**567006**	**VSVA-B-D52-ZD-D2-1R5L**
5/3-way valve					
	Normally closed	Internal	24 V DC	**566997**	**VSVA-B-P53C-D-D2-1R5L**
	Normally open	Internal	24 V DC	**566999**	**VSVA-B-P53U-D-D2-1R5L**
	Normally exhausted	Internal	24 V DC	**566998**	**VSVA-B-P53E-D-D2-1R5L**
	Normally closed	External	24 V DC	**567007**	**VSVA-B-P53C-ZD-D2-1R5L**
	Normally open	External	24 V DC	**567009**	**VSVA-B-P53U-ZD-D2-1R5L**
	Normally exhausted	External	24 V DC	**567008**	**VSVA-B-P53E-ZD-D2-1R5L**

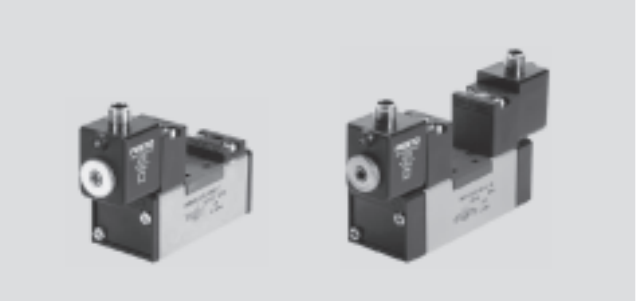
Solenoid valves MDH, JMDH, JMDDH, to ISO 5599-1

Technical data – Width 42 mm

FESTO

Flow rate
1,200 l/min

Voltage
24 V DC



General technical data							
Valve function			5/2-way		5/3-way		
Normal position			–	–	G[1]	B[2]	E[3]
Memory stability			Single solenoid	Double solenoid	Single solenoid		
Pneumatic spring reset method			Yes	–	No		
Mechanical spring reset method			Yes	–	Yes		
Design			Piston spool valve				
Sealing principle			Soft				
Actuation type			Electric				
Type of control			Piloted				
Pilot interface			To ISO 15218				
Pilot air supply			Internal or external				
Direction of flow			Reversible with external pilot air supply				
Exhaust function			Flow control				
Manual override			Non-detenting				
Type of mounting			On sub-base				
Mounting position			Any				
Nominal size		[mm]	8				
Standard nominal flow rate		[l/min]	1,200				
Switching time on/off, pneumatic spring		[ms]	25/36	–	–		
Switching time on/off, mechanical spring		[ms]	20/42	–	25/55		
Changeover time		[ms]	–	18	–		
Switching time with dominant signal at 14 (12/14)		[ms]	–	18	–		
Width		[mm]	42				
Grid dimension		[mm]	43				
Connection on the sub-base	1, 2, 3, 4, 5		G¼, end plates G⅜				
	12, 14		M5				
Conforms to			ISO 5599-1 and ISO 15218 for pilot valve interface				
Product weight		[g]	420	550	580		

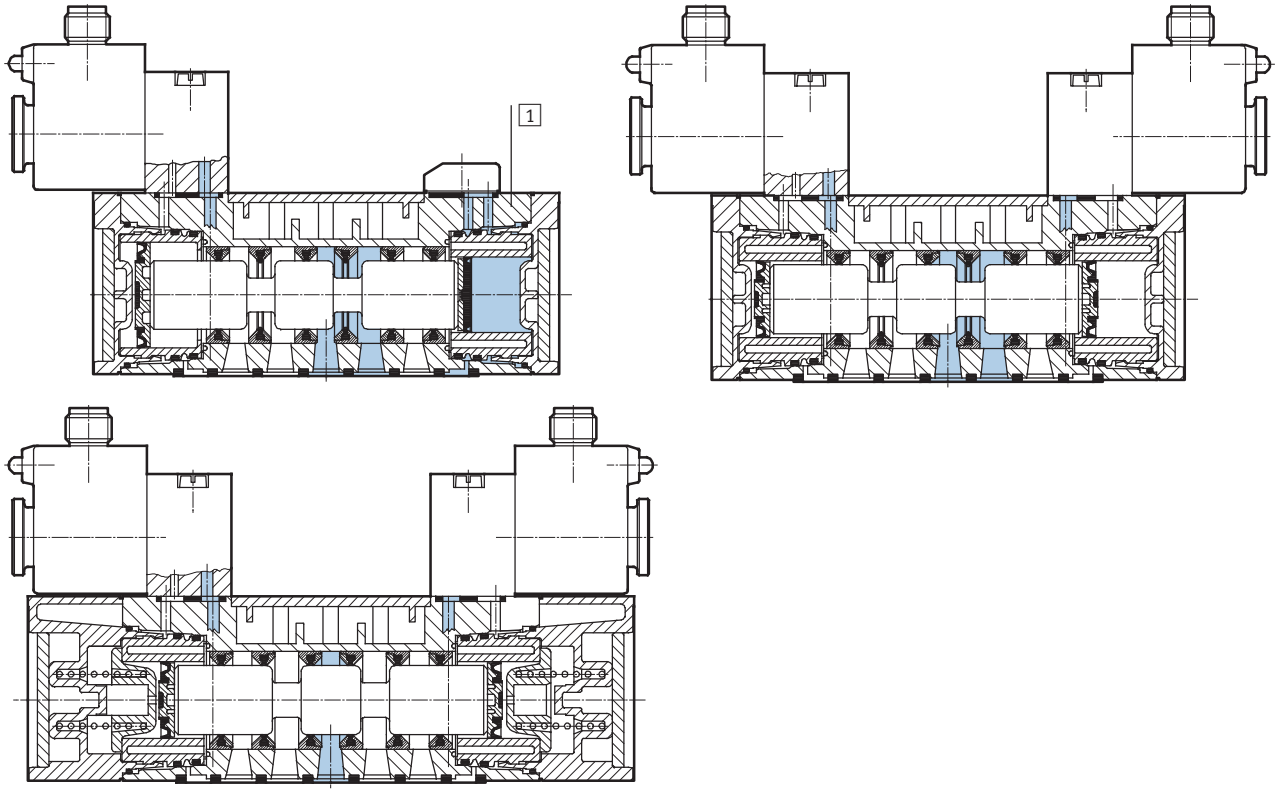
1) G = Normally closed
2) B = Normally open
3) E = Normally exhausted

Operating and environmental conditions				
Reset method			Pneumatic spring	Mechanical spring
Operating medium			Dried compressed air, lubricated or unlubricated, grade of filtration 40 µm, vacuum	
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +16	
Pilot pressure		[bar]	2 ... 10	3 ... 10
Ambient temperature		[°C]	–10 ... +50	
Temperature of medium		[°C]	–10 ... +50	

Electrical data			
D solenoid coil with round plug M12x1			
Electrical connection	Design		M12X1
Coil characteristics	DC voltage	[V DC]	21.6 ... 26.4
	Power	[W]	2.7
Duty cycle		[%]	100
Protection class to EN 60529			IP65

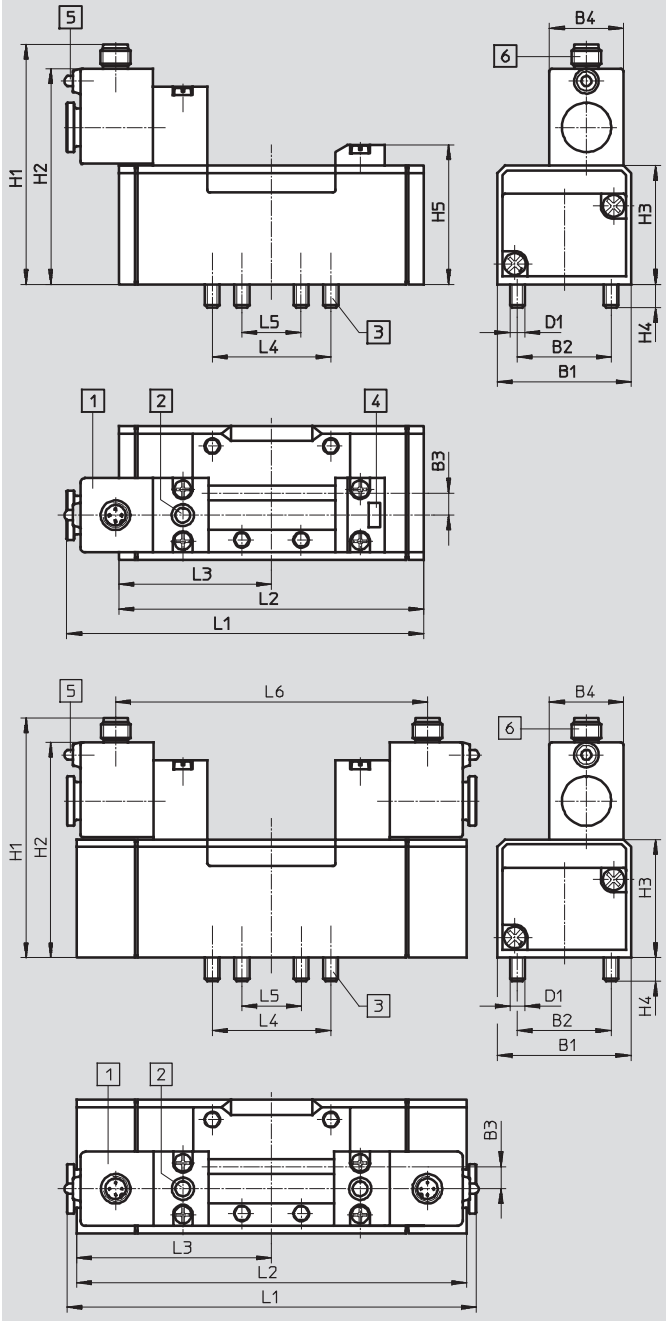
Materials

Sectional view



1	Housing	Die-cast aluminium, polyacetal
–	Seals	Nitrile rubber

Dimensions Download CAD data ➔ **www.festo.com**



1 Solenoid coil can be repositioned by 90° regardless of manual override
2 Manual override
3 Captive mounting screws
4 Slot for inscription label
5 LED display
6 Device plug M12x1
Coil, 2-pin to VDMA
Coil, 4-pin to Desina

Type	B1	B2	B3	B4	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6
MDH-5/2	42	28	6	30	M5	87.2	77.2	38	9	46.5	121.8	87.6	43.8	36	18	–
MDH-5/2-...-FR										46.5	132.2	98	43.8			–
JMDH-5/2										–	148	87.6	43.8			108.5
MDH-5/3										–	148	108.4	54.3			108.5

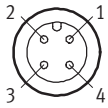
Solenoid valves MDH, JMDH, JMDDH, to ISO 5599-1

Ordering data – Width 42 mm

FESTO

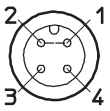
Pin allocation

M12 plug – 2-pin to VDMA



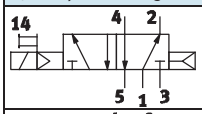
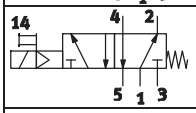
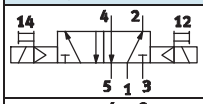
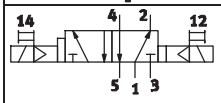
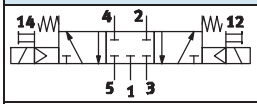
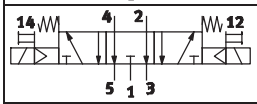
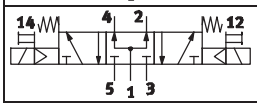
1	Unused
2	Unused
3	com (–)
4	Signal (+)

