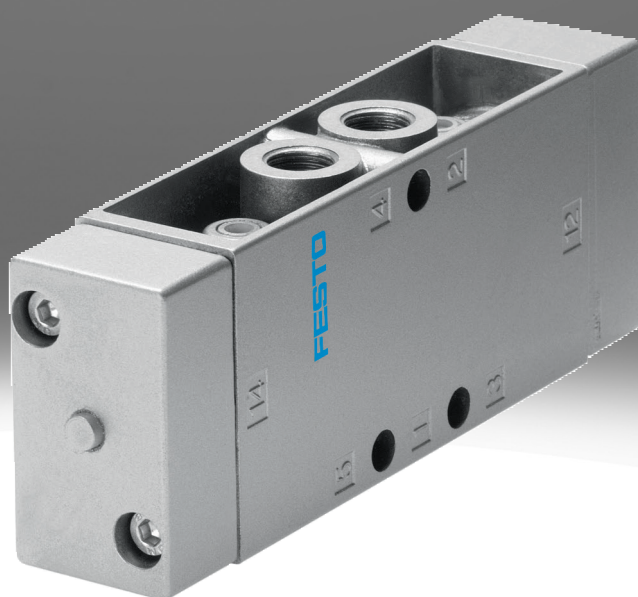


Tiger Classic valve

FESTO



Characteristics

At a glance

General information:

- Particularly sturdy poppet valve principle for all 3/2- and 5/2-way valves
- Pneumatically actuated or electrically with F solenoid coil
- With flow rate performance of up to 7500 l/min
- With internal or external pilot air
- Pipe connection thread in sizes G1/8, G1/4, G1/2 and G3/4
- Proven mounting using hollow bolt on PAL or PRS rail (without ATEX category)
- Optimised switching times thanks to patented U-ring and servo control
- Note: Valves for potentially explosive atmospheres (ATEX category) are not suitable for mounting on PAL manifold rails or PRS manifold blocks.

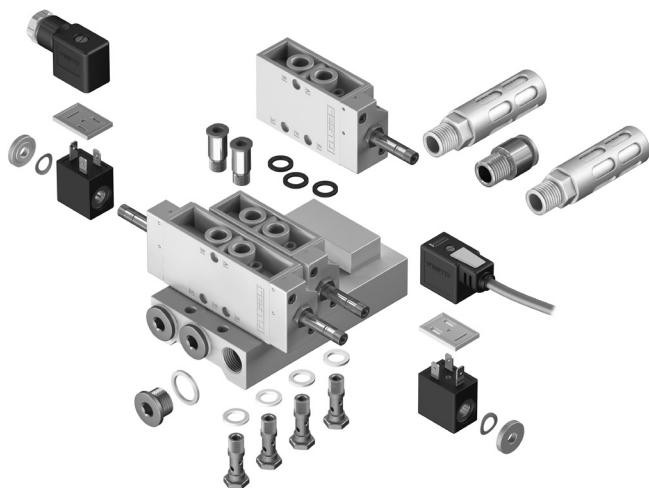
F solenoid coils:

- Voltage 12 to 230 V DC; 12 to 240 V AC (50 to 60 Hz)
- Power consumption 4.1 to 5.5 W DC; 3.85 to 9 VA AC
- Selected types in accordance with the ATEX directive for potentially explosive atmospheres
- Solenoid coil can be easily replaced at a later date
- Solenoid coil not included in the scope of delivery

Variants:

- VL/O-3-...: normally closed or normally open, depending on the choice of connections
- MFH-3-..., MOFH-3-... MFH-3-... Normally closed, MOFH-3-... Normally open; by turning the seal under the cover, these valves can be converted to the other valve versions.
- MFH-3-...S: This valve type can be used within a range of 0 to 0.8 MPa and also as MOFH (through flow when not actuated) with a separate pilot line.
- MFH-5-...S: The external pilot air connection means that these valves can also be used with low operating pressures.

Mounting method



The valves Tiger Classic can be mounted on manifold rails PAL with common supply port or on PRS manifold blocks with common supply port and common exhausts. The valves are attached to the rails and blocks using hollow bolts. The manifold rail and manifold block have 2 to 6 valve positions. Vacant positions on the PAL manifold rails can be sealed with cap nuts, and on the PRS blocks cover plates can be used. The individual valves can be supplied with separate pressure levels via hollow bolts with threaded connections.

Type code

001	Series	
MCH	Solenoid valve, with armature tube for C-solenoid coil, monostable, normally closed	
MFH	Solenoid valve, with armature tube for F-solenoid coil, monostable, normally closed	
MOCH	Solenoid valve, with armature tube for C-solenoid coil, monostable, normally open	
JMFH	Solenoid valve, with armature tube for F-solenoid coil, bistable	
MOFH	Solenoid valve, with armature tube for F-solenoid coil, monostable, normally open	
JMFDH	Solenoid valve, with armature tube for F-solenoid coil, with dominant signal, bistable	
JH	Bistable valve, pneumatic	
JDH	Bistable valve, pneumatic, with dominant signal	
VL/O	Pneumatic valve, monostable, normally open or closed	
VL	Pneumatic valve, monostable	

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

003	Pneumatic connection	
G18	G1/8	
G14	G1/4	
G12	G1/2	
G34	G3/4	

004	EX certification EU	
	None	
EX4	II 2GD	

005	Pilot air	
	Internal	
S	External	

Datasheet

Solenoid valves, 3/2-way valves, general technical data

Pneumatic connection, port 1	G1/8	G1/4	G1/2	G3/4
Valve function	3/2-way, single solenoid, closed, 3/2-way, single solenoid, open			
Design	Poppet seat			
lap	Underlap			
Sealing principle	Soft			
Type of actuation	Electrical			
Type of reset	Mechanical spring			
Type of piloting	Piloted			
Pilot air supply	External			External, Internal
Flow direction	Non-reversible, Reversible			
Exhaust-air function	Can be throttled			
Manual override	Detenting			
Type of mounting ¹⁾	Either; On manifold rail, With through-hole			
Mounting position	Any			
Electrical connection	Via F coil, to be ordered separately			
Breather connection	M3			
Pilot air port 12	M5		G1/8	
b value	–		0.3	–
Nominal size	5 mm	7 mm	14 mm	19 mm
Standard nominal flow rate (standardised to DIN 1343)	500 l/min	800 l/min	3,700 l/min	7,500 l/min
Product weight	240 g	320 g	1,100 g	1,260 g

1) Types MFH-3-3/4- and MOFH-3-3/4- can only be mounted via through-hole

Solenoid valves, 3/2-way valves, safety characteristics

Max. positive test pulse with 0 signal	2,200 µs
Max. negative test pulse with 1 signal ¹⁾	3,700 µs

1) not valid for types MFH-3-3/4- and MOFH-3-3/4-

Solenoid valves, 3/2-way valves, ATEX

ATEX category gas	II 2G
Explosion ignition protection type for gas	Ex h IIC T4 Gb
ATEX category dust	II 2D
Explosion ignition protection type for dust	Ex h IIIC T130°C Db
Explosion ambient temperature	-5°C ≤ Ta ≤ +40°C
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)
UKCA marking (see declaration of conformity)	To UK EX instructions
Explosion protection certification outside the EU	EPL Db (GB) EPL Gb (GB)
Degree of protection	IP65

Datasheet

Solenoid valves, 3/2-way valves, operating and environmental conditions

Pneumatic connection, port 1	G1/8	G1/4	G1/2	G3/4
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]			
Pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4]			
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)			
Operating pressure	-0.095 ... 1 MPa			
Operating pressure	-0.95 ... 10 bar			
Pilot pressure	1 ... 8 bar			
Pilot pressure	0.1 ... 0.8 MPa			
Ambient temperature	-5 ... 40°C			
Media temperature	-10 ... 60°C			
Storage temperature	-20 ... 60°C			
Approval	c UL us - Recognised (Oil)			
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress			
LABS (PWIS) conformity	VDMA24364-B1/B2-L			

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

Electrical data

Electrical connection	Via F coil, to be ordered separately
Characteristic coil data	See solenoid coil, to be ordered separately
Degree of protection	IP65

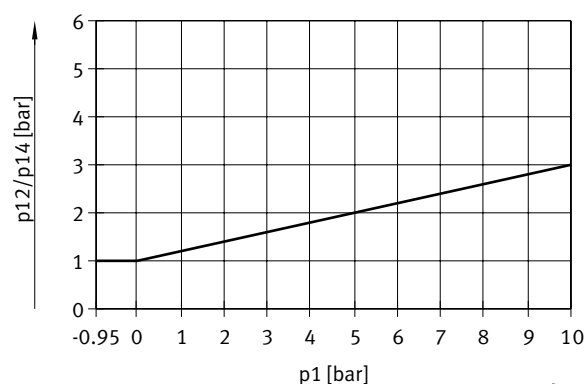
Weight

Weight					
Pneumatic connection, port 1	G1/8	G1/4	G1/2	G3/4	
Valve function	3/2-way, single solenoid, closed				3/2-way, single solenoid, open
Pilot air supply	External			Internal	
Switching time on	9 ms	10 ms	18 ms	36 ms	40 ms
Switching time off	33 ms	29 ms	90 ms	32 ms	29 ms

Materials

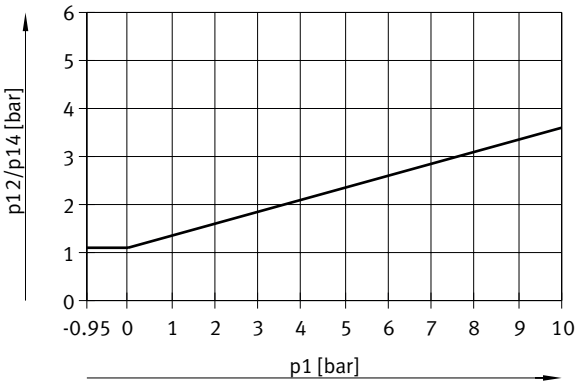
Material housing	Die-cast aluminium
Material seals	NBR
Note on materials	RoHS compliant

Solenoid valves, 3/2-way valves, minimum pilot pressure p₁₂/p₁₄ as a function of operating pressure p₁ (external pilot air supply), MFH-3-1/8-S

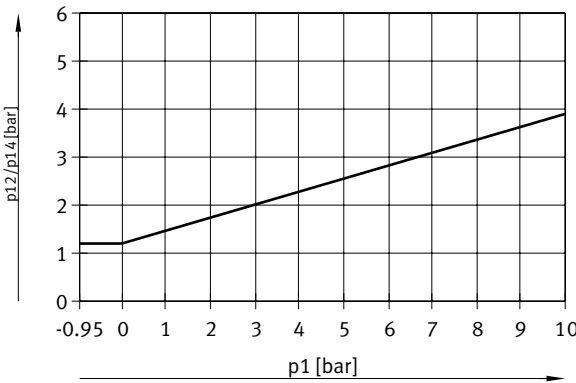


Datasheet

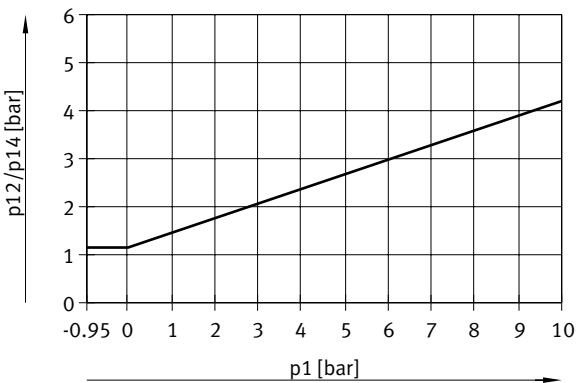
Solenoid valves, 3/2-way valves, minimum pilot pressure p12/p14 as a function of operating pressure p1 (external pilot air supply), MFH-3-1/4-S



Solenoid valves, 3/2-way valves, minimum pilot pressure p12/p14 as a function of operating pressure p1 (external pilot air supply), MFH-3-1/2-S



Solenoid valves, 3/2-way valves, minimum pilot pressure p12/p14 as a function of operating pressure p1 (external pilot air supply), MFH-3-3/4-S



Datasheet

Solenoid valves, 5/2-way valves, general technical data

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Valve function	5/2-way, single solenoid		
Design	Poppet seat		
lap	Underlap		
Sealing principle	Soft		
Type of actuation	Electrical		
Type of reset	Mechanical spring		
Type of piloting	Piloted		
Pilot air supply	External		
Flow direction	Non-reversible		
Exhaust-air function	Can be throttled		
Manual override	Detenting		
Type of mounting	Either:, On manifold rail, With through-hole		
Mounting position	Any		
Electrical connection	Via F coil, to be ordered separately		
Breather connection	M3		
b value	–	0.19	0.32
Nominal size	5 mm	7 mm	14 mm
Standard nominal flow rate (standardised to DIN 1343)	500 l/min	1,000 l/min	3,700 l/min
Product weight	270 g	290 g	1,135 g
C value	–	4.49	–

Solenoid valves, 5/2-way valves, safety characteristics

Max. positive test pulse with 0 signal	2,200 µs
Max. negative test pulse with 1 signal	3,700 µs

Solenoid valves, 5/2-way valves, operating and environmental conditions

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure	0 ... 1 MPa	0 ... 0.8 MPa	0 ... 1 MPa
Operating pressure	0 ... 10 bar	0 ... 8 bar	0 ... 10 bar
Pilot pressure	1.2 ... 8 bar	1.5 ... 8 bar	1 ... 8 bar
Pilot pressure	0.12 ... 0.8 MPa	0.15 ... 0.8 MPa	0.1 ... 0.8 MPa
Ambient temperature	-5 ... 40°C		
Media temperature	-10 ... 60°C		
Storage temperature	-20 ... 60°C		
Approval	c UL us - Recognised (Oil)		
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress		
LABS (PWIS) conformity	VDMA24364-B1/B2-L		

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

Solenoid valves, 5/2-way valves, electrical data

Electrical connection	Via F coil, to be ordered separately
Characteristic coil data	See solenoid coil, to be ordered separately
Degree of protection	IP65

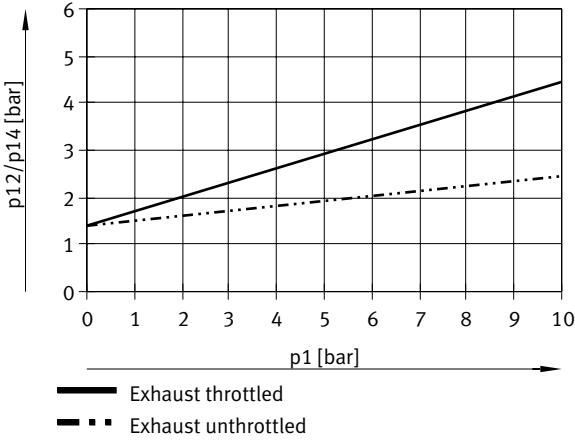
Solenoid valves, 5/2-way valves, valve switching times

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Switching time on	8 ms	9 ms	21 ms
Switching time off	36 ms	29 ms	150 ms

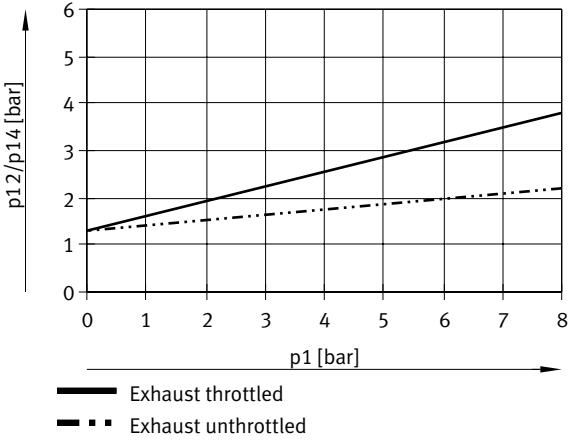
Datasheet

Solenoid valves, 5/2-way valves, materials	
Material housing	Die-cast aluminium
Material seals	NBR, TPE-U(PU)
Note on materials	RoHS compliant