M12 plug – 4-pin to Desina

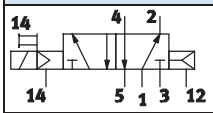
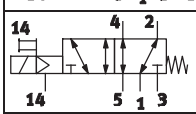


1	Connected with 2
2	Connected with 1
3	com (–)
4	Signal (+)

Ordering data – Solenoid valves, internal pilot air supply

Circuit symbol	Description	Coil	Part No.	Type
5/2-way valve, single solenoid				
	Pneumatic spring	2-pin to VDMA	**197125**	**MDH-5/2-D-1-M12-C**
		4-pin to Desina	**540803**	**MDH-5/2-D-1-M12D-C**
	Mechanical reset method	2-pin to VDMA	**533010**	**MDH-5/2-D-1-FR-M12-C**
		4-pin to Desina	**540804**	**MDH-5/2-D-1-FR-M12D-C**
5/2-way valve, double solenoid				
	–	2-pin to VDMA	**532687**	**JMDH-5/2-D-1-M12-C**
		4-pin to Desina	**540809**	**JMDH-5/2-D-1-M12D-C**
	Dominant: signal at 14	2-pin to VDMA	**539079**	**JMDDH-5/2-D-1-M12-C**
		4-pin to Desina	**540808**	**JMDDH-5/2-D-1-M12D-C**
5/3-way valve, single solenoid				
	Normally closed	2-pin to VDMA	**525307**	**MDH-5/3G-D-1-M12-C**
		4-pin to Desina	**540806**	**MDH-5/3G-D-1-M12D-C**
	Normally exhausted	2-pin to VDMA	**197126**	**MDH-5/3E-D-1-M12-C**
		4-pin to Desina	**540805**	**MDH-5/3E-D-1-M12D-C**
	Normally open	2-pin to VDMA	**533005**	**MDH-5/3B-D-1-M12-C**
		4-pin to Desina	**540807**	**MDH-5/3B-D-1-M12D-C**

Ordering data – Solenoid valves, external pilot air supply

Circuit symbol	Description	Coil	Part No.	Type
5/2-way valve, single solenoid				
	Pneumatic reset method	2-pin to VDMA	**533332**	**MDH-5/2-D-1-S-M12-C**
		4-pin to Desina	**540810**	**MDH-5/2-D-1-S-M12D-C**
	Mechanical reset method	2-pin to VDMA	**533761**	**MDH-5/2-D-1S-FR-M12-C**
		4-pin to Desina	**540811**	**MDH-5/2-D-1S-FR-M12D-C**

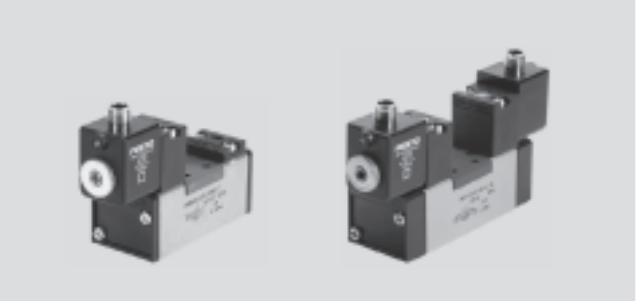
Solenoid valves MDH, JMDH, JMDDH, to ISO 5599-1

Technical data – Width 52 mm

FESTO

Flow rate
2,300 l/min

Voltage
24 V DC



General technical data							
Valve function			5/2-way		5/3-way		
Normal position			–	–	G[1]	B[2]	E[3]
Memory stability			Single solenoid	Double solenoid	Single solenoid		
Pneumatic spring reset method			Yes	–	No		
Mechanical spring reset method			Yes	–	Yes		
Design			Piston spool valve				
Sealing principle			Soft				
Actuation type			Electric				
Type of control			Piloted				
Pilot interface			To ISO 15218				
Pilot air supply			Internal				
Direction of flow			Non-reversible				
Exhaust function			Flow control				
Manual override			Non-detenting				
Type of mounting			On sub-base				
Mounting position			Any				
Nominal size		[mm]	11				
Standard nominal flow rate		[l/min]	2,300				
Switching time on/off, pneumatic spring		[ms]	45/60	–	–		
Switching time on/off, mechanical spring		[ms]	25/60	–	35/70		
Changeover time		[ms]	–	22	–		
Switching time with dominant signal at 14 (12/14)		[ms]	–	22	–		
Width		[mm]	52				
Grid dimension		[mm]	56				
Connection on the sub-base	1, 2, 3, 4, 5		G3/8				
	12, 14		M5				
Conforms to			ISO 5599-1 and ISO 15218 for pilot valve interface				
Product weight		[g]	810	810	880		

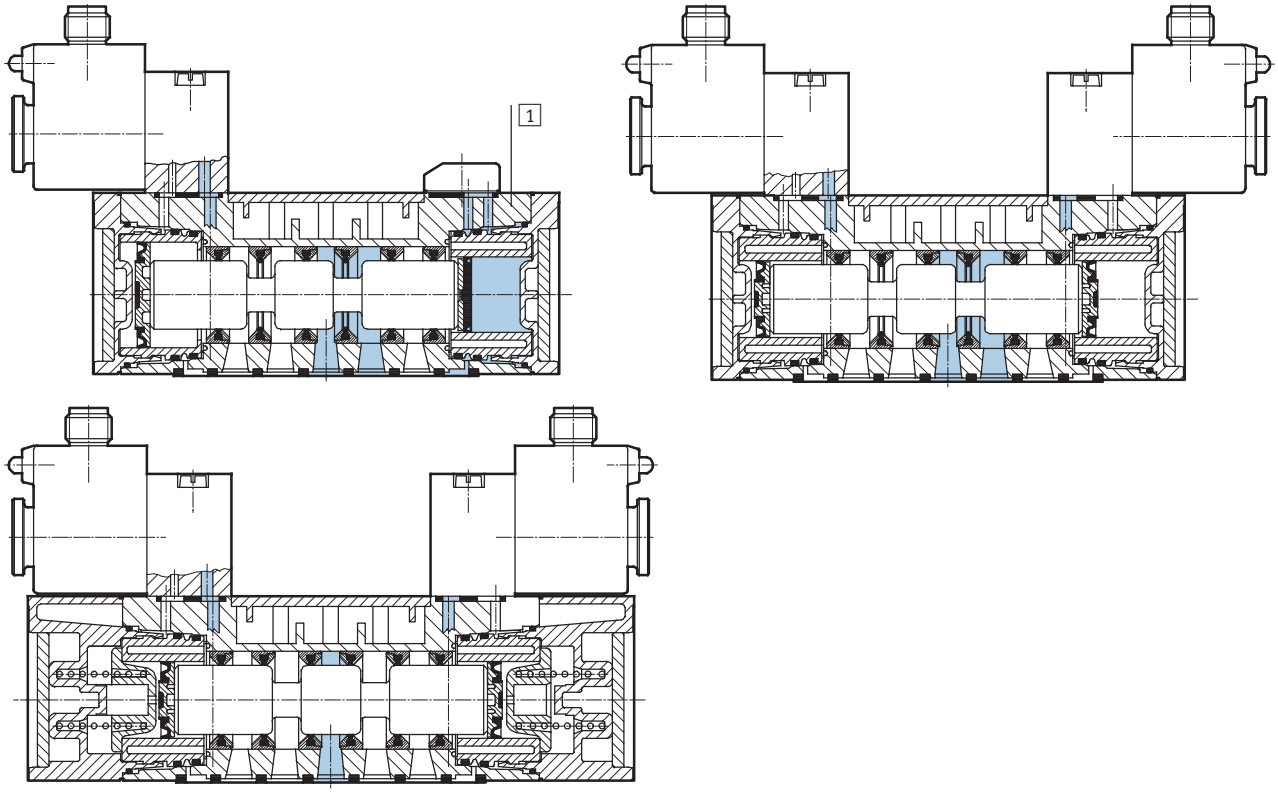
1) G = Normally closed
2) B = Normally open
3) E = Normally exhausted

Operating and environmental conditions				
Reset method			Pneumatic spring	Mechanical spring
Operating medium			Dried compressed air, lubricated or unlubricated, grade of filtration 40 µm, vacuum	
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +16	
Pilot pressure		[bar]	2 ... 10	3 ... 10
Ambient temperature		[°C]	–10 ... +50	
Temperature of medium		[°C]	–10 ... +50	

Electrical data – D solenoid coil with round plug M12x1			
Electrical connection	Design		M12x1
Coil characteristics	DC voltage	[V DC]	21.6...26.4
	Power	[W]	2.7
Duty cycle		[%]	100
Protection class to EN 60529			IP65

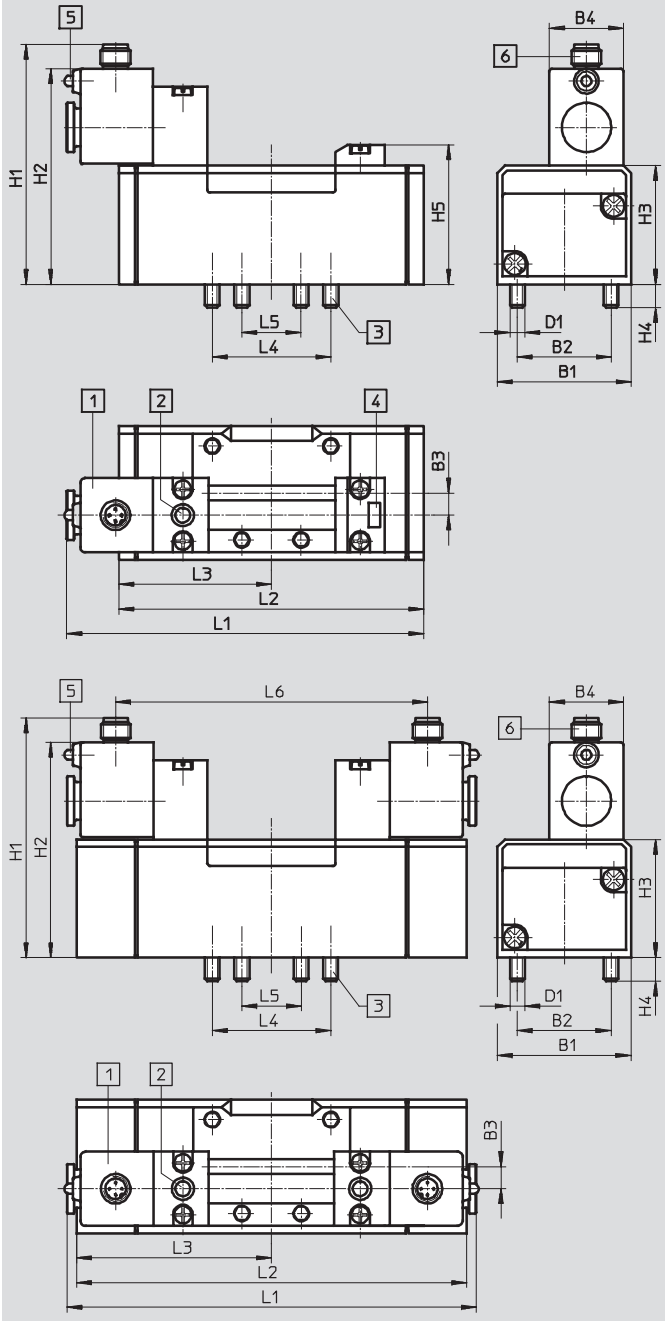
Materials

Sectional view



1	Housing	Die-cast aluminium, polyacetal
–	Seals	Nitrile rubber

Dimensions Download CAD data ➔ **www.festo.com**



1 Solenoid coil can be repositioned by 90° regardless of manual override
2 Manual override
3 Captive mounting screws
4 Slot for inscription label
5 LED display
6 Device plug M12x1
Coil, 2-pin to VDMA
Coil, 4-pin to Desina

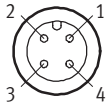
Type	B1	B2	B3	B4	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6
MDH-5/2	54	38	9	30	M6	97.2	87.2	48	9.5	56.5	144.6	123.4	61.7	48	24	–
MDH-5/2-...-FR										56.5	161.9	140.6	61.7			–
JMDH-5/2										–	165.8	123.4	61.7			126.3
MDH-5/3										–	165.8	158	79			126.3

Solenoid valves MDH, JMDH, JMDDH, to ISO 5599-1

Ordering data – Width 52 mm

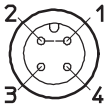
Pin allocation

M12 plug – 2-pin to VDMA



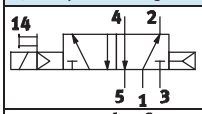
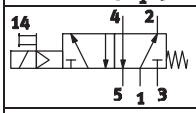
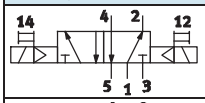
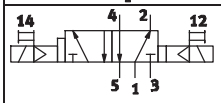
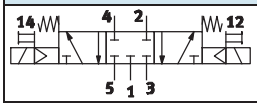
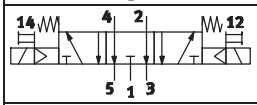
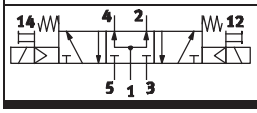
1	Unused
2	Unused
3	com (–)
4	Signal (+)

M12 plug – 4-pin to Desina



1	Connected with 2
2	Connected with 1
3	com (–)
4	Signal (+)

Ordering data

Circuit symbol	Description	Coil	Part No.	Type
5/2-way valve, single solenoid				
	Pneumatic reset method	2-pin to VDMA	**533008**	**MDH-5/2-D-2-M12-C**
		4-pin to Desina	**540812**	**MDH-5/2-D-2-M12D-C**
	Mechanical reset method	2-pin to VDMA	**533011**	**MDH-5/2-D-2-FR-M12-C**
		4-pin to Desina	**540813**	**MDH-5/2-D-2-FR-M12D-C**
5/2-way valve, double solenoid				
	–	2-pin to VDMA	**533013**	**JMDH-5/2-D-2-M12-C**
		4-pin to Desina	**540818**	**JMDH-5/2-D-2-M12D-C**
	With dominant signal at 14	2-pin to VDMA	**539077**	**JMDDH-5/2-D-2-M12-C**
		4-pin to Desina	**540817**	**JMDDH-5/2-D-2-M12D-C**
5/3-way valve, single solenoid				
	Normally closed	2-pin to VDMA	**539078**	**MDH-5/3G-D-2-M12-C**
		4-pin to Desina	**540815**	**MDH-5/3G-D-2-M12D-C**
	Normally exhausted	2-pin to VDMA	**533016**	**MDH-5/3E-D-2-M12-C**
		4-pin to Desina	**540814**	**MDH-5/3E-D-2-M12D-C**
	Normally open	2-pin to VDMA	**533006**	**MDH-5/3B-D-2-M12-C**
		4-pin to Desina	**540816**	**MDH-5/3B-D-2-M12D-C**

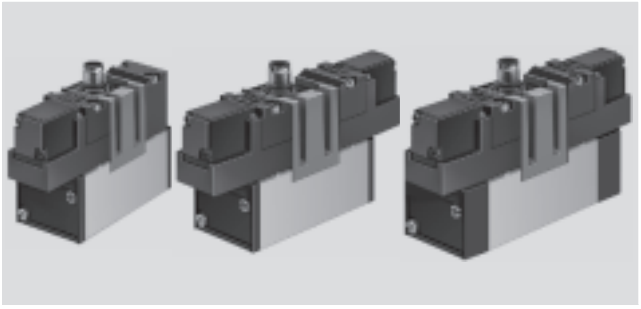
Solenoid valves MEBH, JMEBH, to ISO 5599-1

Technical data – Width 42 mm

FESTO

- Flow rate
  1,200 l/min

- Voltage
  24 V DC



General technical data							
Valve function			5/2-way		5/3-way		
Normal position			–	–	G[1]	B[2]	E[3]
Memory stability			Single solenoid	Double solenoid	Single solenoid		
Pneumatic spring reset method			Yes	–	No		
Mechanical spring reset method			Yes	–	Yes		
Design			Piston spool valve				
Sealing principle			Soft				
Actuation type			Electric				
Type of control			Piloted				
Pilot air supply			Internal				
Direction of flow			Non-reversible				
Exhaust function			Flow control				
Manual override			Detenting via accessory				
Type of mounting			Via through-hole				
Mounting position			Any				
Nominal size		[mm]	8				
Standard nominal flow rate		[l/min]	1,200				
Switching time on/off, pneumatic spring		[ms]	20/33	–	–		
Switching time on/off, mechanical spring		[ms]	15/50	–	19/68		
Changeover time		[ms]	–	12	–		
Switching time with dominant signal at 14 (12/14)		[ms]	–	13	–		
Width		[mm]	42				
Grid dimension		[mm]	43				
Connection on the sub-base	1, 2, 3, 4, 5		G¼				
	12, 14		M5				
Product weight		[g]	550	600	630		

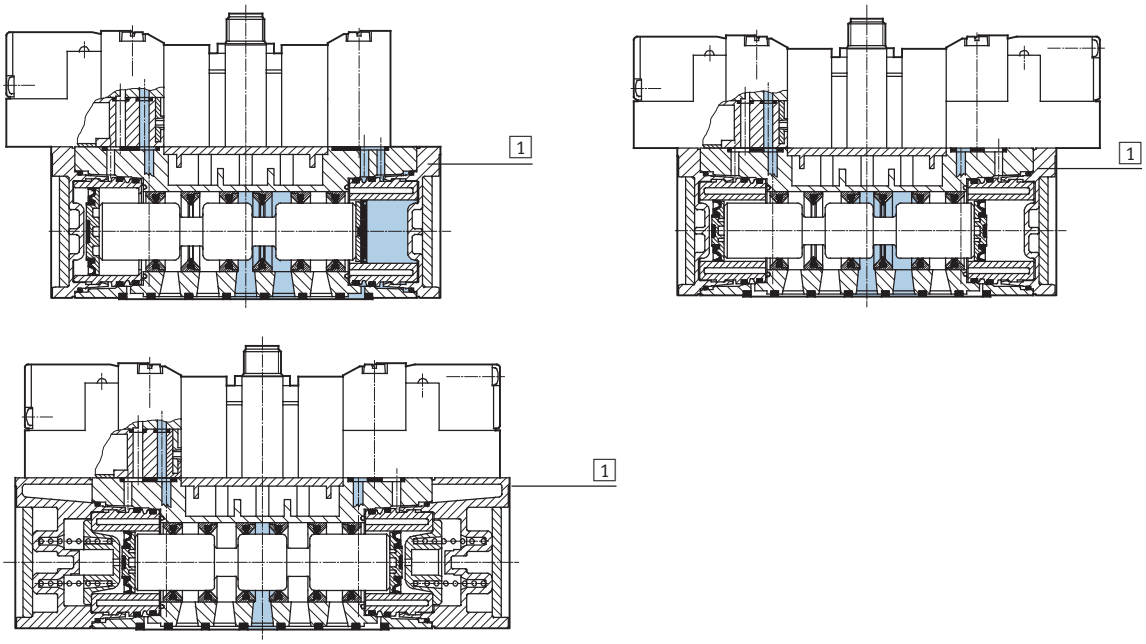
1) G = Normally closed
2) B = Normally open
3) E = Normally exhausted

Operating and environmental conditions				
Reset method			Pneumatic spring	Mechanical spring
Operating medium			Dried compressed air, lubricated or unlubricated, grade of filtration 40 µm, vacuum	
Operating pressure	Internal pilot air supply	[bar]	2 … 10	3 … 10
	External pilot air supply	[bar]	–0.9 … +16	
Pilot pressure		[bar]	2 … 10	3 … 10
Ambient temperature		[°C]	–5 … +50	
Temperature of medium		[°C]	–5 … +50	

Electrical data – EB solenoid coil with round plug M12x1			
Electrical connection	Design		M12x1
Coil characteristics	DC voltage	[V DC]	24
	Power	[W]	2.5
Duty cycle		[%]	100
Protection class to EN 60529			IP65

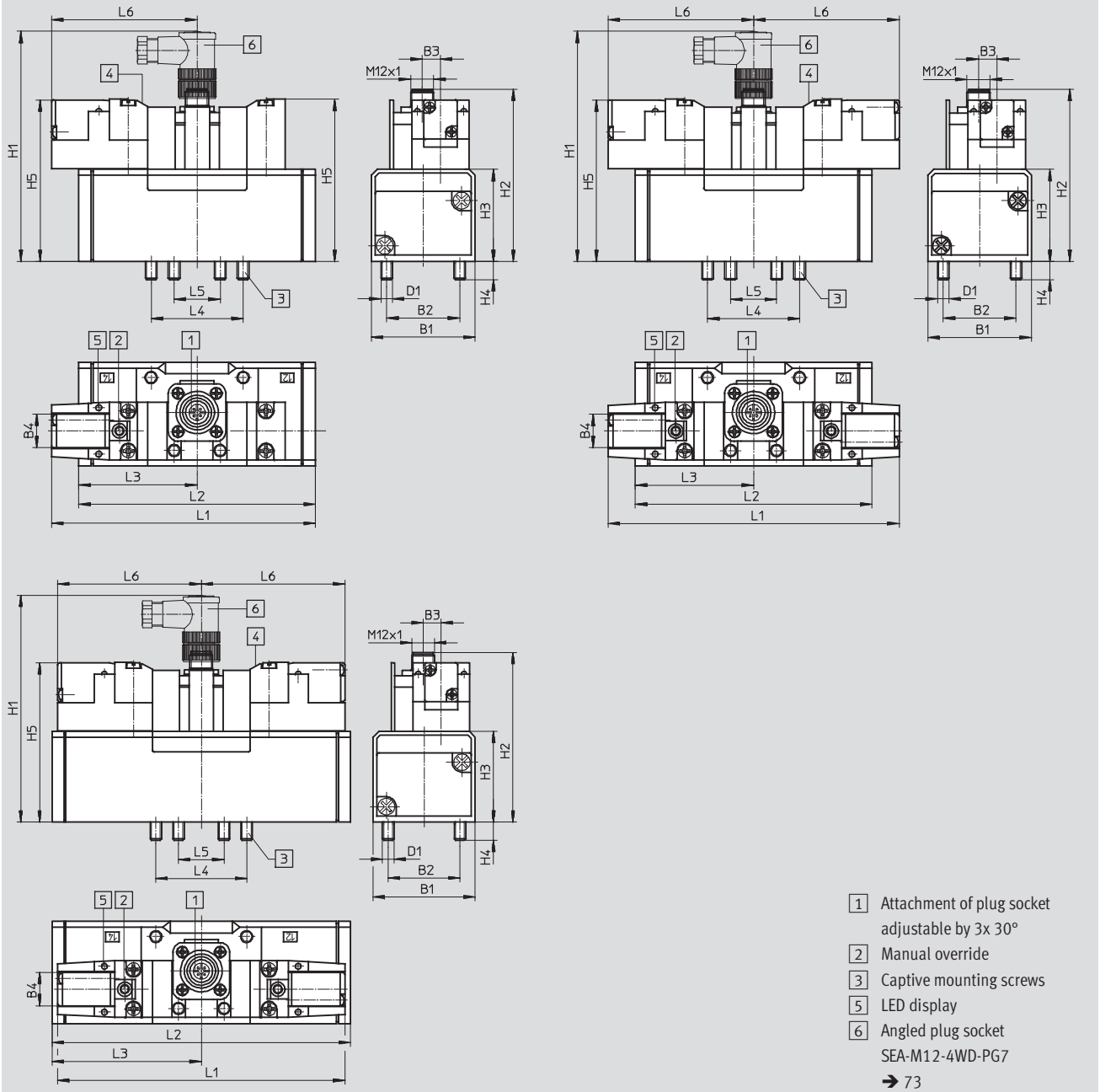
Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Dimensions Download CAD data ➔ **www.festo.com**