Solenoid valves, 5/2-way valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 (external pilot air supply), MFH-5-1/8-S

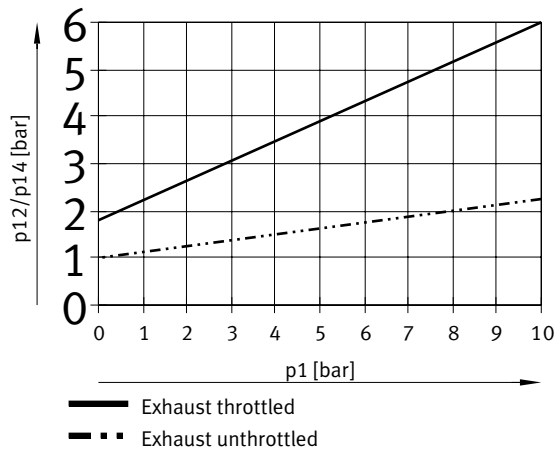


Solenoid valves, 5/2-way valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 (external pilot air supply), MFH-5-1/4-S



Datasheet

Solenoid valves, 5/2-way valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 (external pilot air supply), MFH-5-1/2-S



Solenoid valves, 5/2-way valves, double solenoid valves, general technical data

Pneumatic connection, port 1	G1/8		G1/4	G1/2
Type of actuation	Electrical	Pneumatic	Electrical	
Valve function	5/2-way, double solenoid, 5/2-way, bistable, dominant	5/2-way, double solenoid	5/2-way, double solenoid, 5/2-way, bistable, dominant	5/2-way, double solenoid
Design	Poppet seat			
lap	Underlap			
Sealing principle	Soft			
Type of piloting	Piloted			
Pilot air supply	External			
Flow direction	Non-reversible			
Exhaust-air function	Can be throttled			
Manual override	Detenting			
Type of mounting	Either:, On manifold rail, On PR rail, With through-hole	Either:, On manifold rail, With through-hole		
Mounting position	Any			
Electrical connection	Via F coil, to be ordered separately			
Breather connection	M3	–	M3	
Pilot air port 12	M5			G1/8
b value	–			0.3
Nominal size	5 mm		7 mm	14 mm
Standard nominal flow rate (standardised to DIN 1343)	600 l/min, 601 l/min	600 l/min	1,100 l/min	4,500 l/min
Product weight	260 g		344 g, 530 g	1,210 g

Solenoid valves, 5/2-way valves, double solenoid valves, safety characteristics

Pneumatic connection, port 1	G1/8		G1/4	G1/2
Max. switching frequency	16 Hz	25 Hz	16 Hz	25 Hz
Max. positive test pulse with 0 signal	2,200 µs			
Max. negative test pulse with 1 signal	3,700 µs			

Datasheet

Solenoid valves, 5/2-way valves, double solenoid valves, operating and environmental conditions

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
Pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4]		Compressed air to ISO 8573-1:2010 [7:4:4], Compressed air to ISO 8573-1:2010 [7:-:-]
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure	0 ... 1 MPa		0 ... 0.8 MPa
Operating pressure	0 ... 10 bar		0 ... 8 bar
Pilot pressure	0.12 ... 0.8 MPa		0.05 ... 0.8 MPa
Pilot pressure	1.2 ... 8 bar		0.5 ... 8 bar
Ambient temperature	-5 ... 40°C		
Media temperature	-10 ... 60°C		
Storage temperature	-20 ... 60°C		
Approval	c UL us - Recognised (Oil)		
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress		
LABS (PWIS) conformity	VDMA24364-B1/B2-L		

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

Solenoid valves, 5/2-way valves, double solenoid valves, electrical data

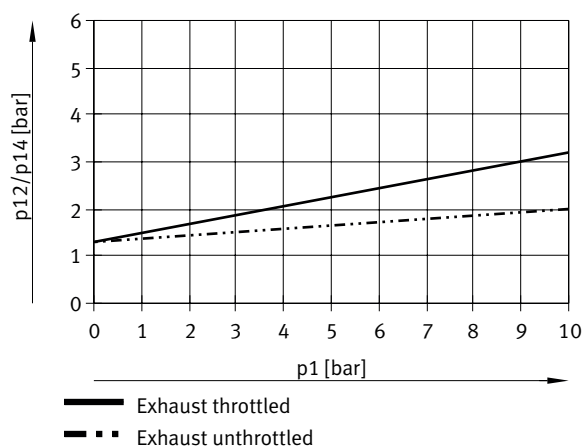
Electrical connection	Via F coil, to be ordered separately
Characteristic coil data	See solenoid coil, to be ordered separately
Degree of protection	IP65

Solenoid valves, 5/2-way valves, double solenoid valves, valve switching times

Pneumatic connection, port 1	G1/8		G1/4		G1/2
Valve function	5/2-way, double solenoid	5/2-way, bistable, dominant	5/2-way, double solenoid	5/2-way, bistable, dominant	5/2-way, double solenoid
Switching time reversal	10 ms	16 ms	11 ms	16 ms	20 ms

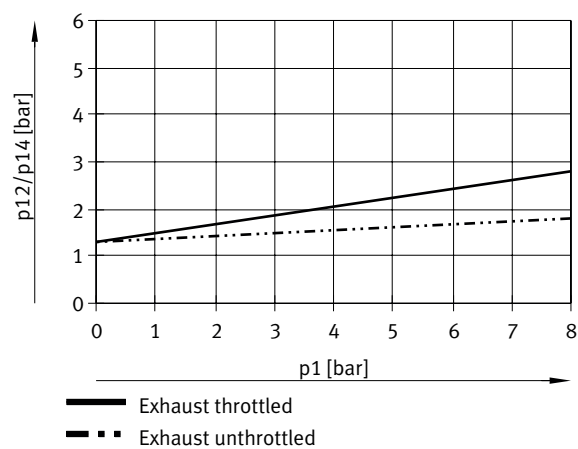
Solenoid valves, 5/2-way valves, double solenoid valves, materials

Material housing	Die-cast aluminium
Material seals	NBR, TPE-U(PU)
Note on materials	RoHS compliant

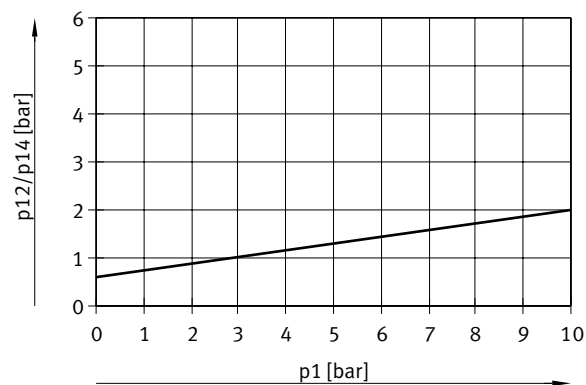
Solenoid valves, 5/2-way valves, double solenoid valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 (external pilot air supply), JMFH-5-1/8-S

Datasheet

Solenoid valves, 5/2-way valves, double solenoid valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 (external pilot air supply), JMFH-5-1/4-S



Solenoid valves, 5/2-way valves, double solenoid valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 (external pilot air supply), JMFH-5-1/2-S



Datasheet

Pneumatic valves, 3/2-way valves, general technical data				
Pneumatic connection, port 1	G1/8	G1/4	G1/2	G3/4
Valve function	3/2-way, monostable, open/closed			
Design	Poppet seat			
lap	Underlap			
Sealing principle	Soft			
Type of actuation	Pneumatic			
Type of reset	Mechanical spring			
Type of piloting	Direct			
Pilot air supply	External			
Flow direction	Reversible			
Exhaust-air function	Can be throttled			
Manual override	–		None	–
Type of mounting	Either:, On manifold rail, On PR rail, With through-hole	Either:, On manifold rail, With through-hole		
Mounting position	Any			
Electrical connection	–			Via F coil, to be ordered separately
Breather connection	M3			
Pilot air port 12	G1/8		G1/4	
b value	–		0.3	–
Nominal size	5 mm	7 mm	14 mm	19 mm
Standard nominal flow rate (standardised to DIN 1343)	500 l/min	800 l/min	3,700 l/min	7,500 l/min
Product weight	150 g	230 g	860 g	1,200 g

Pneumatic valves, 3/2-way valves, safety characteristics				
Pneumatic connection, port 1	G1/8	G1/4	G1/2	G3/4
Max. switching frequency	12 Hz	–		
Max. positive test pulse with 0 signal	2,200 µs	–		
Max. negative test pulse with 1 signal	3,700 µs	–		

Pneumatic valves, 3/2-way valves, ATEX	
ATEX category gas	II 2G
Explosion ignition protection type for gas	Ex h IIC T4 Gb
ATEX category dust	II 2D
Explosion ignition protection type for dust	Ex h IIIC T130°C Db
Explosion ambient temperature	-10°C ≤ Ta ≤ +60°C
CE mark (see declaration of conformity) ¹⁾	To EU Explosion Protection Directive (ATEX)
UKCA marking (see declaration of conformity) ²⁾	To UK EX instructions
Explosion protection certification outside the EU	EPL Db (GB) EPL Gb (GB)
Degree of protection	IP65

1) More information www.festo.com/catalogue/...d/Support/Downloads.

2) More information www.festo.com/catalogue/...d/Support/Downloads.

Datasheet

Pneumatic valves, 3/2-way valves, operating and environmental conditions

Pneumatic connection, port 1	G1/8	G1/4	G1/2	G3/4
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]			
Pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4]			
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)			
Operating pressure	-0.095 ... 1 MPa			
Operating pressure	-0.95 ... 10 bar			
Pilot pressure	0.1 ... 1 MPa			
Pilot pressure	1 ... 10 bar			
Ambient temperature	-10 ... 60°C			
Media temperature	-10 ... 60°C			
Storage temperature	-20 ... 60°C			
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress			
LABS (PWIS) conformity	VDMA24364-B1/B2-L			

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

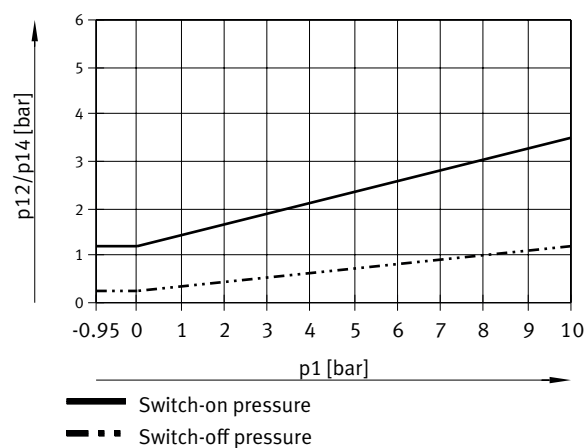
Pneumatic valves, 3/2-way valves, valve switching times

Pneumatic connection, port 1	G1/8	G1/4	G1/2	G3/4
Switching time on	4 ms	7 ms	17 ms	12 ms
Switching time off	10 ms	26 ms	30 ms	35 ms

Pneumatic valves, 3/2-way valves, materials

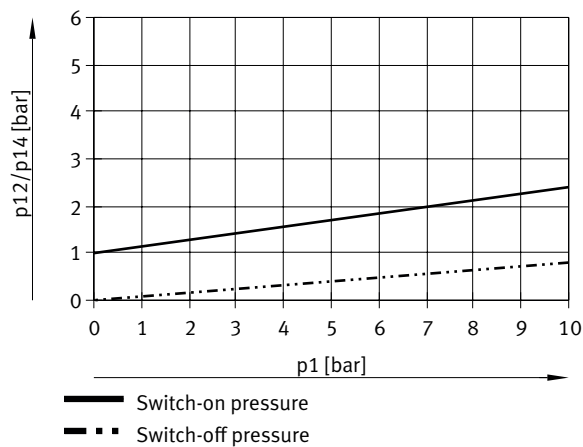
Material housing	Die-cast aluminium
Material seals	NBR
Note on materials	RoHS compliant

Pneumatic valves, 3/2-way valves, minimum pilot pressure $p_{12}/p_{14}/p_{110}$ as a function of operating pressure p_1/p_{11} , VL/0-3-1/4 - normally closed

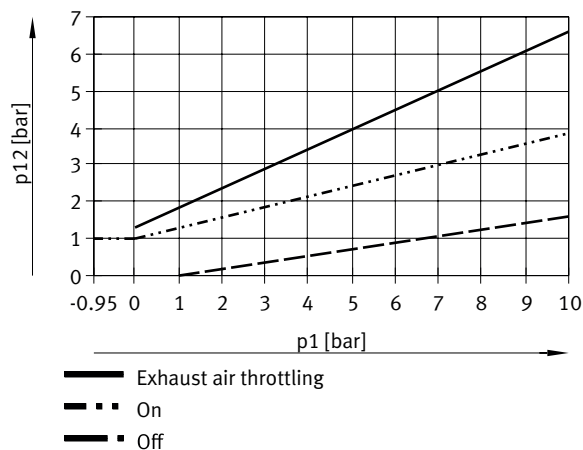


Datasheet

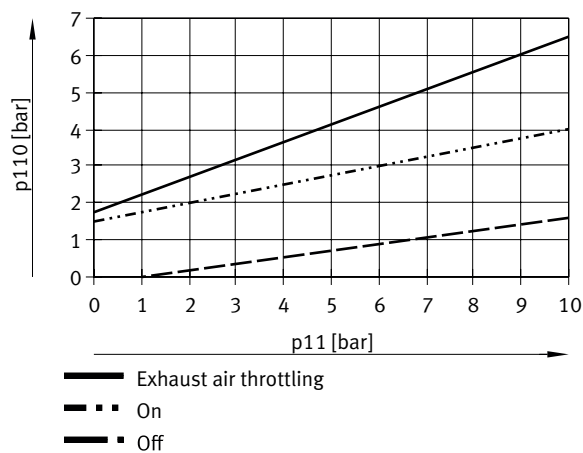
Pneumatic valves, 3/2-way valves, minimum pilot pressure $p_{12}/p_{14}/p_{110}$ as a function of operating pressure p_1/p_{11} , VL/0-3-1/4 - normally open



Pneumatic valves, 3/2-way valves, minimum pilot pressure $p_{12}/p_{14}/p_{110}$ as a function of operating pressure p_1/p_{11} , VL/0-3-1/2 - normally closed

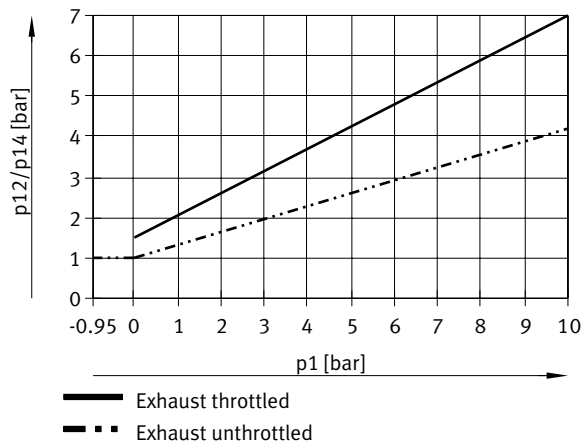


Pneumatic valves, 3/2-way valves, minimum pilot pressure $p_{12}/p_{14}/p_{110}$ as a function of operating pressure p_1/p_{11} , VL/0-3-1/2 - normally open