1 Attachment of plug socket adjustable by 3x 30°
2 Manual override
3 Captive mounting screws
5 LED display
6 Angled plug socket SEA-M12-4WD-PG7
➔ 73

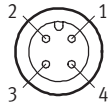
Type	B1	B2	B3	B4	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6
MEBH-5/2	42	28	6	17.5	M5	110	80.3	38	9	74.7	110.8	87.6	43.8	36	18	67
MEBH-5/2-...-FR											121.3	98	43.8			
JMEB											134	87.6	43.8			
MEBH-5/3											134	108.4	54.2			

Solenoid valves MEBH, JMEBH, to ISO 5599-1

Ordering data – Width 42 mm

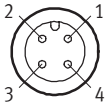
Central plug M12 – Pin allocation

Connection for single solenoid



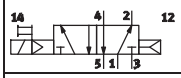
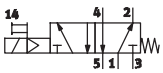
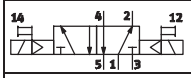
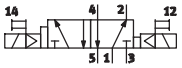
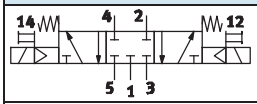
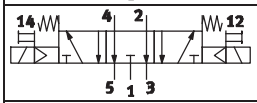
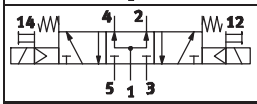
1	Unused
2	Unused
3	com (–)
4	Signal (+) solenoid 14

Connection for double solenoid



1	Unused
2	Signal (+) solenoid 12
3	com (–)
4	Signal (+) solenoid 14

Ordering data

Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic spring	**184493**	**MEBH-5/2-D-1-ZSR-C**
	Mechanical reset method	**184494**	**MEBH-5/2-D-1-ZSR-FR-C**
5/2-way valve, double solenoid			
	–	**184495**	**JMEBH-5/2-D-1-ZSR-C**
	Dominant: signal at 14	**184196**	**JMEBDH-5/2-D-1-ZSR-C**
5/3-way valve, single solenoid			
	Normally closed	**184498**	**MEBH-5/3G-D-1-ZSR-C**
	Normally exhausted	**184497**	**MEBH-5/3E-D-1-ZSR-C**
	Normally open	**184499**	**MEBH-5/3B-D-1-ZSR-C**

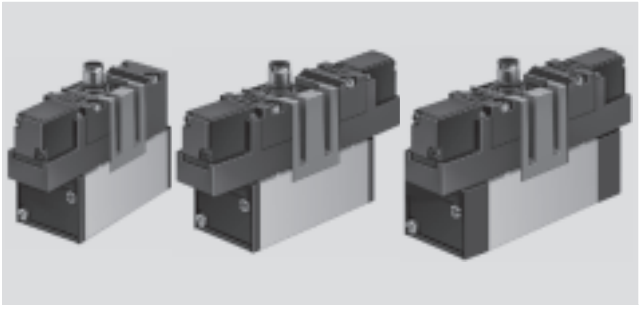
Solenoid valves MEBH, JMEBH, to ISO 5599-1

Technical data – Width 52 mm

FESTO

Flow rate
2,300 l/min

Voltage
24 V DC



General technical data							
Valve function			5/2-way		5/3-way		
Normal position			–	–	G[1]	B[2]	E[3]
Memory stability			Single solenoid	Double solenoid	Single solenoid		
Pneumatic spring reset method			Yes	–	No		
Mechanical spring reset method			Yes	–	Yes		
Design			Piston spool valve				
Sealing principle			Soft				
Actuation type			Electric				
Type of control			Piloted				
Pilot air supply			Internal				
Direction of flow			Non-reversible				
Exhaust function			Flow control				
Manual override			Detenting via accessory				
Type of mounting			Via through-hole				
Mounting position			Any				
Nominal size		[mm]	11				
Standard nominal flow rate		[l/min]	2,300				
Switching time on/off, pneumatic spring		[ms]	50/85	–	–		
Switching time on/off, mechanical spring		[ms]	33/103	–	30/106		
Changeover time		[ms]	–	15	–		
Switching time with dominant signal at 14 (12/14)		[ms]	–	23	–		
Width		[mm]	52				
Grid dimension		[mm]	56				
Connection on the sub-base	1, 2, 3, 4, 5		G3/8				
	12, 14		M5				
Product weight		[g]	700	770	800		

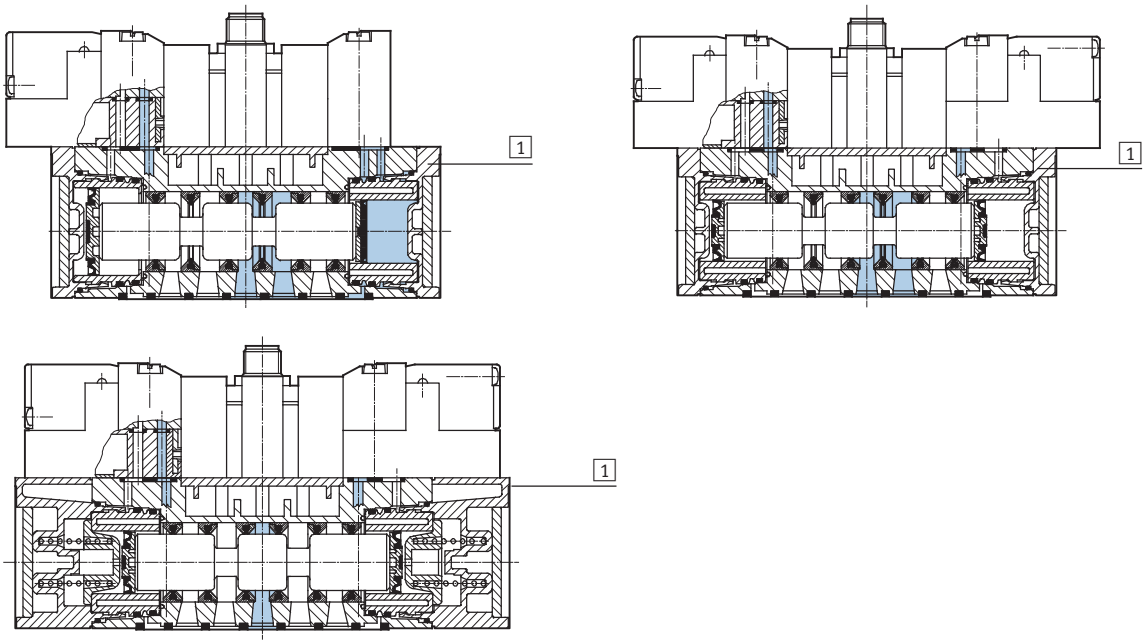
1) G = Normally closed
2) B = Normally open
3) E = Normally exhausted

Operating and environmental conditions				
Reset method			Pneumatic spring	Mechanical spring
Operating medium			Dried compressed air, lubricated or unlubricated, grade of filtration 40 µm, vacuum	
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +16	
Pilot pressure		[bar]	2 ... 10	3 ... 10
Ambient temperature		[°C]	–5 ... +50	
Temperature of medium		[°C]	–5 ... +50	

Electrical data – EB solenoid coil with round plug M12x1			
Electrical connection	Design		M12x1
Coil characteristics	DC voltage	[V DC]	24
	Power	[W]	2.5
Duty cycle		[%]	100
Protection class to EN 60529			IP65

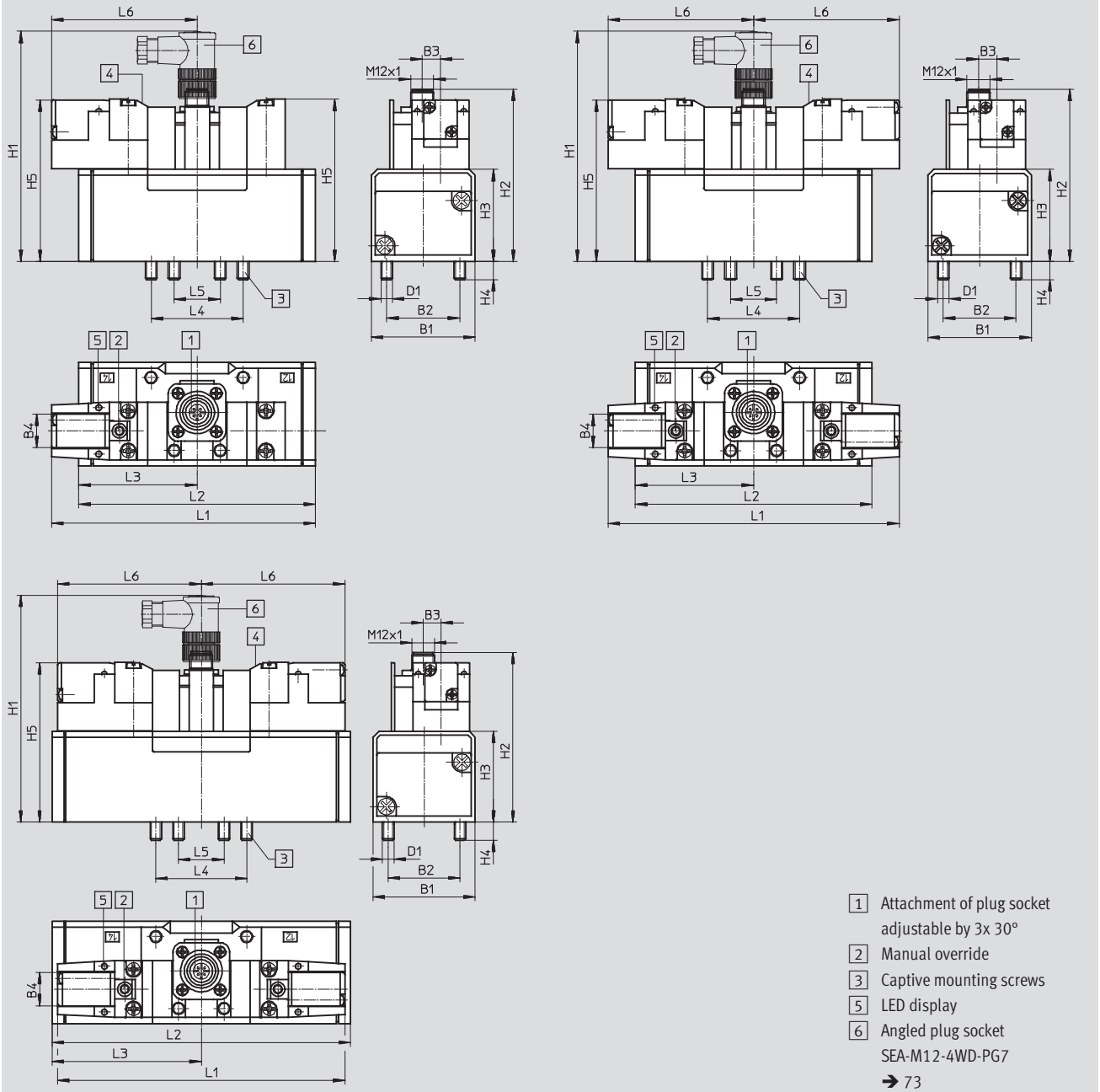
Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Dimensions Download CAD data ➔ **www.festo.com**