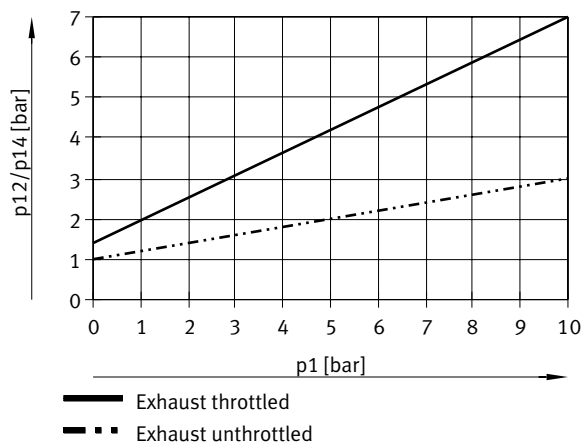


Datasheet

Pneumatic valves, 3/2-way valves, minimum pilot pressure $p_{12}/p_{14}/p_{110}$ as a function of operating pressure p_1/p_{11} , VL/0-3-3/4 - normally closed



Pneumatic valves, 3/2-way valves, minimum pilot pressure $p_{12}/p_{14}/p_{110}$ as a function of operating pressure p_1/p_{11} , VL/0-3-3/4 - normally open



Pneumatic valves, 5/2-way valves, general technical data

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Valve function	5/2-way, single solenoid		
Design	Poppet seat		
lap	Underlap		
Sealing principle	Soft		
Type of actuation	Pneumatic		
Type of reset	Mechanical spring		
Type of piloting	Direct		
Pilot air supply	External		
Flow direction	Non-reversible		
Exhaust-air function	Can be throttled		
Manual override	–		None
Type of mounting	Either:, On manifold rail, On PR rail, With through-hole		Either:, On manifold rail, With through-hole
Mounting position	Any		
Breather connection	M3		
Pilot air port 12	G1/8	–	
b value	–		0.32
C value	–		17.65 l/sbar
Nominal size	5 mm	7 mm	14 mm
Standard nominal flow rate (standardised to DIN 1343)	500 l/min	800 l/min	3,700 l/min
Product weight	220 g		1,070 g

Datasheet

Pneumatic valves, 5/2-way valves, safety characteristics

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Max. switching frequency	12	–	–
Max. positive test pulse with 0 signal	2,200	–	–
Max. negative test pulse with 1 signal	3,700	–	–

Pneumatic valves, 5/2-way valves, operating and environmental conditions

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
Pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure	0 ... 1 MPa	0 ... 0.8 MPa	0 ... 1 MPa
Operating pressure	0 ... 10 bar	0 ... 8 bar	0 ... 10 bar
Pilot pressure	0.12 ... 1 MPa		
Pilot pressure	1.2 ... 10 bar		
Ambient temperature	-10 ... 60°C		
Media temperature	-10 ... 60°C		
Storage temperature	-20 ... 60°C		
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress		
LABS (PWIS) conformity	VDMA24364-B1/B2-L		

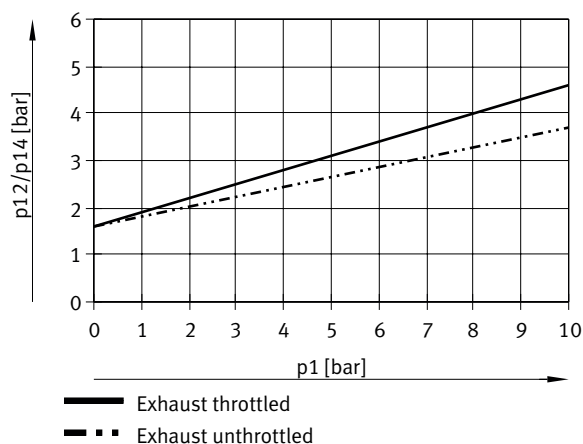
1) More information www.festo.com/x/topic/crc

Pneumatic valves, 5/2-way valves, valve switching times

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Switching time on	5 ms	7 ms	3 ms
Switching time off	16 ms	11 ms	27 ms

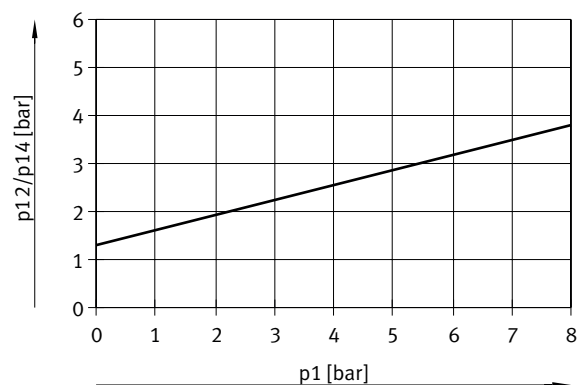
Pneumatic valves, 5/2-way valves, materials

Material housing	Die-cast aluminium
Material seals	NBR, TPE-U(PU)
Note on materials	RoHS compliant

Pneumatic valves, 5/2-way valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 , VL-5-1/8

Datasheet

Pneumatic valves, 5/2-way valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 , VL-5-1/4



Pneumatic valves, 5/2-way valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 , VL-5-1/2



Pneumatic valves, 5/2-way valves, impulse valves, general technical data

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Valve function	5/2-way, double solenoid, 5/2-way, bistable, dominant		5/2-way, double solenoid
Design	Poppet seat		
lap	Underlap		
Sealing principle	Soft		
Type of actuation	Pneumatic		
Type of piloting	Direct		
Pilot air supply	External		
Flow direction	Non-reversible		
Exhaust-air function	Can be throttled		
Manual override	—		Detenting
Type of mounting	Either:, On manifold rail, With through-hole		
Mounting position	Any		
Breather connection	M3		
b value	—		0.3
Nominal size	5 mm	7 mm	14 mm
Standard nominal flow rate (standardised to DIN 1343)	600 l/min	1,100 l/min	4,500 l/min
Product weight	330 g		1,130 g

Datasheet

Pneumatic valves, 5/2-way valves, double pilot valves, safety characteristics

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Max. switching frequency	12 Hz		
Max. positive test pulse with 0 signal	2,200	–	
Max. negative test pulse with 1 signal	3,700	–	

Pneumatic valves, 5/2-way valves, double pilot valves, operating and environmental conditions

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
Pilot medium	–	Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure	0 ... 1 MPa	0 ... 0.8 MPa	0 ... 1 MPa
Operating pressure	0 ... 10 bar	0 ... 8 bar	0 ... 10 bar
Pilot pressure	0.12 ... 1 MPa		
Pilot pressure	1.2 ... 10 bar		
Ambient temperature	-10 ... 60°C		
Media temperature	-10 ... 60°C		
Storage temperature	-20 ... 60°C		
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress		
LABS (PWIS) conformity	VDMA24364-B1/B2-L		

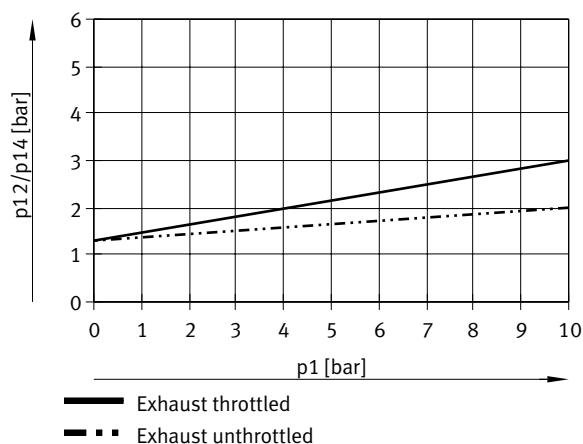
1) More information www.festo.com/x/topic/crc

Pneumatic valves, 5/2-way valves, double pilot valves, valve switching times

Pneumatic connection, port 1	G1/8	G1/4	G1/2
Valve function	5/2-way, double solenoid	5/2-way, bistable, dominant	5/2-way, double solenoid
Switching time reversal	7 ms	12 ms	3 ms

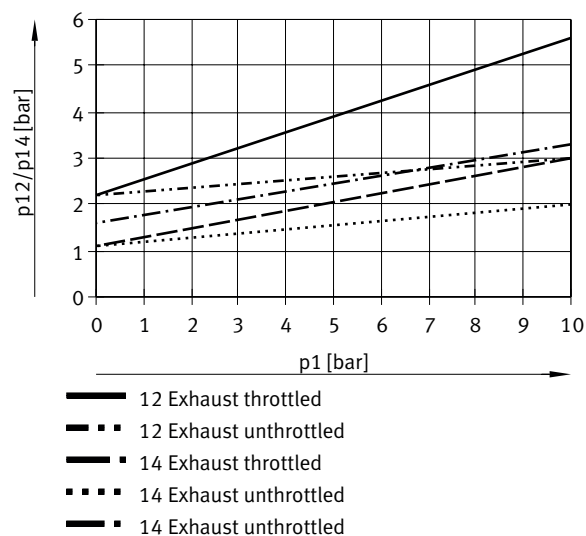
Pneumatic valves, 5/2-way valves, double pilot valves, materials

Material housing	Die-cast aluminium
Material seals	NBR, TPE-U(PU)
Note on materials	RoHS compliant

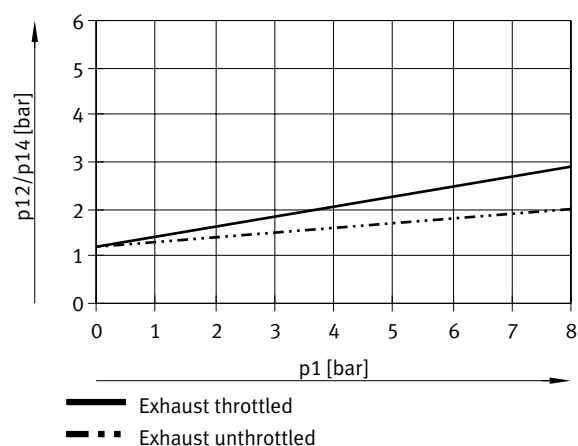
Pneumatic valves, 5/2-way valves, double pilot valves, minimum pilot pressure p₁₂/p₁₄ as a function of operating pressure p₁, JH-5-1/8

Datasheet

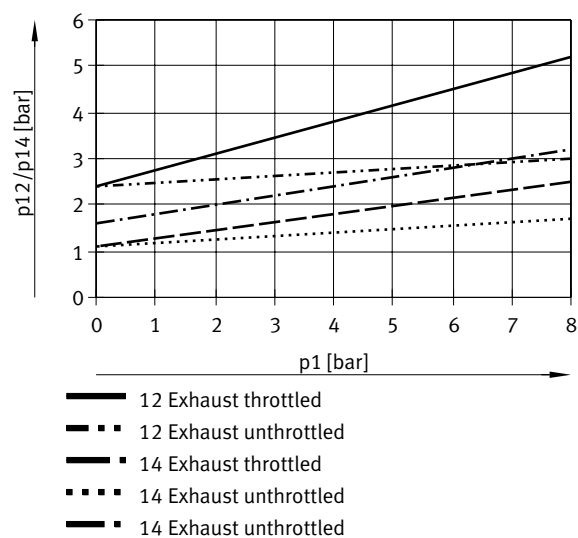
Pneumatic valves, 5/2-way valves, double pilot valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 , JDH-5-1/8



Pneumatic valves, 5/2-way valves, double pilot valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 , JH-5-1/4

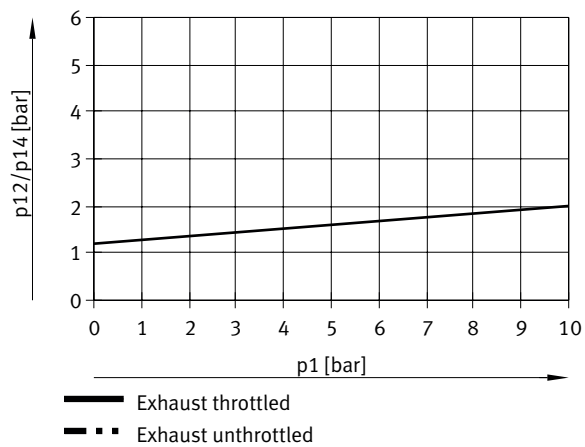


Pneumatic valves, 5/2-way valves, double pilot valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 , JDH-5-1/4



Datasheet

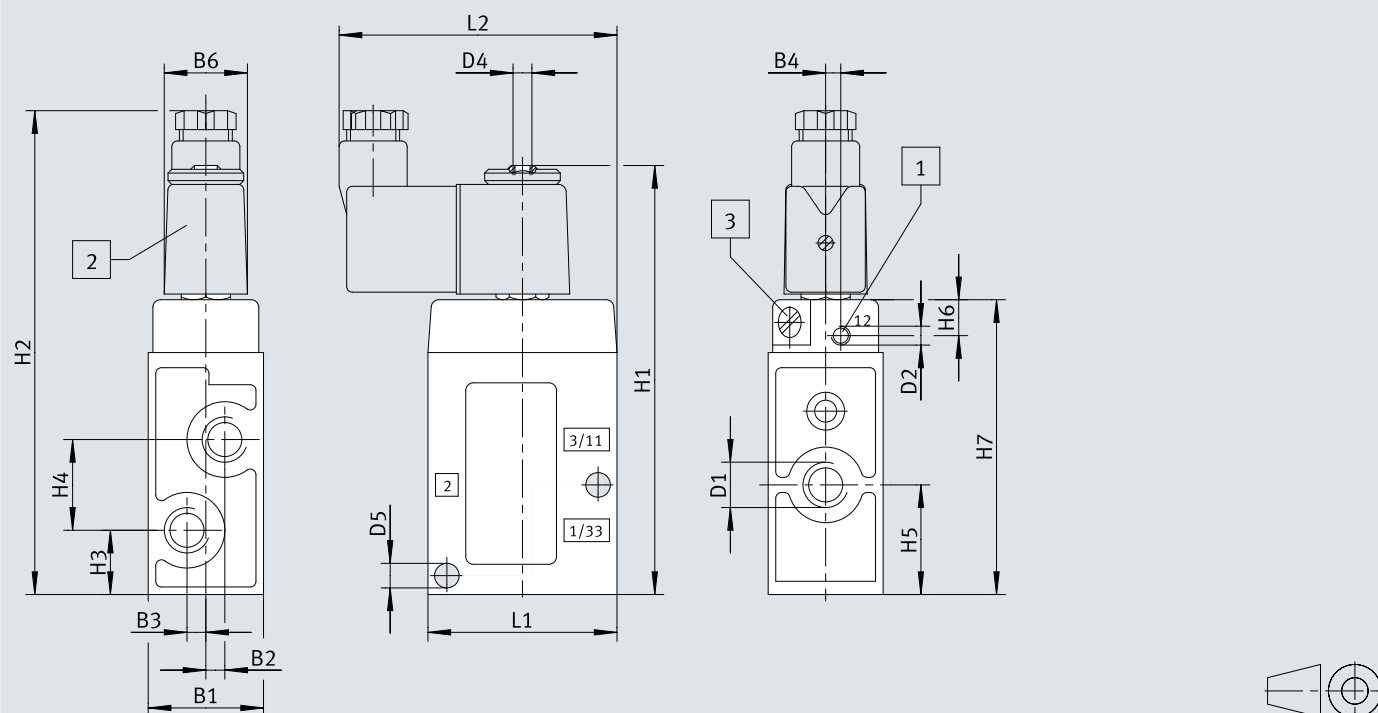
Pneumatic valves, 5/2-way valves, double pilot valves, minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 , JH-5-1/2



Dimensions

Dimensions – Solenoid valves, 3/2-way valves, MFH, MOFH

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[1] Additional connection for external pilot air for MFH-3-... /MOFH-3-...

[2] Solenoid coil can be rotated 360°

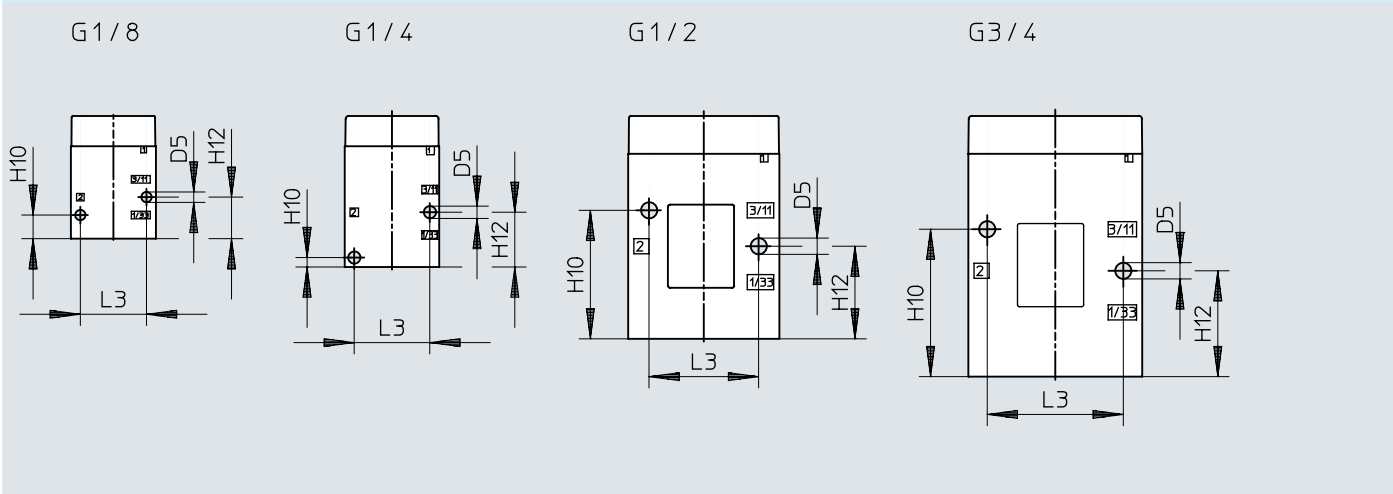
[3] Manual override can be turned 180°

	B1	B2	B3	B4	B6	D1	D2	D4	D5 Ø
MFH-3-1/8	26 +0,2	3,5	3,5	–	22	G1/8	–	M5	5,5
MOFH-3-1/8				2,7			M5		
MFH-3-1/8-S									
MFH-3-1/4	30,4 ±0,15	5	5	–		G1/4	–	M5	6,5
MOFH-3-1/4				4			M5		
MFH-3-1/4-S							30,4		
MFH-3-1/2	52 ±0,15	8	8	–		G1/2	–	M5	8,6
MOFH-3-1/2							G1/8		
MFH-3-1/2-S									
MFH-3-3/4	68 ±0,15	8	8	–		G3/4	–	M5	8,6
MOFH-3-3/4							G1/8		
MFH-3-3/4-S									

	H1	H2	H3	H4	H5	H6	H7	L1	L2
MFH-3-1/8	97	115	12,5	19 ±0,15	22	–	63	45 ±0,15	71
MOFH-3-1/8						9,5			
MFH-3-1/8-S									
MFH-3-1/4	112	130	17	24 ±0,15	29	–	78	50 ±0,15	73,5
MOFH-3-1/4				24		9,5		50	
MFH-3-1/4-S									
MFH-3-1/2	151	168,8	30 ±0,15	38 ±0,15	49 ±0,15	–	117	80 ±0,2	88,5
MOFH-3-1/2									
MFH-3-1/2-S			30	38	49	10,5		80	
MFH-3-3/4	171	189	34	44 ±0,15	56	–	137	92 ±0,2	94,5
MOFH-3-3/4				44		11		92	
MFH-3-3/4-S									

Dimensions

Dimensions – Solenoid valves, 3/2-way valves, mounting pattern [Download CAD data](http://www.festo.com) www.festo.com

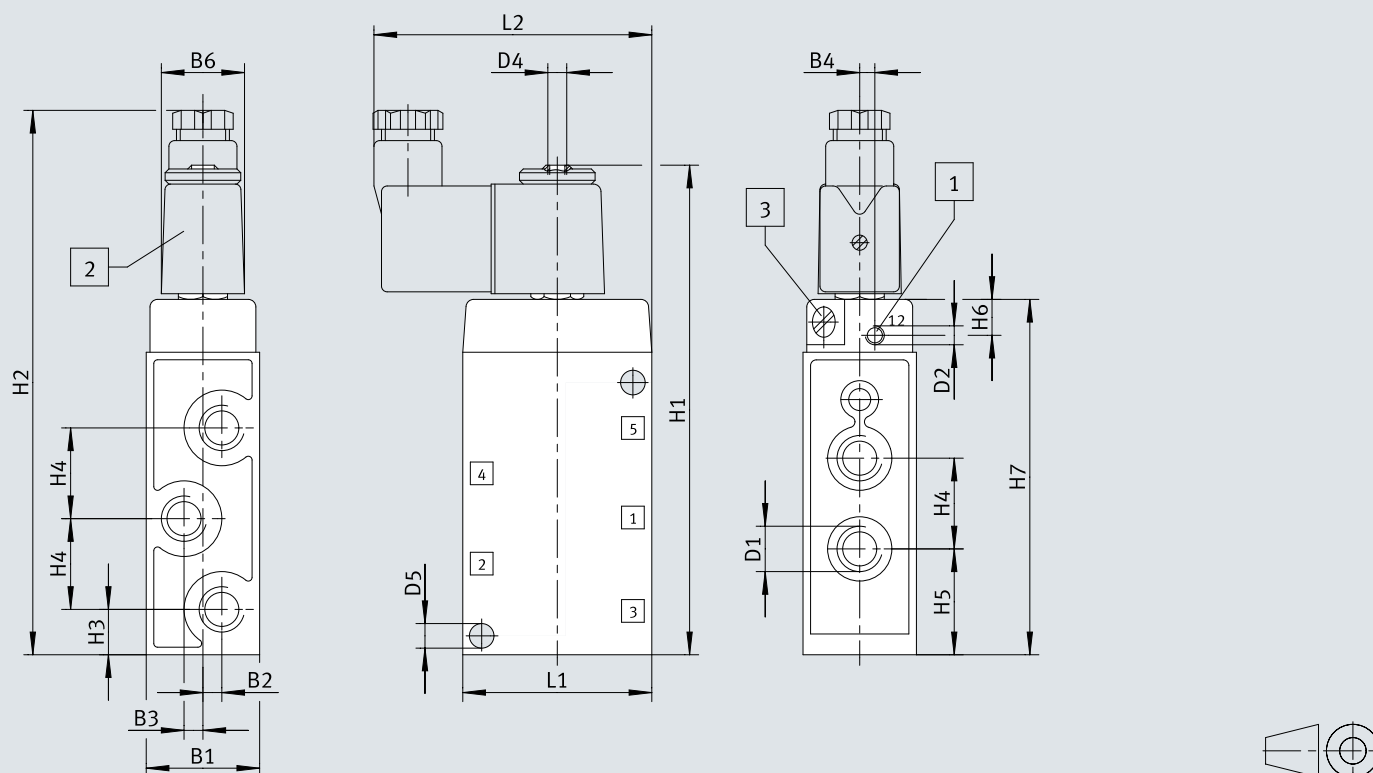


	D5 ø	H10	H12	L3
MFH-3-1/8	5,5	12,5	22	35 ±0,15
MOFH-3-1/8				
MFH-3-1/8-S				
MFH-3-1/4	6,5	5	29	40 ±0,15
MOFH-3-1/4				
MFH-3-1/4-S				
MFH-3-1/2	8,6	68	49	58 ±0,2
MOFH-3-1/2				
MFH-3-1/2-S				
MFH-3-3/4	8,6	78	56	72 ±0,2
MOFH-3-3/4				
MFH-3-3/4-S				

Dimensions

Dimensions – Solenoid valves, 5/2-way valves, MFH

Download CAD data www.festo.com



[1] Additional connection for external pilot air with MFH-5-...-S

[2] Solenoid coil can be rotated 360°

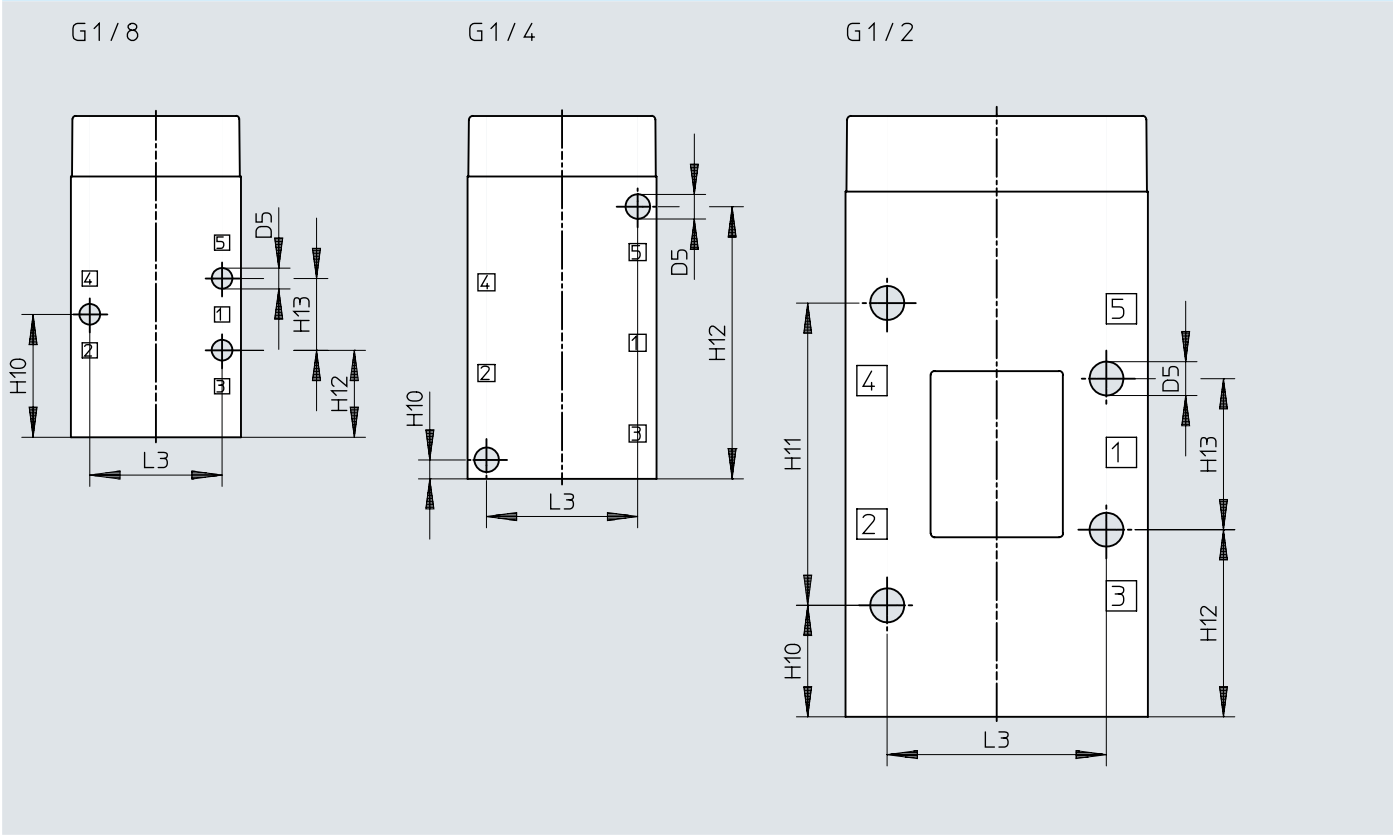
[3] Manual override can be turned 180°

	B1	B2	B3	B4	B6	D1	D2	D4	D5 Ø
MFH-5-1/8	26 ±0,2	3,5 ±0,15	3,5 ±0,15	–	22	G1/8	M5	M5	5,5
MFH-5-1/8-S		3,5	3,5	2,7					5,5 – 6,2
MFH-5-1/4	30,4 ±0,1	–	5 ±0,15	–		G1/4	M5		6,5 ±0,14
MFH-5-1/4-S				4					min. 6,5
MFH-5-1/2	52 ±0,15	–	8	–		G1/2	G1/8		8,5
MFH-5-1/2-S									

	H1	H2	H3	H4	H5	H6	H7	L1	L2
MFH-5-1/8	117	131	13,5	19	23	–	83	45 ±0,15	71
MFH-5-1/8-S		135		19 ±0,15		9,5			71,5
MFH-5-1/4	128	145	12	24 ±0,15	28 ±0,1/-0,2	–	94	50 ±0,4/-0,2	73,5
MFH-5-1/4-S						9,5			
MFH-5-1/2	192	209,8	32 ±0,15	38 ±0,15	51 ±0,15	–	158	80 ±0,4/-0,2	87,5
MFH-5-1/2-S						10,5			

Dimensions

Dimensions – Solenoid valves, 5/2-way valves, mounting pattern Download CAD data www.festo.com

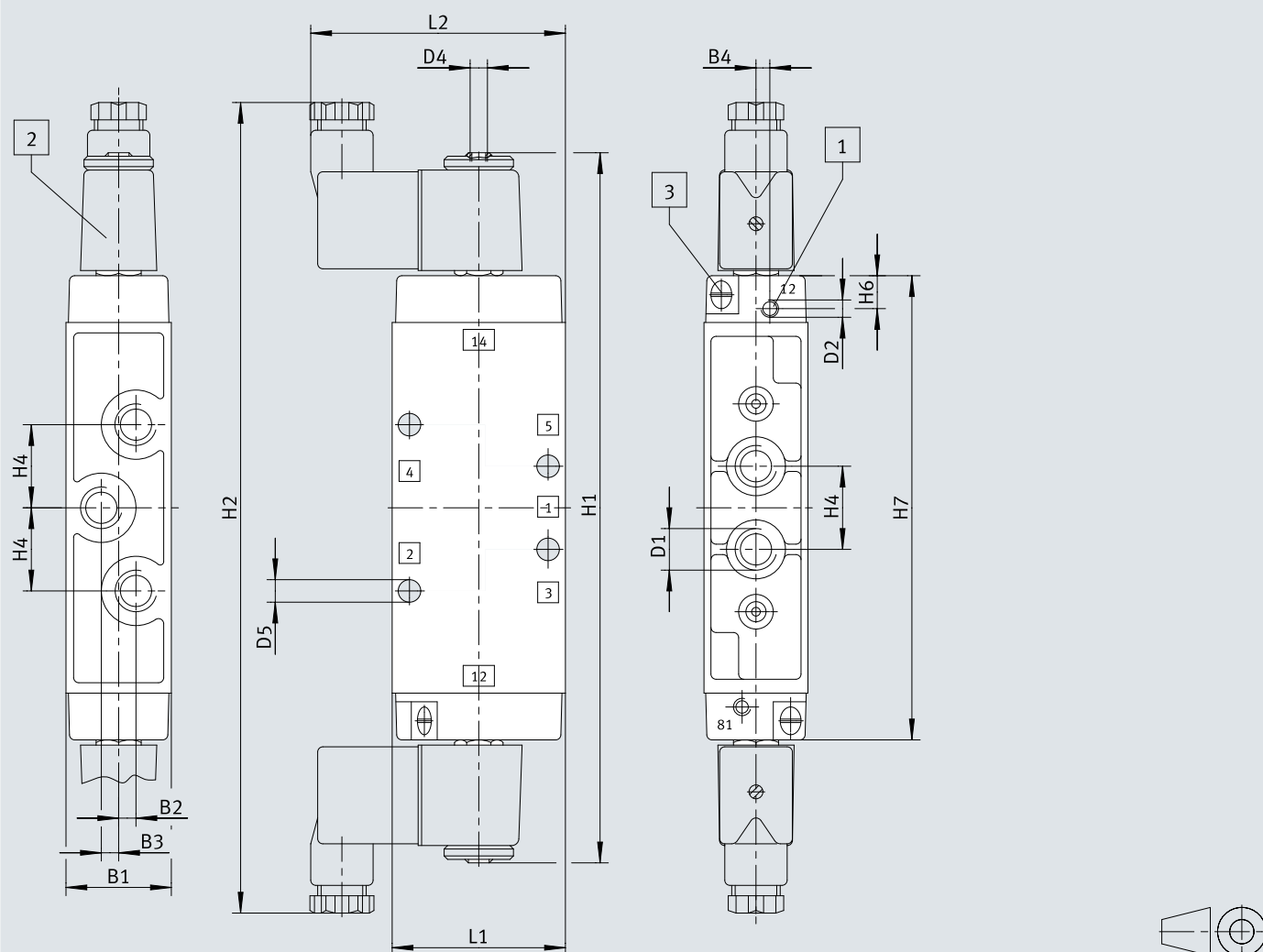


	D5 ø	H10	H11	H12	H13	L3
MFH-5-1/8	5,5	32,5	-	23	19 ±0,15	35 ±0,15
MFH-5-1/8-S	5,5 – 6,2					
MFH-5-1/4	6,5 ±0,14	5	-	72	-	40 ±0,15
MFH-5-1/4-S	min. 6,5					
MFH-5-1/2	8,5	29,5	80 ±0,15	49,5	40 ±0,1	58 ±0,15
MFH-5-1/2-S						