1 Attachment of plug socket adjustable by 3x 30°
2 Manual override
3 Captive mounting screws
5 LED display
6 Angled plug socket SEA-M12-4WD-PG7
➔ 73

Type	B1	B2	B3	B4	D1	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6
MEBH-5/2	54	38	9	17.5	M6	120	90.1	48	9.5	84.2	137.6	123.4	61.7	48	24	75.9
MEBH-5/2-...-FR											154.9	140.7	61.7			
JMEB											151.8	123.4	61.7			
MEBH-5/3											151.8	158	79			

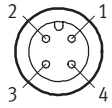
Solenoid valves MEBH, JMEBH, to ISO 5599-1

Ordering data – Width 52 mm

FESTO

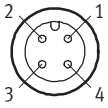
Central plug M12 – Pin allocation

Connection for single solenoid



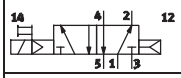
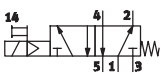
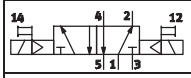
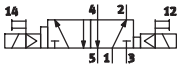
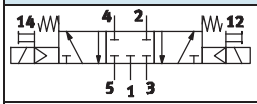
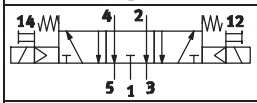
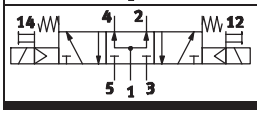
1 Unused
2 Unused
3 com (–)
4 Signal (+) solenoid 14

Connection for double solenoid



1 Unused
2 Signal (+) solenoid 12
3 com (–)
4 Signal (+) solenoid 14

Ordering data

Circuit symbol	Description	Part No.	Type
5/2-way valve, single solenoid			
	Pneumatic spring	**184500**	**MEBH-5/2-D-2-ZSR-C**
	Mechanical reset method	**184501**	**MEBH-5/2-D-2-ZSR-FR-C**
5/2-way valve, double solenoid			
	–	**184502**	**JMEBH-5/2-D-2-ZSR-C**
	Dominant: signal at 14	**184503**	**JMEBDH-5/2-D-2-ZSR-C**
5/3-way valve, single solenoid			
	Normally closed	**184505**	**MEBH-5/3G-D-2-ZSR-C**
	Normally exhausted	**184504**	**MEBH-5/3E-D-2-ZSR-C**
	Normally open	**184506**	**MEBH-5/3B-D-2-ZSR-C**

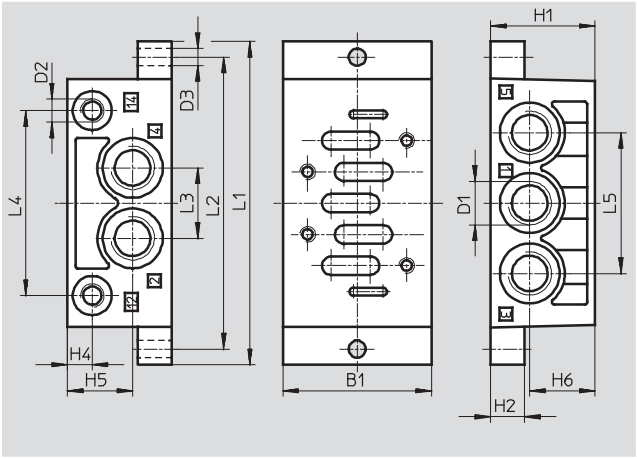
Manifold components, to ISO 5599-1

Horizontal stacking

Individual sub-base NAS

Ports at side

Material:
Die-cast aluminium



Dimensions and ordering data

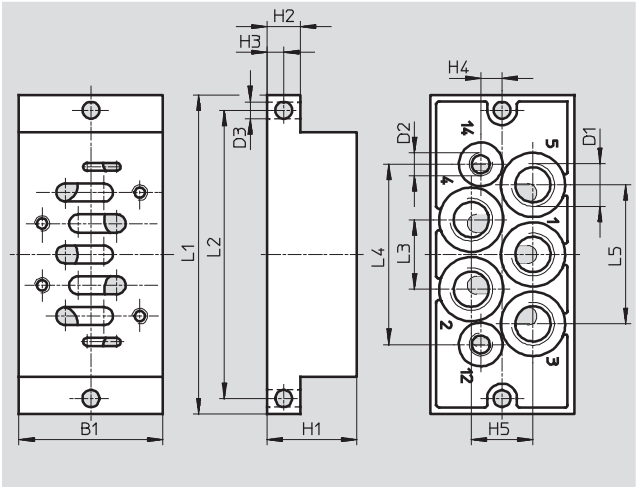
ISO size/width	B1	D1	D2	D3 ∅	H1	H2	H4	H5	H6	L1	L2	L3	L4	L5	Weight [g]	Part No.	Type
1/42 mm	48	G¼	G⅛	5.5	32	10	9	20.3	20.3	110	98	23	60	46	190	**9484**	**NAS-¼-1A-ISO**[1]
2/52 mm	57	G⅜	G⅛	6.6	40	13	9	25	25	124	112	27	71	54	300	**11310**	**NAS-⅜-2A-ISO**[1]

1) Free of copper and PTFE

Individual sub-base NAU

Ports underneath

Material:
Die-cast aluminium



Dimensions and ordering data

ISO size/width	B1	D1	D2	D3 ∅	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	Weight [g]	Part No.	Type
1/42 mm	46	G¼	G⅛	5.5	30	10	5	7.5	20	110	98	23	60.7	46	280	**9485**	**NAU-¼-1B-ISO**[1]
2/52 mm	56	G⅜	G⅛	6.6	35	13	6.5	8.3	24	124	112	27	70	54	450	**11416**	**NAU-⅜-2B-ISO**[1]

1) Free of copper and PTFE

Manifold components, to ISO 5599-1

Horizontal stacking

Manifold sub-base NAV
Ports underneath

Material:
Die-cast aluminium

Ordering data					
ISO size/ width	Pneumatic connection		Weight	Part No.	Type
	1, 2, 3, 4, 5	12, 14	[g]		
1/42 mm	G¼	G⅛	240	**10173**	**NAV-¼-1C-ISO**
2/52 mm	G⅜	G⅛	400	**11305**	**NAV-⅜-2C-ISO**

Dimensions ➔ 64

90° connection plate NAW
Ports at side and underneath

Material:
Die-cast aluminium

Ordering data					
ISO size/ width	Pneumatic connection		Weight	Part No.	Type
	1, 2, 3, 4, 5	12, 14	[g]		
1/42 mm	G¼	G⅛	360	**11304**	**NAW-¼-1E-ISO**[1)]
2/52 mm	G⅜	G⅛	600	**11307**	**NAW-⅜-2E-ISO**[1)]

Dimensions ➔ 64
1) Free of copper and PTFE

Manifold sub-base with 90° connections NAVW
Ports at side and underneath

Material:
Die-cast aluminium

Ordering data					
ISO size/ width	Pneumatic connection		Weight	Part No.	Type
	1, 2, 3, 4, 5	12, 14	[g]		
1/42 mm	G¼	G⅛	320	**152789**	**NAVW-¼-1-ISO**
2/52 mm	G⅜	G⅛	550	**152790**	**NAVW-⅜-2-ISO**

Dimensions ➔ 64

End plate kit NEV

Material:
Die-cast aluminium

Ordering data					
ISO size/ width	Pneumatic connection		Weight	Part No.	Type
	1, 2, 3, 4, 5	12, 14	[g]		
1/42 mm	G⅜	–	280	**10174**	**NEV-1DA/DB-ISO**[1)]
2/52 mm	G½	–	450	**11306**	**NEV-2DA/DB-ISO**[1)]

Dimensions ➔ 64
1) Free of copper and PTFE
Note: This product conforms to ISO 1179-1 and to ISO 228-1

Manifold components, to ISO 5599-1

Horizontal stacking

FESTO

Blanking plate NDV

Material:
Steel

Ordering data			
ISO size/ width	Weight [g]	Part No.	Type
1/42 mm	113	**9489**	**NDV-1-ISO**
2/52 mm	166	**11308**	**NDV-2-ISO**

Dimensions ➔ 64

Isolating disc NSC

Material:
Wrought aluminium alloy

Ordering data					
ISO size/ width	Pneumatic connection		Weight [g]	Part No.	Type
	1, 2, 3	12, 14			
1/42 mm	¼	–	6	**11550**	**NSC-¼-1-ISO**[1)]
2/52 mm	⅜	–	9.2	**11908**	**NSC-⅜-2-ISO**[1)]