Dimensions

Dimensions – Solenoid valves, 5/2-way valves, solenoid double pilot valves, JMFH, JMFDH

Download CAD data www.festo.com



- [1] Additional connection for external pilot air with JMF...H-5-...-S
- [2] Solenoid coil can be rotated 360°
- [3] Manual override can be turned 180°

Dimensions

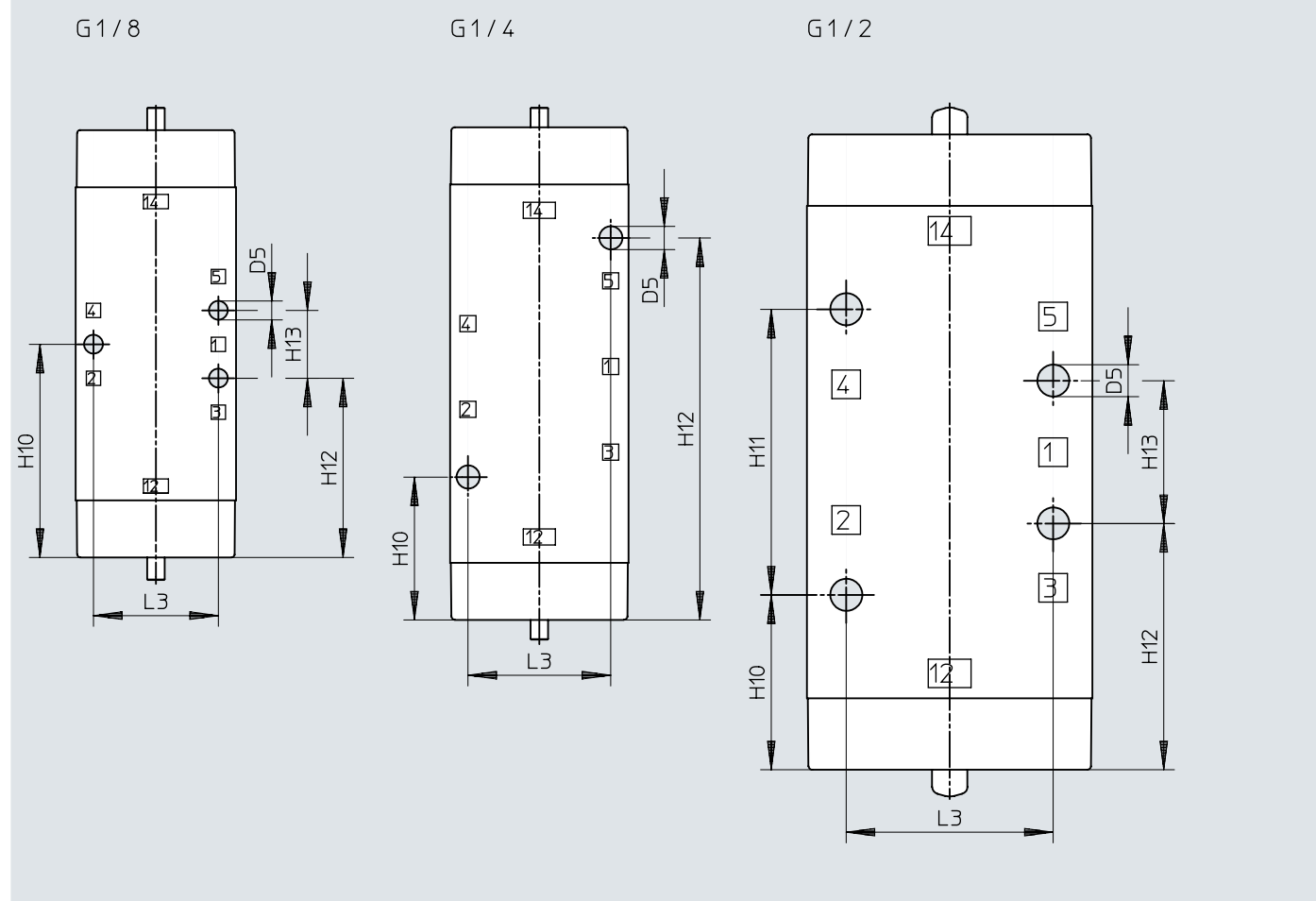
	B1	B2	B3	B4	D1	D2	D4	D5 ø
JMFH-5-1/8	26 +0,2	3,5 +0,15	3,5 +0,15	–	G1/8	–	M5	5,5
JMFDH-5-1/8				2,7		M5		
JMFH-5-1/8-S								
JMFH-5-1/4	30,4 ±0,1	–	5	–	G1/4	–	M5	min. 6,5
JMFDH-5-1/4				4		M5		
JMFH-5-1/4-S								
JMFH-5-1/2	52	–	8	–	G1/2	–	M5	9,6 +0,2
JMFH-5-1/2-S	52 ±0,15					G1/8		8,5

	H1	H2	H4	H6	H7	L1	L2
JMFH-5-1/8	184	219	19 ±0,15	–	116,5	45 ±0,15	71,5
JMFDH-5-1/8				9,5			
JMFH-5-1/8-S							
JMFH-5-1/4	202	238	24 -0,3	–	134	50 +0,4/-0,2	74
JMFDH-5-1/4				9,5			
JMFH-5-1/4-S							
JMFH-5-1/2	244	279,6	38	–	176	80	88,5
JMFH-5-1/2-S			38 ±0,1	10,5		80 +0,4/-0,2	87,5

Dimensions

Dimensions – Solenoid valves, 5/2-way valves, solenoid double pilot valves, mounting pattern

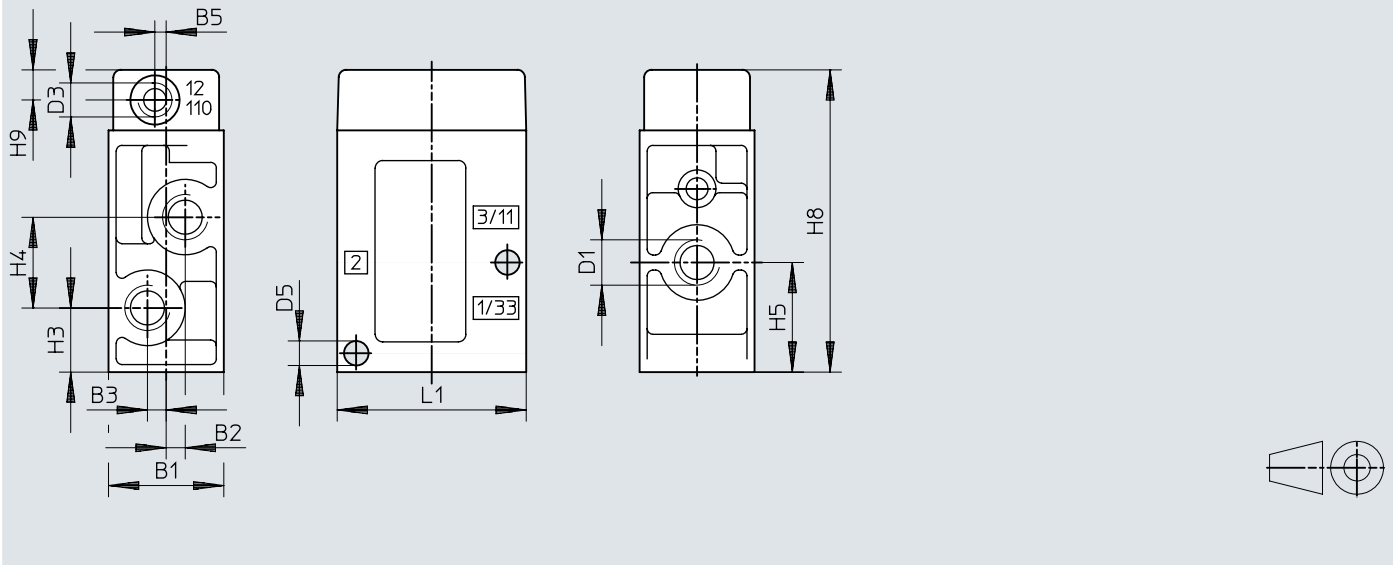
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	D5 ø	H10	H12	H13	L3
JMFH-5-1/8	5,5	19	58,3	–	35
JMFDH-5-1/8					
JMFH-5-1/8-S					
JMFH-5-1/4	min. 6,5	67	67	–	40
JMFDH-5-1/4					
JMFH-5-1/4-S					
JMFH-5-1/2	9,6 +0,2	40	88	80	58
JMFH-5-1/2-S	8,5				

Dimensions

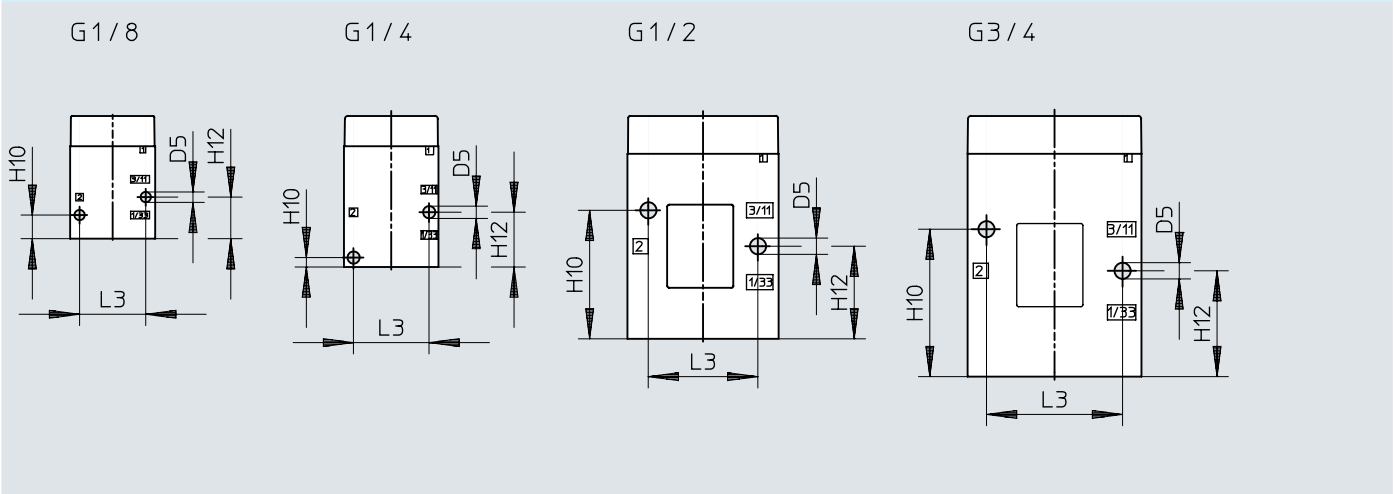
Dimensions – Pneumatic valves, 3/2-way valves, VL/O Download CAD data www.festo.com



	B1	B2	B3	B5	D1	D3	D5 ø	H3	H4	H5	H8	H9	L1
VL/O-3-1/8	26	3,5	3,5	3	G1/8	G1/8	5,5	12,5	19	22	65	8	45
VL/O-3-1/4	30,4	5	5	–	G1/4	G1/8	6,5	17	24	29	80	8	50
VL/O-3-1/2	52	8	8	–	G1/2	G1/4	8,6	30	38	49	118	10	80
VL/O-3-3/4	68	8	8	–	G3/4	G1/4	8,6	34	44	56	138	10	92

Dimensions

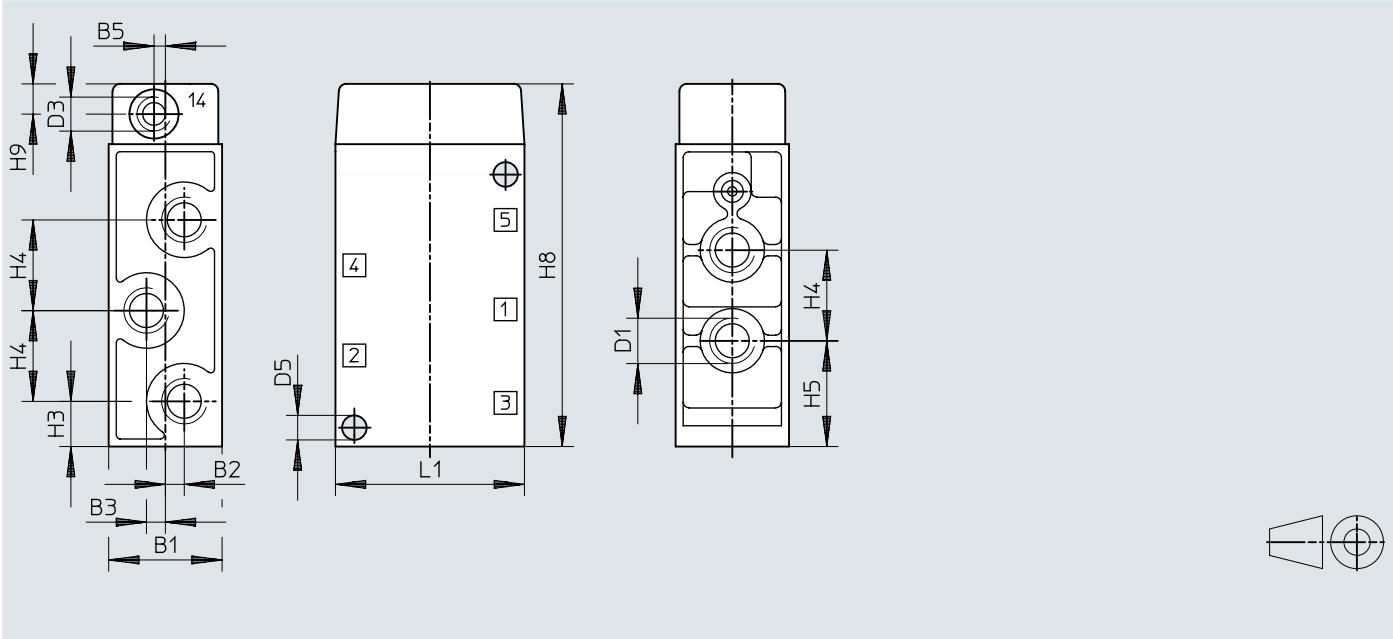
Dimensions – Pneumatic valves, 3/2-way valves, mounting pattern
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	D5 Ø	H10	H12	L3
VL/O-3-1/8	5,5	12,5	22	35 ±0,15
VL/O-3-1/4	6,5	5	29	40 ±0,15
VL/O-3-1/2	8,6	68	49	58 ±0,2
VL/O-3-3/4	8,6	78	56	72 ±0,2

Dimensions

Dimensions – Pneumatic valves, 5/2-way valves, VL Download CAD data www.festo.com

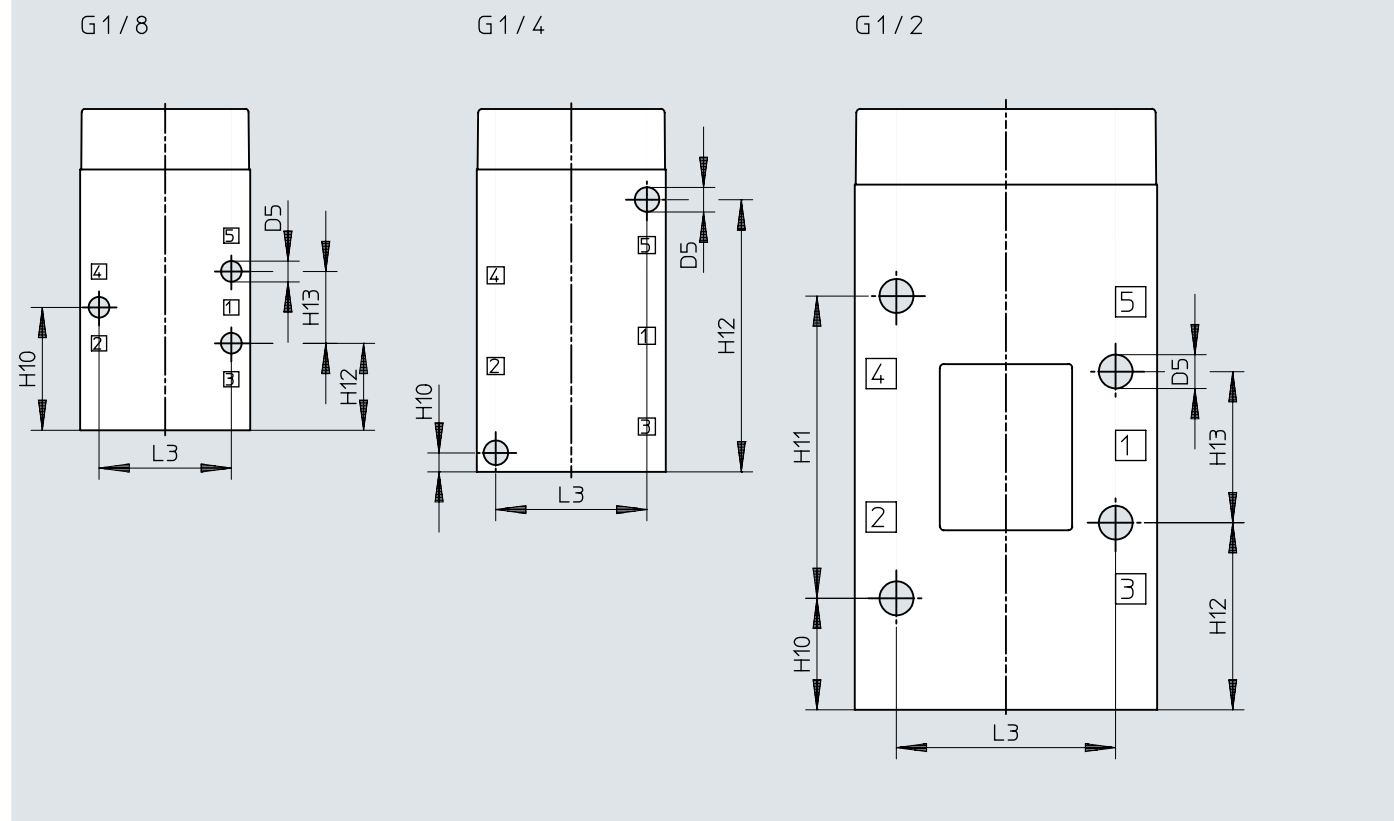


	B1	B2	B3	B5	D1	D3	D5 ø	H3	H4	H5	H8	H9	L1
VL-5-1/8	26	3,5	3,5	3	G1/8	G1/8	5,5	13,5	19	23	85	8	45
VL-5-1/4	30,4 ±0,1	–	5,2	–	G1/4	G1/8	6,5	12	24	28	96	8	50
VL-5-1/2	52	–	8	–	G1/2	G1/4	9	32	38	51	159	10	80

Dimensions

Dimensions – Pneumatic valves, 5/2-way valves, mounting pattern

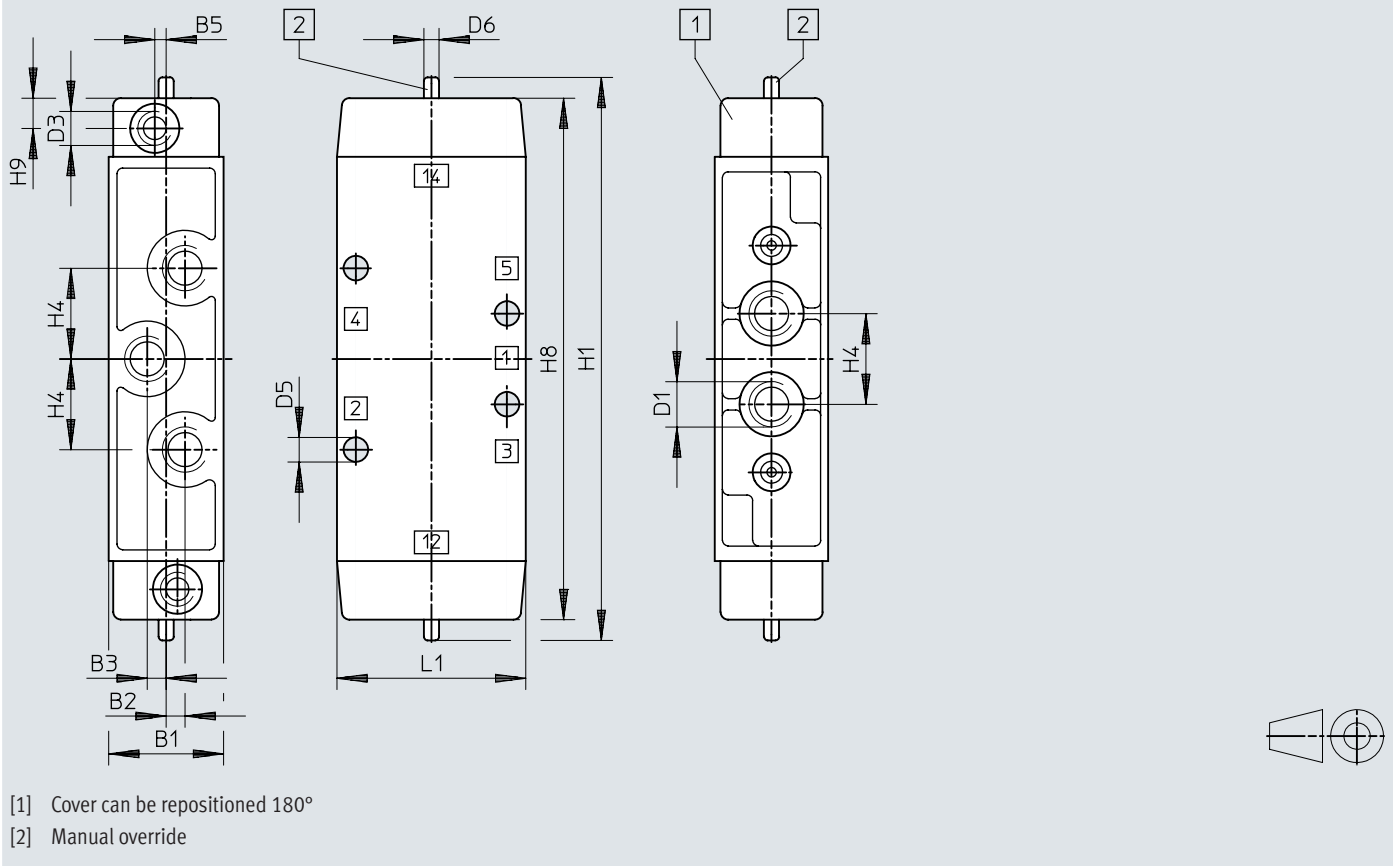
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	D5 ø	H10	H11	H12	H13	L3
VL-5-1/8	5,5	32,5	–	23	19 ±0,15	35 ±0,15
VL-5-1/4	6,5	5	–	72	–	40 ±0,15
VL-5-1/2	9	29,5	80 ±0,15	49,5	40 ±0,1	58 ±0,15

Dimensions

Dimensions – Pneumatic valves, 5/2-way valves, double pilot valves, JH, JDH Download CAD data www.festo.com

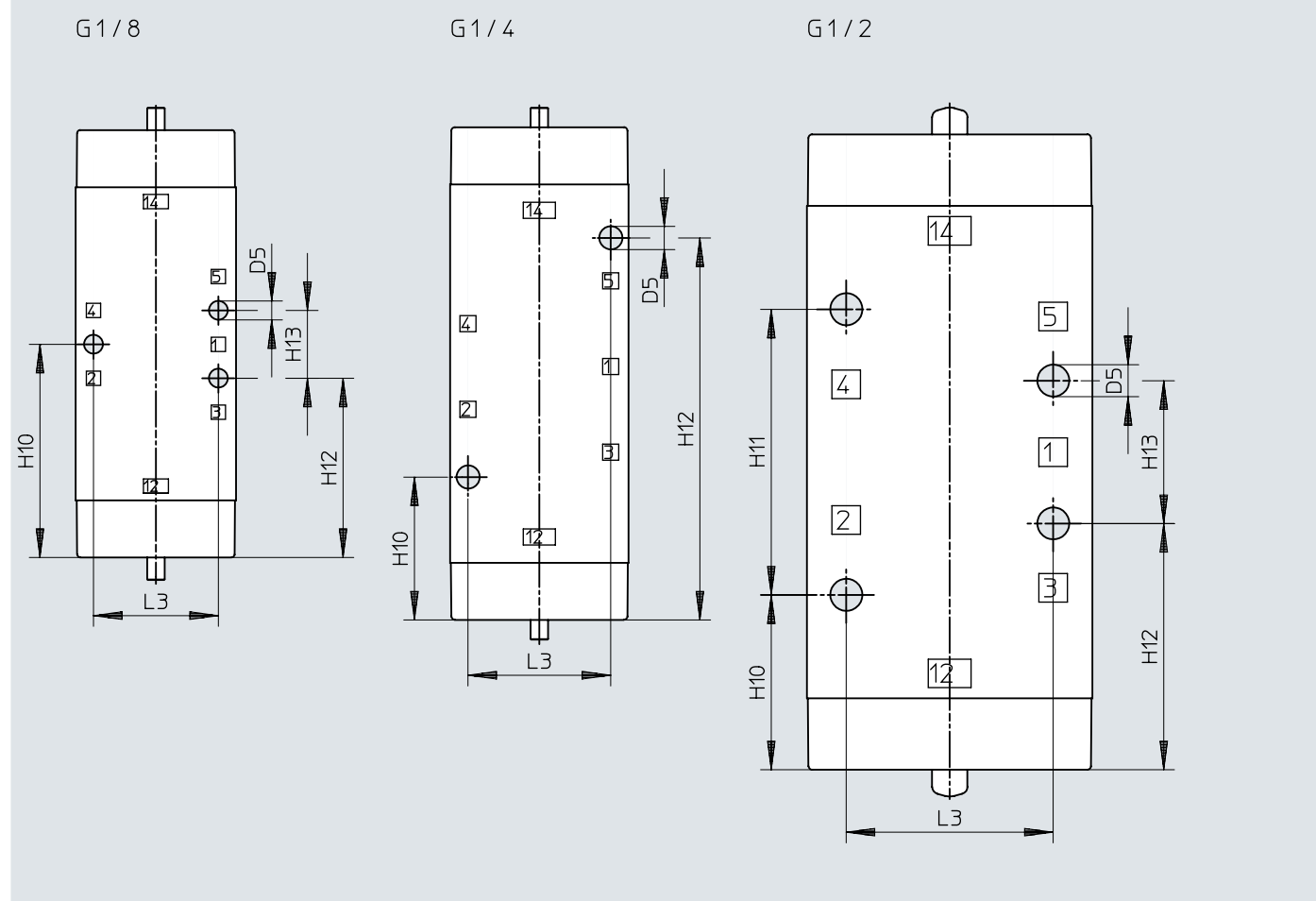


	B1	B2	B3	B5	D1	D3	D5 Ø	D6 Ø	H1	H4	H8	H9	L1
JH-5-1/8	26	3,5	3,5	3	G1/8	G1/8	5,3	5	132	19	120	8	45
JDH-5-1/8													
JH-5-1/4	30,4	–	5	–	G1/4	G1/8	6,5	5	149	24	138	8	50
JDH-5-1/4													
JH-5-1/2	52	–	8	–	G1/2	G1/4	9,6 +0,2	9,9	193	38	178	10	80

Dimensions

Dimensions – Pneumatic valves, 5/2-way valves, double pilot valves, mounting pattern

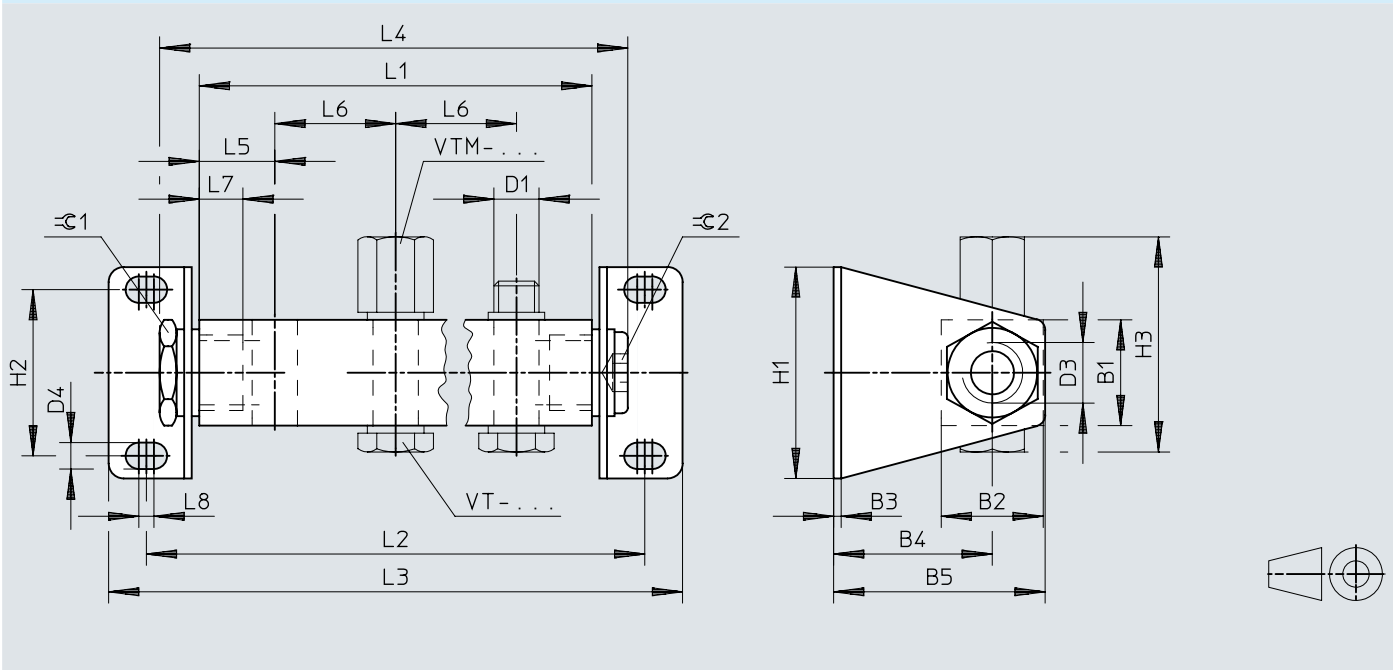
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	D5 ø	H10	H11	H12	H13	L3
JH-5-1/8	5,3	60	–	50,5	19	35
JDH-5-1/8						
JH-5-1/4	6,5	40	–	107	–	40 ±0,2
JDH-5-1/4						
JH-5-1/2	9,6 +0,2	49	80 ±0,15	69	40 ±0,1	58 ±0,15