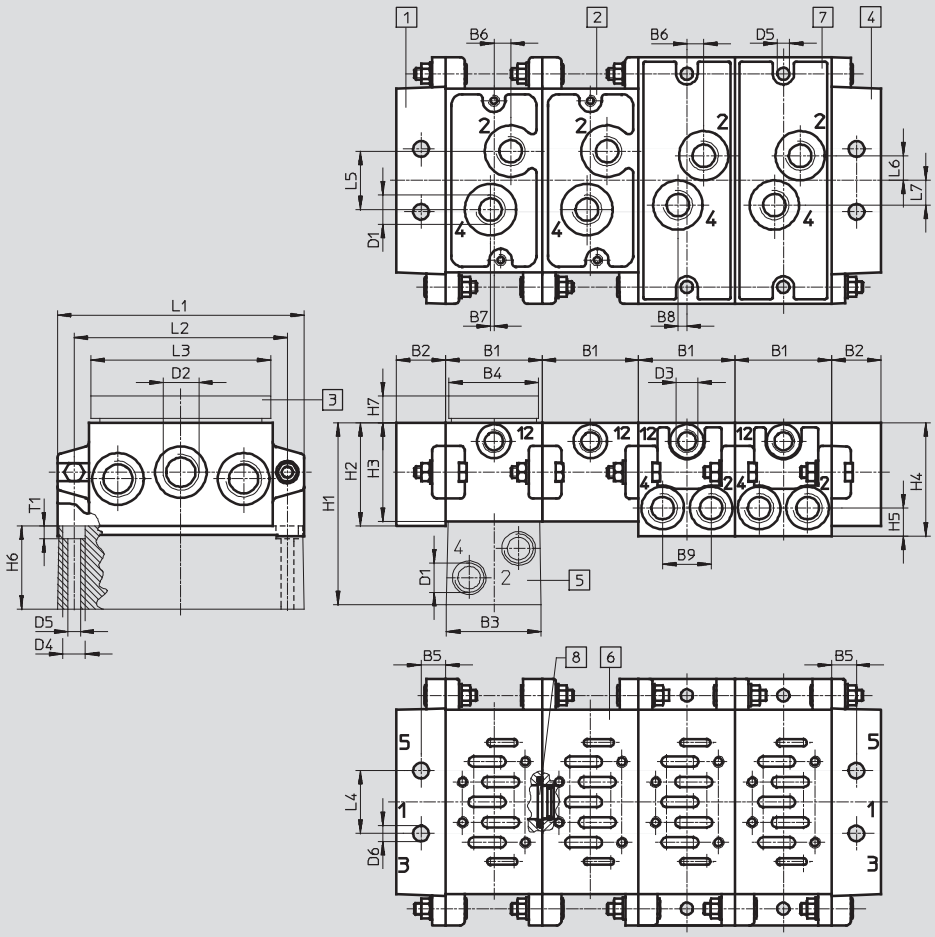
Dimensions ➔ 64

1) Free of copper and PTFE

Manifold components, to ISO 5599-1

Horizontal stacking

Dimensions – Manifold assembly Download CAD data ➔ **www.festo.com/en/engineering**



1 Left-hand end plate
2 Manifold sub-base NAV
3 Blanking plate NDV
4 Right-hand end plate
5 90° connection plate NAW
6 Port pattern to ISO 5599-1
7 Manifold sub-base with 90° connections NAVW
8 Isolating disc NSC

ISO size/width															
1/42 mm	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1	D2	D3	D4	D5	D6
	43	22	42	40	11	7.5	1.5	4	21.6	G¼	G⅜	G⅛	10	5.5	7
	H1	H2	H3	H4	H5	H6	H7	L1	L2	L3	L4	L5	L6	L7	T1
	81	46	44	50.5	12.5	37	5	110	95	80	28	26	11	11	5.7
2/52 mm	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1	D2	D3	D4	D5	D6
	56	26	55	50	13	6	5	6	27	G⅜	G½	G⅛	11	6.6	9
	H1	H2	H3	H4	H5	H6	H7	L1	L2	L3	L4	L5	L6	L7	T1
	85	47	45	60	15	40	5	135	115	96	35	30	15	14	6.8

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Manifold components, to ISO 5599-1

Vertical stacking

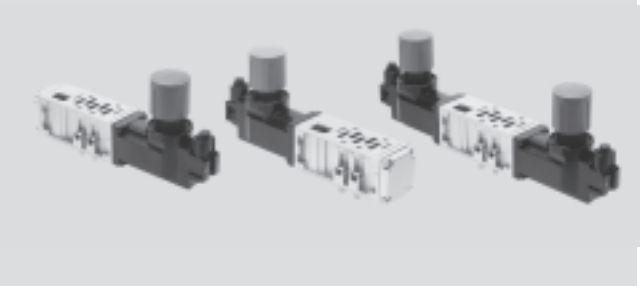
Regulator plate
VABF-S1-...-R

Materials:
Housing: Die-cast aluminium
Control section: PA

Ambient temperature
–5 ... +50 °C

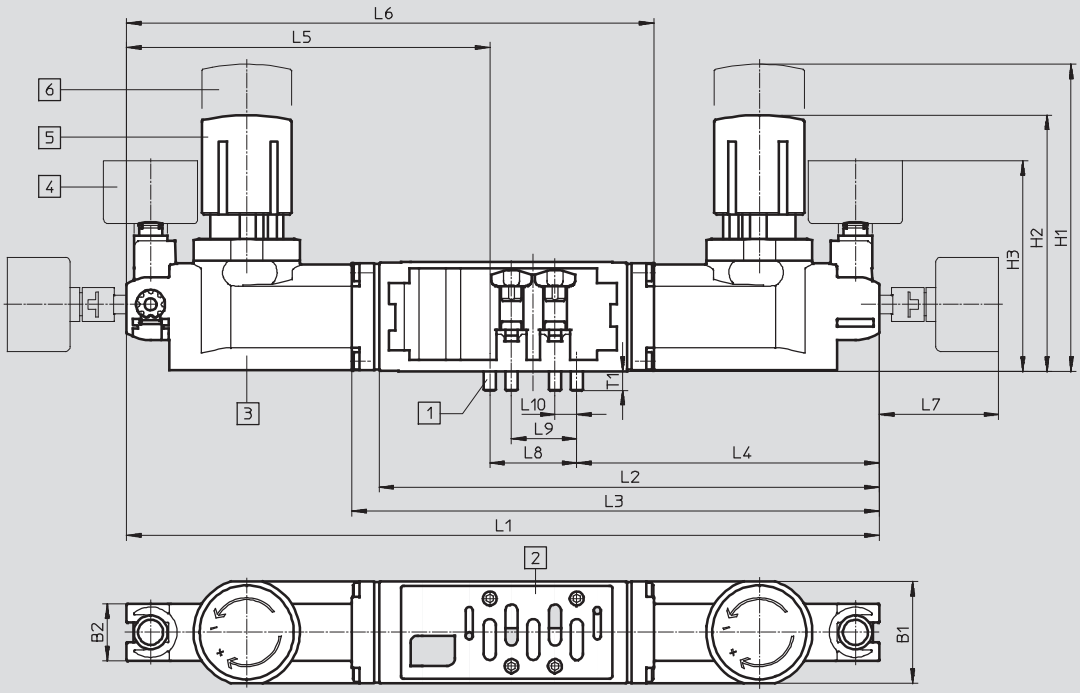
Regulating function:
Supply pressure: 0.5 ... 10 bar

Pressure regulating ranges:
0.5 ... 6 bar, 0.5 ... 10 bar
Output pressure constant
with secondary venting



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

Regulator plate: A regulator, B regulator, AB regulator, P regulator



1 Captive screws M5x25 (width 42 mm) or M6x30 (width 52 mm)
2 Port pattern to ISO 5599-1
3 Regulator
4 Pressure gauge
5 Regulator head in the locked state
6 Regulator head with pressure adjustment

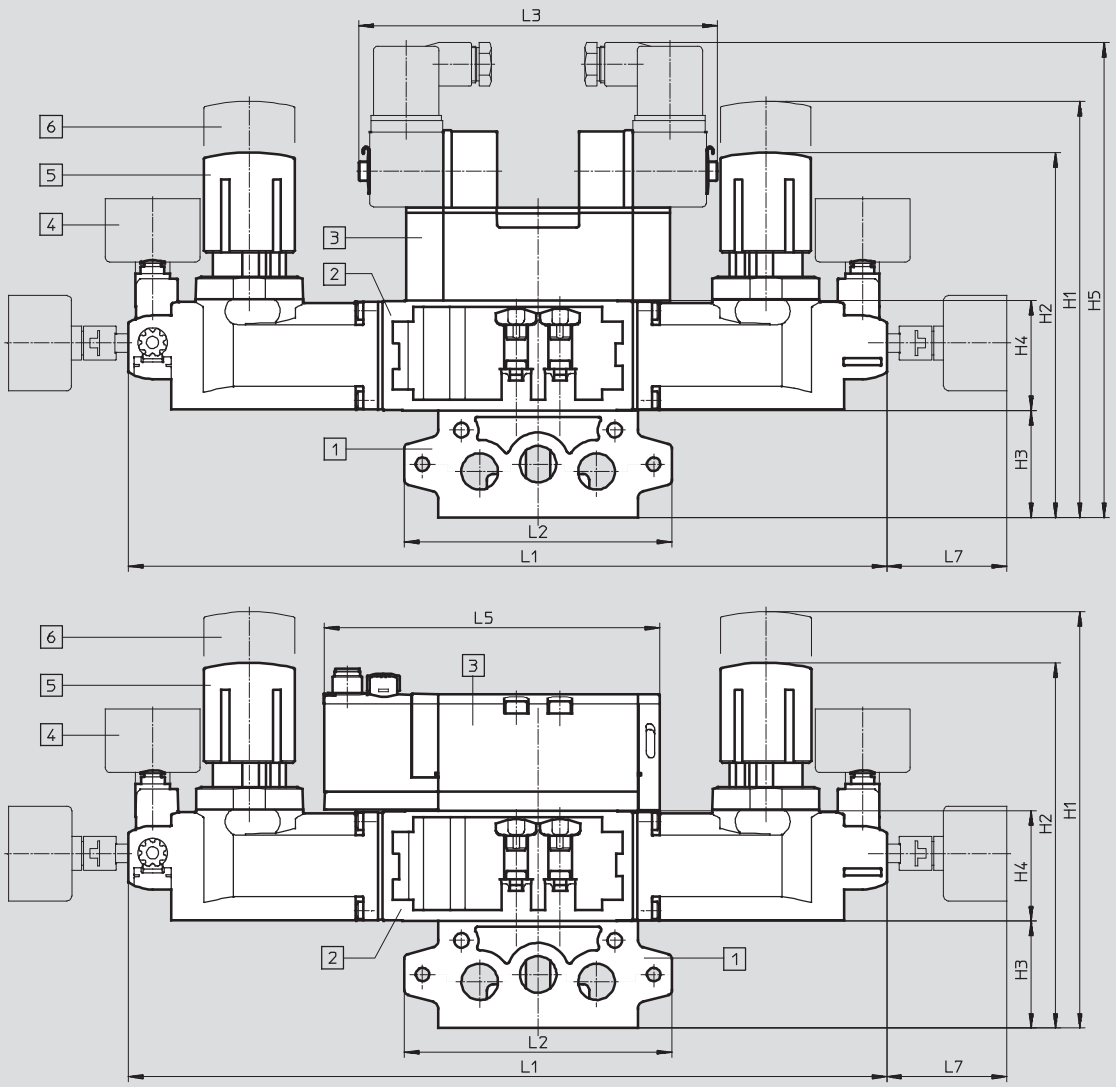
Type	B1	B2	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	T1	Weight [g]
Width 42 mm																	
VABF-S1-1-R1	42.1	23.6	127.2	106.1	87.1	–	207.1	–	125.3	–	–	49.4	36	27	9	7.9	640
VABF-S1-1-R4(5)						311.6	–	–	–	–	–						920
VABF-S1-1-R3(7)						–	–	–	125.3	150.3	216.1						640
VABF-S1-1-R2(6)						–	–	216.2	125.3	–	–						640
Width 52 mm																	
VABF-S1-2-R1	54	23.6	183.5	161.9	94.4	–	250.2	–	152.2	–	–	49.4	48	36	12	10	1,190
VABF-S1-2-R4(5)						380.4	–	–	–	–	–						1,990
VABF-S1-2-R3(7)						–	–	–	152.2	180.2	264.2						1,230
VABF-S1-2-R2(6)						–	–	264.2	152.2	–	–						1,230

Manifold components, to ISO 5599-1

Vertical stacking

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

Regulator plate with manifold sub-base and solenoid valve

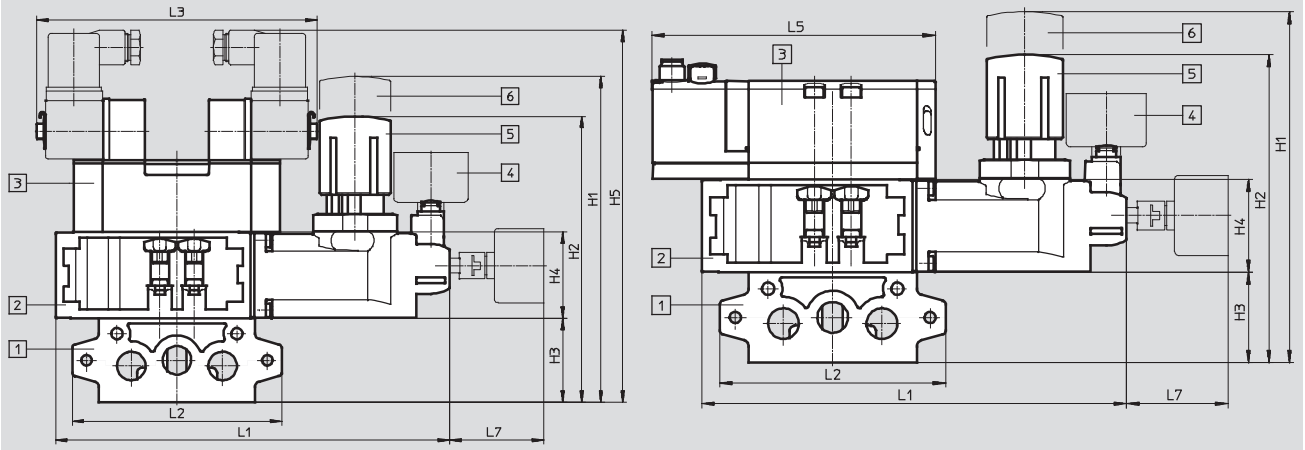


1 Manifold sub-base NAV
2 Pressure regulator plate
3 Solenoid valve
4 Pressure gauge, freely positionable
5 Regulator head in the locked state
6 Regulator head with pressure adjustment

Type	H1	H2	H3	H4	H5	L1	L2	L3	L5	L7
VABF-S1-1-R	171.2	150.1	44	45.3	195.3	311.6	110	147.3	137.8	49.4
VABF-S1-2-R	228.5	206.9	45	58.9	219.9	380.4	135	165	160.7	49.4

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

Regulator plate with manifold sub-base and solenoid valve

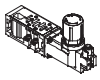
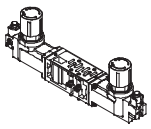
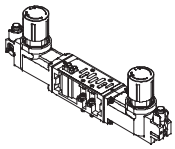


1 Manifold sub-base NAV
2 Pressure regulator plate
3 Solenoid valve
4 Pressure gauge, freely positionable
5 Regulator head in the locked state
6 Regulator head with pressure adjustment

Type	H1	H2	H3	H4	H5	L1	L2	L3	L5	L7
VABF-S1-1-R	171.2	150.1	44	45.3	195.3	207.1	110	147.3	137.8	49.4
VABF-S1-2-R	228.5	206.9	45	58.9	219.9	250.2	135	165	160.7	49.4

Manifold components, to ISO 5599-1

Vertical stacking

Ordering data					
	For port	Regulator	Regulation range	Part No.	Type
Regulator plate, width 42 mm					
	1	P	0.5 ... 10 bar	**546818**	**VABF-S1-1-R1C2-C-10**
	1	P	0.5 ... 6 bar	**546817**	**VABF-S1-1-R1C2-C-6**
	4	A	0.5 ... 10 bar	**546822**	**VABF-S1-1-R2C2-C-10**
	4	A	0.5 ... 6 bar	**546821**	**VABF-S1-1-R2C2-C-6**
	2	B	0.5 ... 10 bar	**546820**	**VABF-S1-1-R3C2-C-10**
	2	B	0.5 ... 6 bar	**546819**	**VABF-S1-1-R3C2-C-6**
	2 and 4	AB	0.5 ... 10 bar	**546824**	**VABF-S1-1-R4C2-C-10**
	2 and 4	AB	0.5 ... 6 bar	**546823**	**VABF-S1-1-R4C2-C-6**
	2 and 4, reversible	AB	0.5 ... 10 bar	**546826**	**VABF-S1-1-R5C2-C-10**
	2 and 4, reversible	AB	0.5 ... 6 bar	**546825**	**VABF-S1-1-R5C2-C-6**
	2, reversible	B	0.5 ... 10 bar	**546828**	**VABF-S1-1-R6C2-C-10**
	2, reversible	B	0.5 ... 6 bar	**546827**	**VABF-S1-1-R6C2-C-6**
	4, reversible	A	0.5 ... 10 bar	**546830**	**VABF-S1-1-R7C2-C-10**
	4, reversible	A	0.5 ... 6 bar	**546829**	**VABF-S1-1-R7C2-C-6**
Regulator plate, width 52 mm					
	1	P	0.5...10 bar	**555758**	**VABF-S1-2-R1C2-C-10**
	1	P	0.5...6 bar	**555757**	**VABF-S1-2-R1C2-C-6**
	2	A	0.5...10 bar	**555760**	**VABF-S1-2-R2C2-C-10**
	2	A	0.5...6 bar	**555759**	**VABF-S1-2-R2C2-C-6**
	4	B	0.5...10 bar	**555762**	**VABF-S1-2-R3C2-C-10**
	4	B	0.5...6 bar	**555761**	**VABF-S1-2-R3C2-C-6**
	2 and 4	AB	0.5...10 bar	**555764**	**VABF-S1-2-R4C2-C-10**
	2 and 4	AB	0.5...6 bar	**555763**	**VABF-S1-2-R4C2-C-6**
	2 and 4, reversible	AB	0.5...10 bar	**555766**	**VABF-S1-2-R5C2-C-10**
	2 and 4, reversible	AB	0.5...6 bar	**555765**	**VABF-S1-2-R5C2-C-6**
	2, reversible	B	0.5...10 bar	**555768**	**VABF-S1-2-R6C2-C-10**
	2, reversible	B	0.5...6 bar	**555767**	**VABF-S1-2-R6C2-C-6**
	4, reversible	A	0.5...10 bar	**555770**	**VABF-S1-2-R7C2-C-10**
	4, reversible	A	0.5...6 bar	**555769**	**VABF-S1-2-R7C2-C-6**

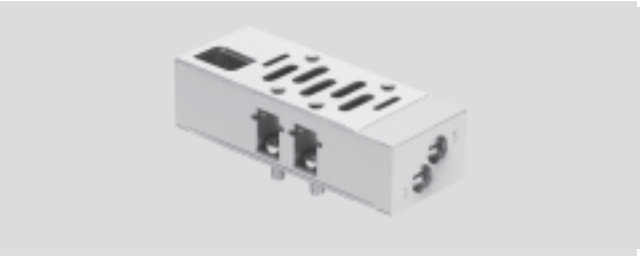
Manifold components, to ISO 5599-1

Vertical stacking

Flow control plate
VABF-S1-...-F1B1-C

Ambient temperature
–5 ... +50 °C

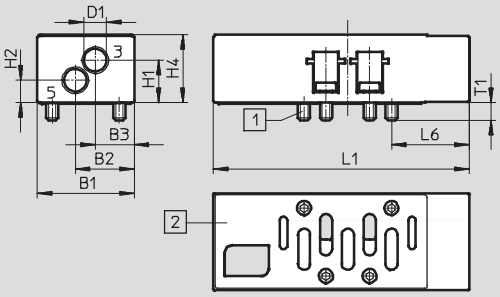
Material:
Housing: Die-cast aluminium



Dimensions

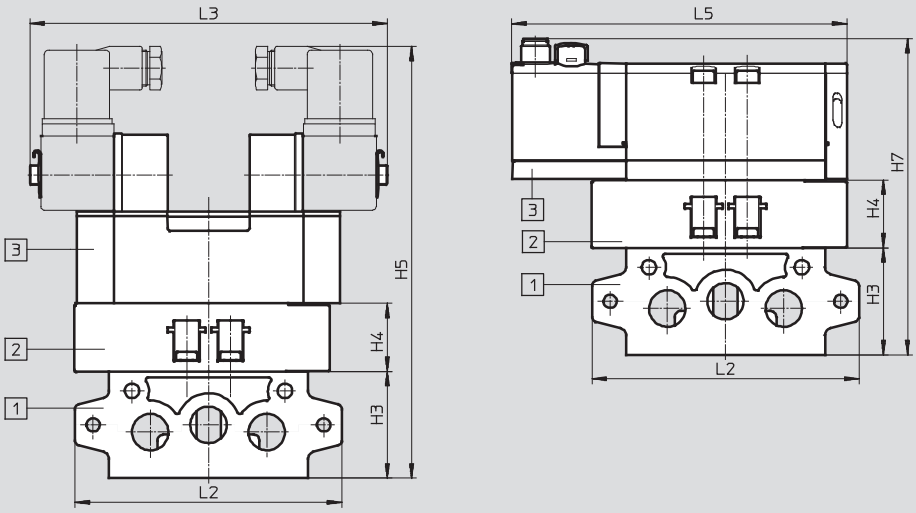
Download CAD data ➔ **www.festo.com/en/engineering**

Flow control plate



1 Captive screws M5x12 (width 42 mm) or M6x16 (width 52 mm)
2 Port pattern to ISO 5599-1

Flow control plate with manifold sub-base and solenoid valve



1 Manifold sub-base NAV
2 Flow control plate
3 Solenoid valve

Type	B1	B2	B3	⌀ D1	H1	H2	H3	H4	H5	H7	L1	L2	L3	L5	L6	T1
VABF-S1-1-F1B1-C	39.9	24.3	16.1	9.3	17.5	9.2	44	28	178	130.3	105.3	110	147.3	137.8	32	7.3
VABF-S1-2-F1B1-C	52	32.5	22.5	13.4	29.5	13.5	45	45	206	148.3	131	135	165	160.7	40.9	10

Ordering data

Description	Width	Weight [g]	Part No.	Type
For exhaust air flow control in ports 3 and 5 of the valve	42 mm	220	**549102**	**VABF-S1-1-F1B1-C**
	52 mm	565	**555788**	**VABF-S1-2-F1B1-C**