Dimensions

Dimensions – Manifold rail PAL Download CAD data www.festo.com

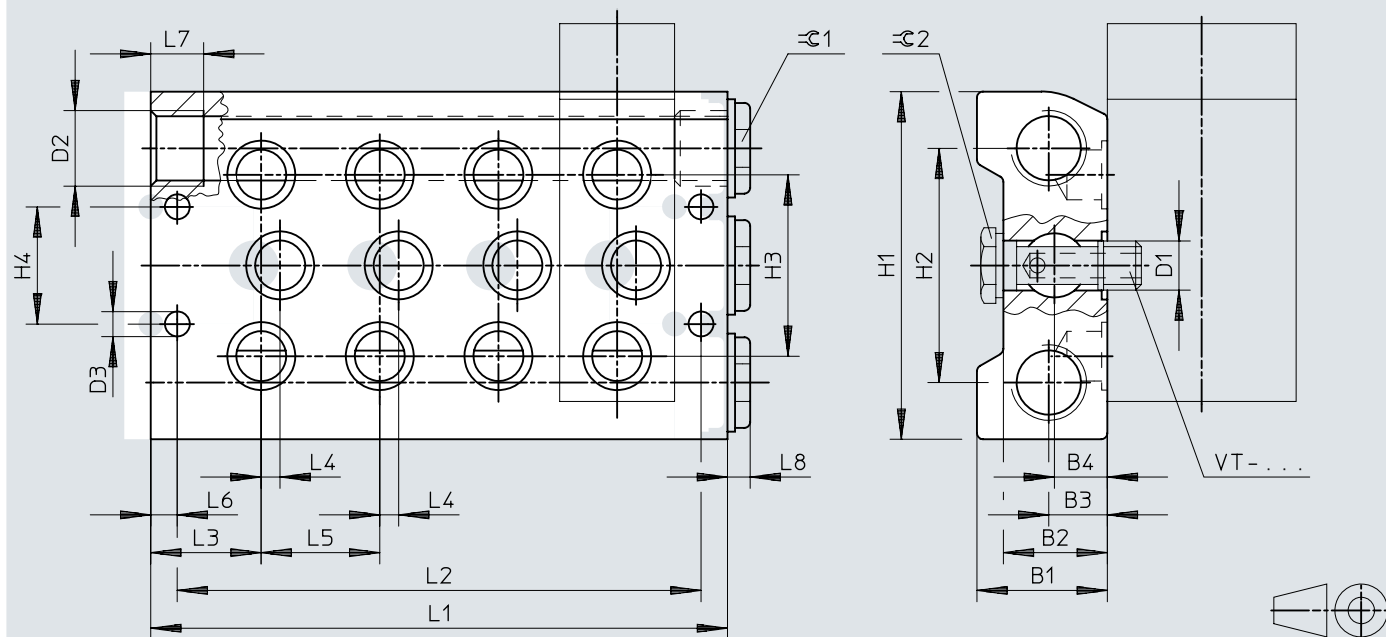


	B1	B2	B3	B4	B5	D1	D3	D4	H1	H2	H3	L5	L6	L7	L8	⌀ 1	⌀ 2
PAL-1/8	20	21	2	33,5	44,5	G1/8	G1/4	5,2	44	32	43	18	34	12	4	19	8
PAL-1/4	28	27	2	42	56	G1/4	G3/8	7	56	44	56	20	32	14	4	24	10
PAL-1/2	40	40	3	73	93	G1/2	G3/4	11	80	60	75	35	69	16	5	36	17

Dimensions

Dimensions – Manifold block PRS

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	B1	B2	B3	B4	D1	D2	D3	H1	H2	H3	H4	L3	L4	L5	L6	L7	L8	±1	±2
PRS-1/8	28,5	22	12,5	10,8	G1/8	G3/8	6,6	80	56	38	28	23,5	7	27	7	12	5	8	14
PRS-1/4	34,5	27,5	14	14	G1/4	G1/2	6,6	92	62	48	31	29,2	5	31,4	7	14	6	10	17

Ordering data

Solenoid valves, 3/2-way valves, MFH-..., without F solenoid coil, internal pilot air supply

	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	535897	MFH-3-1/8-EX
				7802	MFH-3-1/8
	G1/4	G1/4	G1/4	9964	MFH-3-1/4
				535898	MFH-3-1/4-EX
	G1/2	G1/2	G1/2	9857	MFH-3-1/2
				535899	MFH-3-1/2-EX
	G3/4	G3/4	G3/4	536190	MFH-3-3/4-EX
				11967	MFH-3-3/4

Solenoid valves, 3/2-way valves, MOFH-..., without F solenoid coil, internal pilot air supply

	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	7877	MOFH-3-1/8
				535903	MOFH-3-1/8-EX
	G1/4	G1/4	G1/4	7876	MOFH-3-1/4
				535904	MOFH-3-1/4-EX
	G1/2	G1/2	G1/2	535905	MOFH-3-1/2-EX
				7884	MOFH-3-1/2
	G3/4	G3/4	G3/4	11969	MOFH-3-3/4
				536192	MOFH-3-3/4-EX

Solenoid valves, 3/2-way valves, MFH-..., without F solenoid coil, external pilot air supply, reversible (vacuum at port 1 without restrictions, vacuum at port 3 with restrictions)

	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	535900	MFH-3-1/8-S-EX
				7958	MFH-3-1/8-S
	G1/4	G1/4	G1/4	7959	MFH-3-1/4-S
				535901	MFH-3-1/4-S-EX
	G1/2	G1/2	G1/2	7960	MFH-3-1/2-S
				535902	MFH-3-1/2-S-EX
	G3/4	G3/4	G3/4	536191	MFH-3-3/4-S-EX
				11968	MFH-3-3/4-S

Solenoid valves, 5/2-way valves, MFH-..., without F solenoid coil, internal pilot air supply

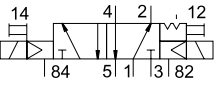
	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	535906	MFH-5-1/8-EX
				9982	MFH-5-1/8
	G1/4	G1/4	G1/4	535907	MFH-5-1/4-EX
				6211	MFH-5-1/4
	G1/2	G1/2	G1/2	6420	MFH-5-1/2
				535908	MFH-5-1/2-EX

Solenoid valves, 5/2-way valves, MFH-..., without F solenoid coil, external pilot air supply

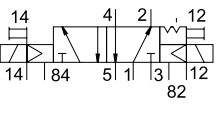
	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	10348	MFH-5-1/8-S
				535909	MFH-5-1/8-S-EX
	G1/4	G1/4	G1/4	535910	MFH-5-1/4-S-EX
				10349	MFH-5-1/4-S
	G1/2	G1/2	G1/2	535911	MFH-5-1/2-S-EX
				35547	MFH-5-1/2-S

Ordering data

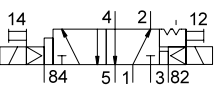
Solenoid valves, 5/2-way valves, double solenoid valves, JMFH-..., without F solenoid coil, internal pilot air supply

	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	8820	JMFH-5-1/8
				535912	JMFH-5-1/8-EX
	G1/4	G1/4	G1/4	535913	JMFH-5-1/4-EX
				10410	JMFH-5-1/4
	G1/2	G1/2	G1/2	535914	JMFH-5-1/2-EX
				10166	JMFH-5-1/2

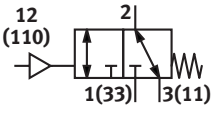
Solenoid valves, 5/2-way valves, double solenoid valves, JMFH-..., without F solenoid coil, external pilot air supply

	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	535915	JMFH-5-1/8-S-EX
				14008	JMFH-5-1/8-S
	G1/4	G1/4	G1/4	14009	JMFH-5-1/4-S
				535916	JMFH-5-1/4-S-EX
	G1/2	G1/2	G1/2	35548	JMFH-5-1/2-S
				535917	JMFH-5-1/2-S-EX

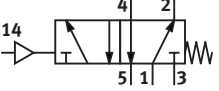
Solenoid valves, 5/2-way valves, double solenoid valves, JMFDH-..., without F solenoid coil, internal pilot air supply, with dominant signal at 14

	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	536193	JMFDH-5-1/8-EX
				8821	JMFDH-5-1/8
	G1/4	G1/4	G1/4	536194	JMFDH-5-1/4-EX
				10411	JMFDH-5-1/4

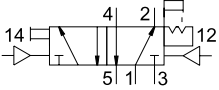
Pneumatic valves, 3/2-way valves, mechanical reset, choice of normally open or closed, reversible (vacuum at port 1 without restrictions, vacuum at port 3 with restrictions), VL/O-...

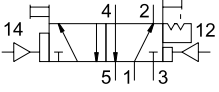
	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	536028	VL/O-3-1/8-B-EX
				7803	VL/O-3-1/8-B
	G1/4	G1/4	G1/4	536029	VL/O-3-1/4-EX
				9984	VL/O-3-1/4
	G1/2	G1/2	G1/2	9983	VL/O-3-1/2
				536030	VL/O-3-1/2-EX
	G3/4	G3/4	G3/4	10049	VL/O-3-3/4
				536031	VL/O-3-3/4-EX

Pneumatic valves, 5/2-way valves, mechanical reset, VL-...

	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	536032	VL-5-1/8-EX
				9764	VL-5-1/8
	G1/4	G1/4	G1/4	536033	VL-5-1/4-EX
				9199	VL-5-1/4
	G1/2	G1/2	G1/2	9445	VL-5-1/2
				536034	VL-5-1/2-EX

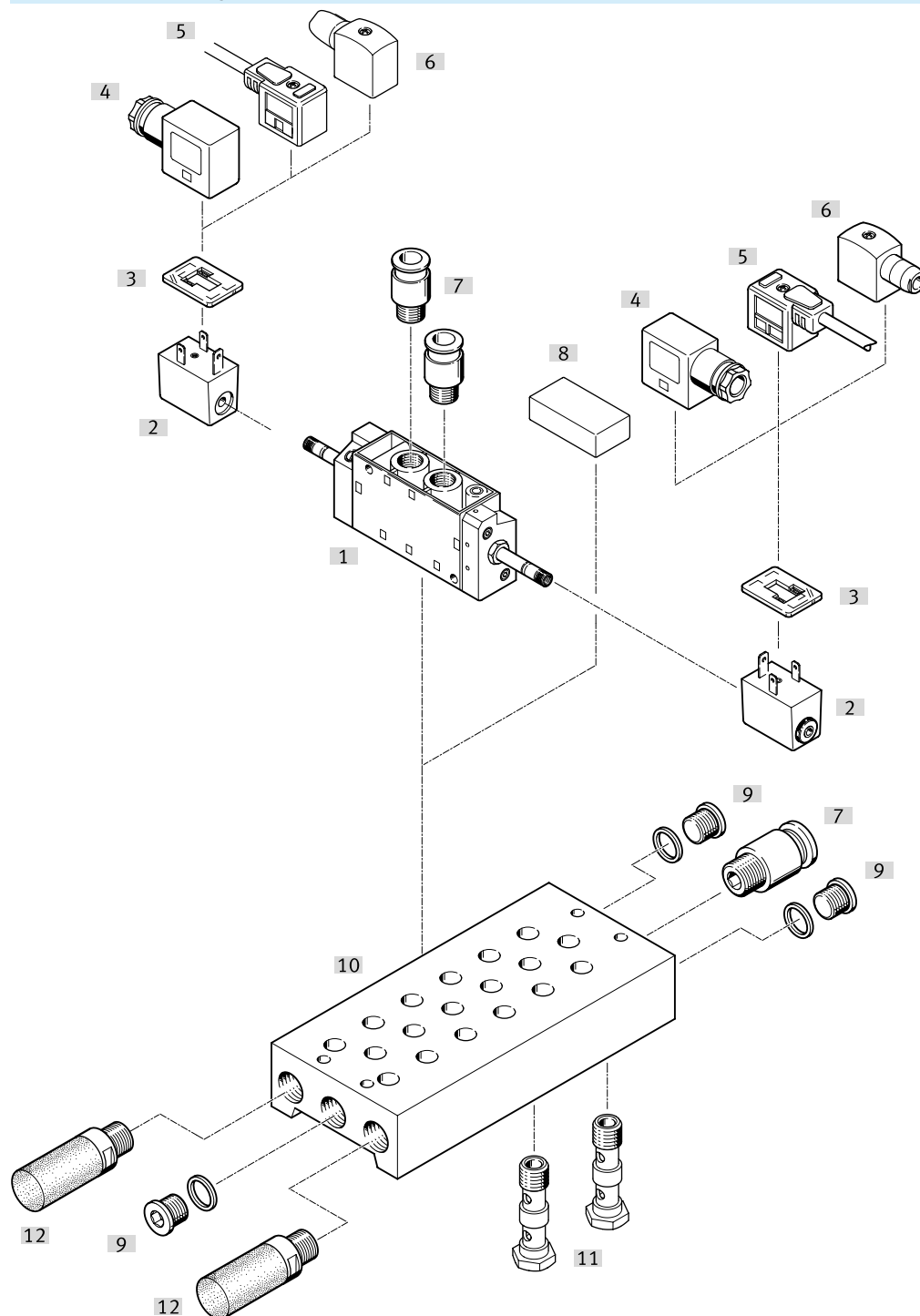
Ordering data

Pneumatic valves, 5/2-way valves, pulse valves, JH-...					
	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	536035	JH-5-1/8-EX
				8823	JH-5-1/8
	G1/4	G1/4	G1/4	536036	JH-5-1/4-EX
				10408	JH-5-1/4
	G1/2	G1/2	G1/2	10165	JH-5-1/2
				536037	JH-5-1/2-EX

Pneumatic valves, 5/2-way valves, double pilot valves, with dominant signal at 14, JDH-...					
	Pneumatic connection, port 1	Pneumatic connection, port 2	Pneumatic connection, port 3	Part no.	Type
	G1/8	G1/8	G1/8	536038	JDH-5-1/8-EX
				8824	JDH-5-1/8
	G1/4	G1/4	G1/4	536039	JDH-5-1/4-EX
				10409	JDH-5-1/4