Manifold components, to ISO 5599-1

Vertical stacking

Vertical supply plate
VABF-S1-...-P1A3

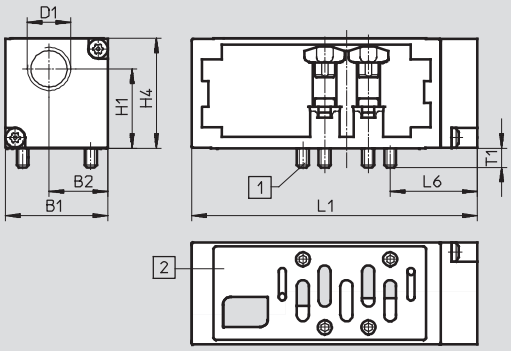
Material:
Housing: Die-cast aluminium

Ambient temperature
–5 ... +50 °C

Operating pressure
–0.9 ... +10 bar

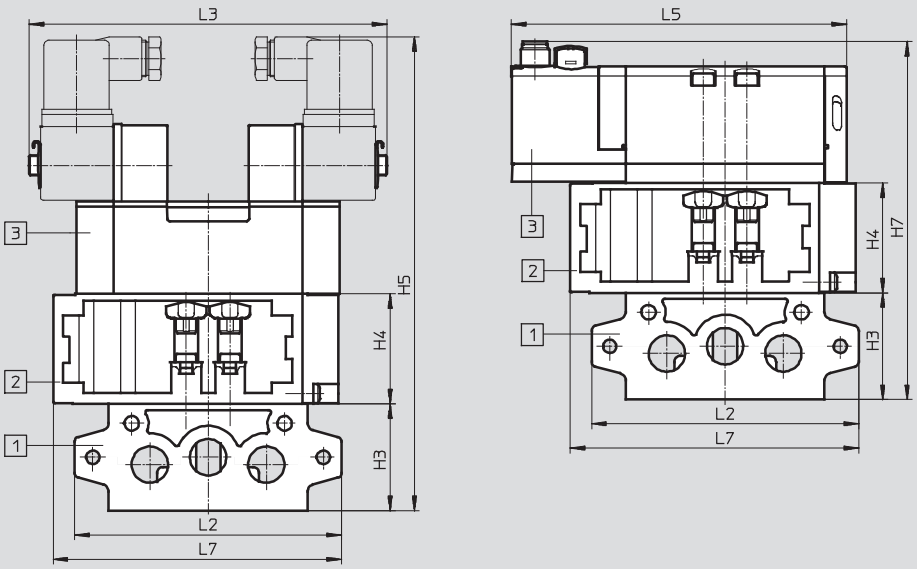
Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

Vertical supply plate



1 Captive screws M5x25 (width 42 mm) or M6x30 (width 52 mm)
2 Port pattern to ISO 5599-1

Vertical supply plate with manifold sub-base and solenoid valve



1 Manifold sub-base NAV
2 Vertical supply plate
3 Solenoid valve

Type	B1	B2	D1	H1	H3	H4	H5	H7	L1	L2	L3	L5	L6	L7	T1
VABF-S1-1-P1A3-G38	42.1	24.2	G3/8	32.7	44	45.3	195.3	147.6	117.6	110	147.3	137.8	35.8	118.8	7.9
VABF-S1-2-P1A3-G12	54	31	G1/2	42.4	45	58.9	219.9	162.2	136	135	165	160.7	38	141.5	10

Ordering data

Description	Width	Weight [g]	Part No.	Type
For independently supplying working air to a valve	42 mm	340	**549100**	**VABF-S1-1-P1A3-G38**
	52 mm	605	**555785**	**VABF-S1-2-P1A3-G12**

Manifold components, to ISO 5599-1

Vertical stacking

Vertical pressure shut-off plate
VABF-S1-...-L1D1-C

Material:
Housing: Die-cast aluminium

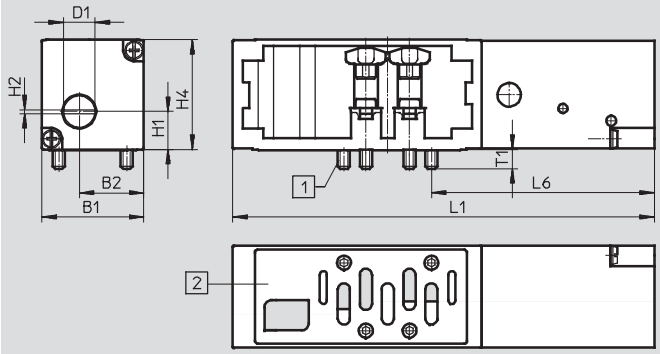
Ambient temperature
–5 ... +50 °C

Operating pressure
–0.9 ... +10 bar

Dimensions

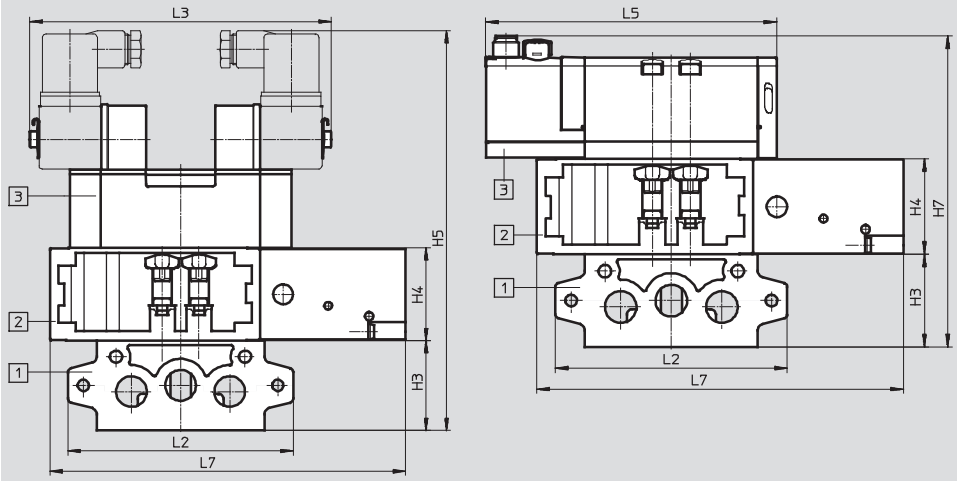
Download CAD data ➔ **www.festo.com/en/engineering**

Vertical pressure shut-off plate



1 Captive screws M5x25 (width 42 mm) or M6x30 (width 52 mm)
2 Port pattern to ISO 5599-1

Vertical pressure shut-off plate with manifold sub-base and solenoid valve



1 Manifold sub-base NAV
2 Vertical pressure shut-off plate
3 Solenoid valve

Type	B1	B2	D1	H1	H2	H3	H4	H5	H7	L1	L2	L3	L5	L6	L7	T1
VABF-S1-1-L1D1-C	42.1	26.7	12.8	15.6	1.6	44	45.3	195.3	147.6	173.8	110	147.3	137.8	92	173.8	7.9
VABF-S1-2-L1D1-C	54	32.6	14	21.3	1.6	45	58.7	219.7	162	191.2	135	165	160.7	93.2	191.2	10

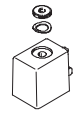
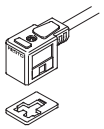
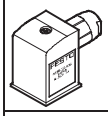
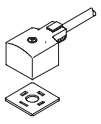
Ordering data

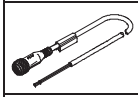
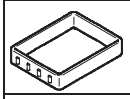
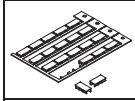
Description	Width	Weight [g]	Part No.	Type
For shutting off a valve from the supply pressure	42 mm	600	**549103**	**VABF-S1-1-L1D1-C**
	52 mm	1030	**555790**	**VABF-S1-2-L1D1-C**

Solenoid valves, to ISO 5599-1

Accessories

FESTO

Ordering data					
	Description			Part No.	Type
Solenoid coils					
	Type F for valves MFH, JMFH	12 V DC		34410	MSFG-12DC-OD
		24 V DC and 42 V AC, 50 ... 60 Hz		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
	Type N1 for valves MN1H, JMN1H	24 V DC		123060	MSN1G-24DC-OD
		12 V DC and 24 V AC, 50 ... 60 Hz		170152	MSN1W-24AC/12DC
		110 V AC, 50 ... 60 Hz		123061	MSN1W-110AC-OD
		230 V AC, 50 ... 60 Hz		123062	MSN1W-230AC-OD
Plug sockets, plug sockets with cable for F solenoid coils					
	Plug socket			34431	MSSD-F
				59710	MSSD-F-M16
	Plug socket with insulation displacement technology			192746	MSSD-F-S-M16
	Plug socket with cable	24 V DC, switching status display via LED	Cable length 2.5 m	30935	KMF-1-24DC-2,5-LED
			Cable length 5 m	30937	KMF-1-24DC-5-LED
			Cable length 10 m	193458	KMF-1-24DC-10-LED
		Up to 240 V, without switching status display	Cable length 2.5 m	30936	KMF-1-230AC-2,5
			Cable length 5 m	30938	KMF-1-230AC-5
Plug sockets, plug sockets with cable for N1 and D solenoid coils					
	Plug socket			34583	MSSD-C
	Plug socket without cable with insulation displacement technology			192748	MSSD-C-S-M16
	Plug socket with cable	24 V DC, switching status display via LED	Cable length 2.5 m	30931	KMC-1-24DC-2,5-LED
			Cable length 5 m	30933	KMC-1-24DC-5-LED
			Cable length 10 m	193459	KMC-1-24DC-10-LED
		Up to 230 V, without switching status display	Cable length 2.5 m	30932	KMC-1-230AC-2,5
			Cable length 5 m	30934	KMC-1-230AC-5

Ordering data				
	Description		Part No.	Type
Illuminating seal				
	For F solenoid coils	12 ... 24 V DC	**19143**	**MF-LD-12-24DC**
	For N1 solenoid coils	12 ... 24 V DC	**19145**	**MC-LD-12-24DC**
		230 V DC/V AC	**19146**	**MC-LD-230AC**
Plug sockets, connecting cables for VSVA				
	Plug socket		**185498**	**SEA-M12-4WD-PG7**
	Connecting cable M12x1, 4-pin, 24 V DC, without switching status display, straight socket/open end	Cable length 2.5 m	**541363**	**NEBU-M12G5-K-2,5-LE3**
		Cable length 5 m	**541364**	**NEBU-M12G5-K-5-LE3**
	Connecting cable M12x1, 4-pin, 24 V DC, without switching status display, straight angled socket/open end	Cable length 2.5 m	**541367**	**NEBU-M12W5-K-2,5-LE3**
		Cable length 5 m	**541370**	**NEBU-M12W5-K-5-LE3**
Pressure gauge				
	With cartridge connection for regulator	10 bar	**543487**	**PAGN-26-16-P10**
		6 bar	**543488**	**PAGN-26-10-P10**
Seal				
	Enables the VSVA valves to be assembled on sub-bases of the valve terminal type 44 VTSA (2 included in the scope of delivery)		**571343**	**VABD-S2-1-S-C**
Inscription label				
	Inscription label for valves VSVA (24 in frames included in scope of delivery)		**18182**	**IBS-9x20**
	Clip-on inscription label holder for valve cap (5 included in scope of delivery)		**540888**	**ASCF-T-S6**
Manual override				
	Tool for manual override for MN1H/MFH valves		**157651**	**AHB-MD/MF/MV**