Peripherals

Solenoid valves, mounting on manifold block



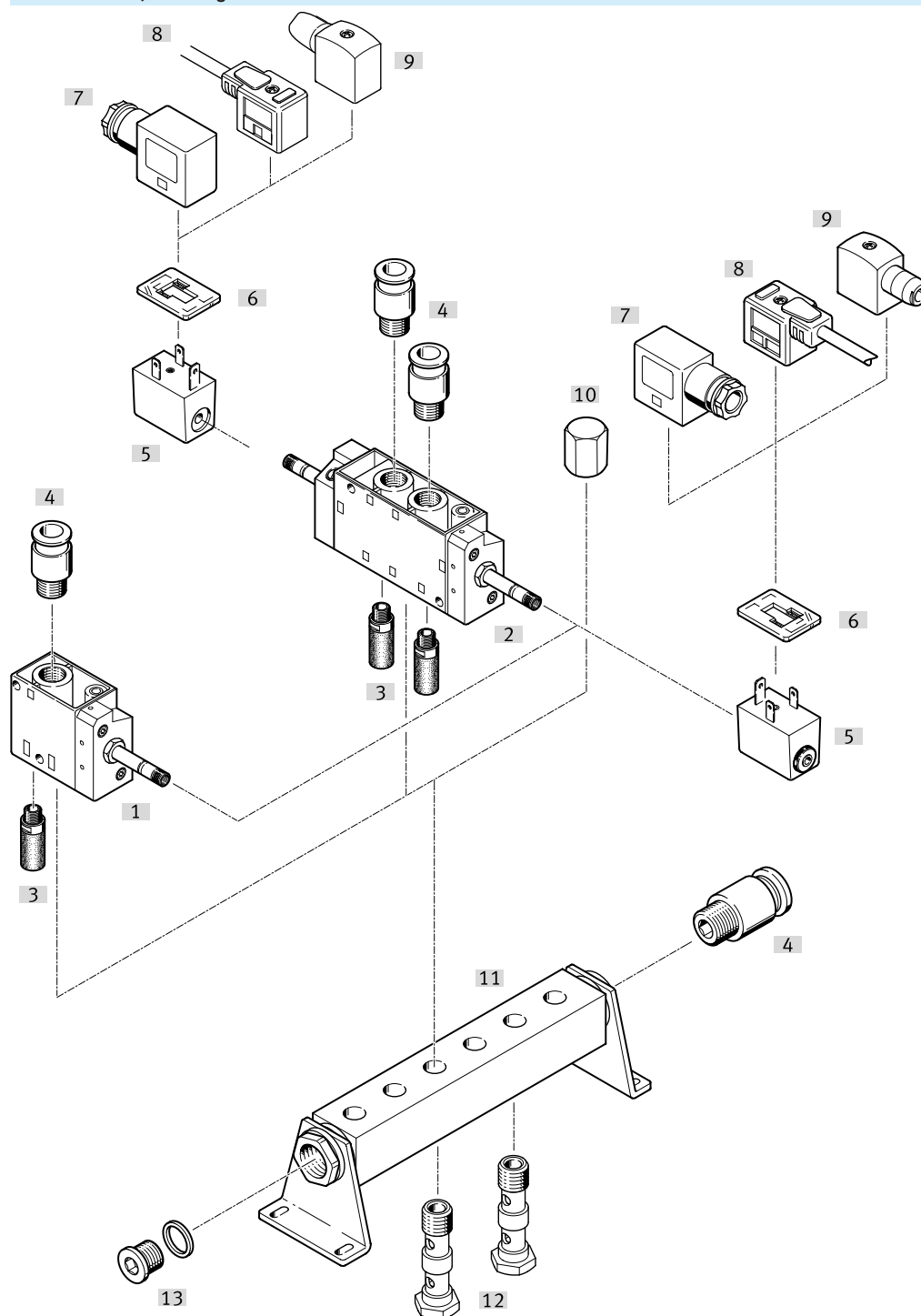
Accessories		→ Link
Type/order code	Description	
[1] Solenoid valve JMFH	For F solenoid coil	jmfh
[2] F solenoid coil MSFG, MSFW	–	46
[3] Illuminating seal M...-LD	For displaying the switching status	47
[4] Plug socket MSSD-F	For valves MFH, JMFH	47
[5] Connecting cable KMF	For valves MFH, JMFH	47
[6] Plug socket MSSD-F-S	For valves MFH, JMFH	
[7] Push-in fitting QS	For connecting tubing with standard O.D	qs
[8] Cover plate PRSB	For covering a vacant position	46
[9] Blanking plug B	3 pieces included in the scope of delivery of the manifold block PRS	blindstopfen

Peripherals

Accessories		→ Link
Type/order code	Description	
[10] Manifold block PRS	–	45
[11] Hollow bolt VT	For compressed air distribution or for separate compressed air supply	46
[12] Silencer	For fitting in exhaust ports	u

Peripherals

Solenoid valves, mounting on manifold rail



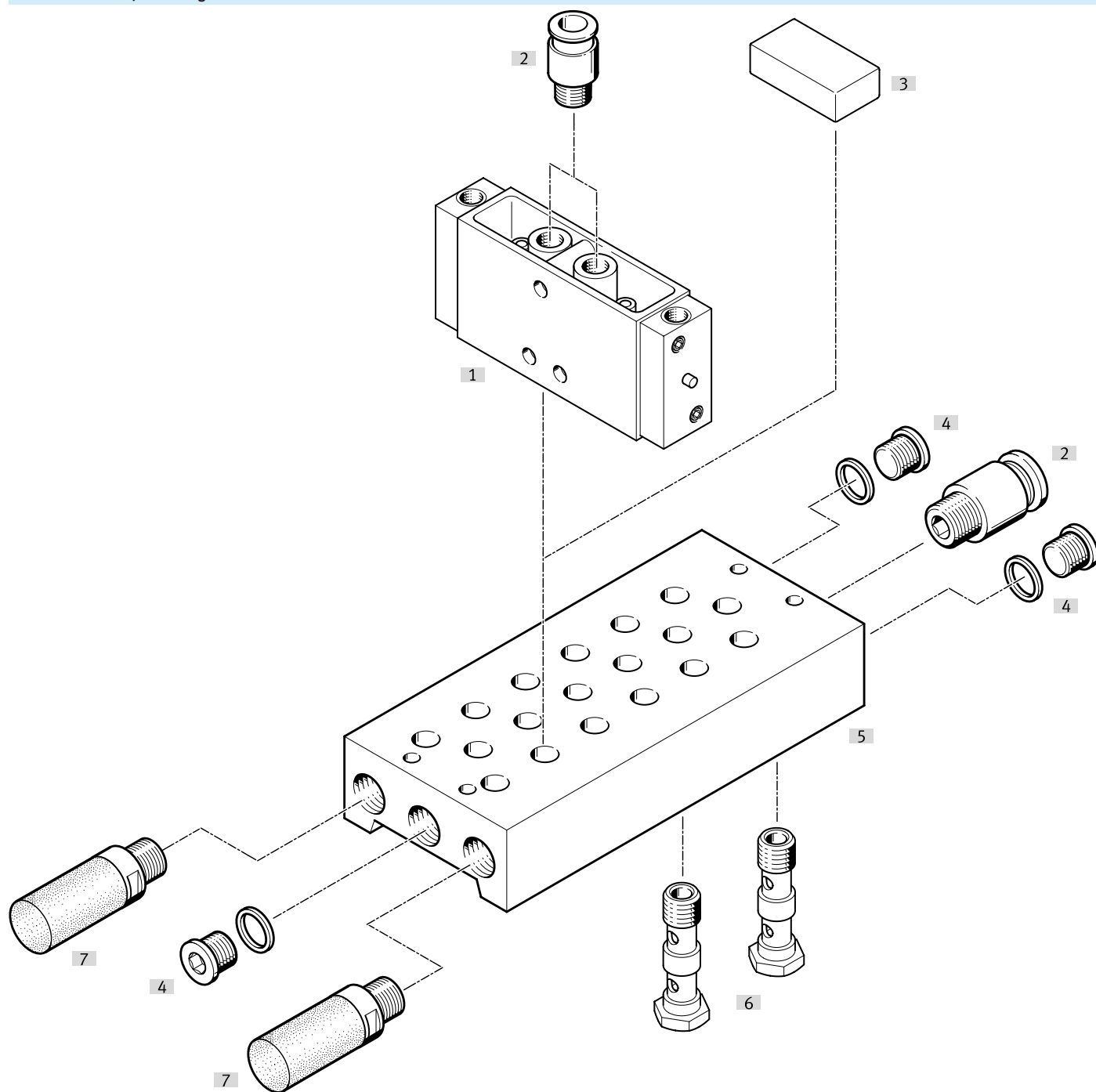
Accessories			→ Link
Type/order code	Description		
[1] Solenoid valve MFH	For F solenoid coil		☞ mfh
[2] Solenoid valve JMFH	For F solenoid coil		☞ jmfh
[3] Silencer	For fitting in exhaust ports		☞ u
[4] Push-in fitting QS	For connecting tubing with standard O.D		☞ qs
[5] F solenoid coil MSFG, MSFW	—		46
[6] Illuminating seal M...-LD	For displaying the switching status		47
[7] Plug socket MSSD-F	—		47
[8] Connecting cable KMF	—		47
[9] Plug socket MSSD-FS	For valves MFH, JMFH		

Peripherals

Accessories		→ Link
Type/order code	Description	
[10] Cap nut VTM	To seal a vacant position	45
[11] Manifold rail PAL	–	45
[12] Hollow bolt VT	For compressed air distribution or for separate compressed air supply	46
[13] Blanking plug B	3 pieces included in the scope of delivery of the manifold block PRS	↗ blindstopfen

Peripherals

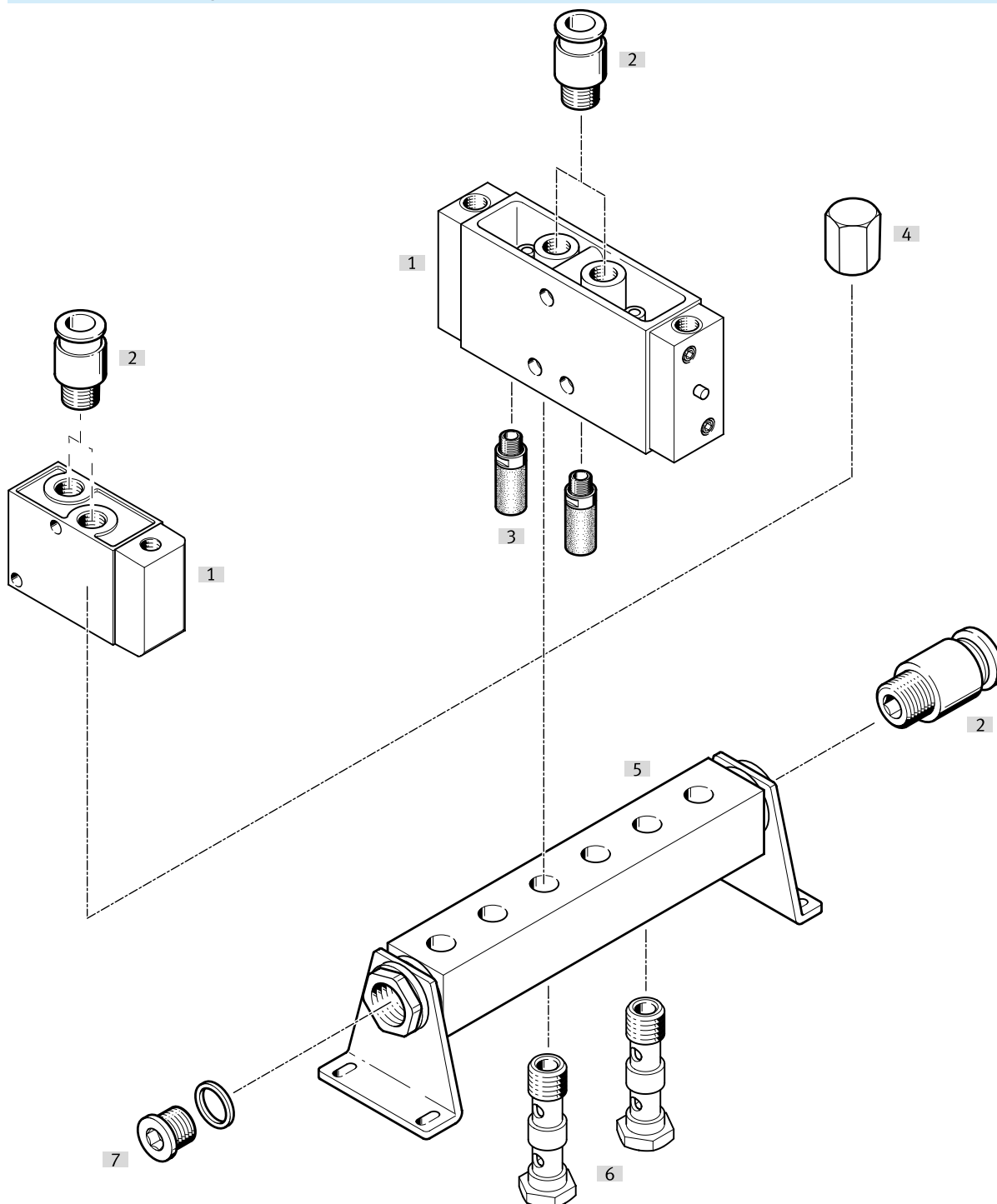
Pneumatic valves, mounting on manifold block



Accessories			→ Link
Type/order code	Description		
[1] Pneumatic valve VL, JH	–		vl, jh
[2] Push-in fitting QS	For connecting tubing with standard O.D		qs
[3] Cover plate PRSB	For covering a vacant position		46
[4] Blanking plug B	3 pieces included in the scope of delivery of the manifold block PRS		blindstopfen
[5] Manifold block PRS	–		45
[6] Hollow bolt VT	For compressed air distribution or for separate compressed air supply		46
[7] Silencer	For fitting in exhaust ports		u

Peripherals

Pneumatic valves, mounting on manifold rail



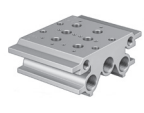
Accessories		→ Link
Type/order code	Description	
[1] Pneumatic valve VL, JH	–	∅ vl, jh
[2] Push-in fitting QS	For connecting tubing with standard O.D	∅ qs
[3] Silencer	For fitting in exhaust ports	∅ u
[4] Cap nut VTM	To seal a vacant position	45
[5] Manifold rail PAL	–	45
[6] Hollow bolt VT	For compressed air distribution or for separate compressed air supply	46
[7] Blanking plug B	3 pieces included in the scope of delivery of the manifold block PRS	∅ blindstopfen

Accessories

Manifold rail PAL					
	Pneumatic connection, port 1	Product weight	Material sub-base	Part no.	Type
	G1/4	145 g	Aluminium, anodised	8601	PAL-1/8-2
		170 g		8602	PAL-1/8-3
		190 g		8603	PAL-1/8-4
		215 g		8604	PAL-1/8-5
		240 g		9767	PAL-1/8-6
	G3/8	330 g	Aluminium	9188	PAL-5-1/4-2
		405 g		9189	PAL-5-1/4-3
		480 g		9190	PAL-5-1/4-4
		555 g		9191	PAL-5-1/4-5
		630 g		9192	PAL-5-1/4-6
	G3/4	770 g	Aluminium, anodised	9492	PAL-1/2-2
		915 g		9493	PAL-1/2-3
		1,060 g		9494	PAL-1/2-4
		1,220 g		9495	PAL-1/2-5
		1,370 g		9496	PAL-1/2-6

Hollow bolt VT for manifold rail PAL					
	Pneumatic connection, port 1	Pneumatic connection, port 2	Material hollow bolt	Part no.	Type
			Anodised aluminium	5928	VT-1/8-1
				9986	VT-1/2
			Chromated steel	8626	VT-1/8
	Male thread G1/4	For barbed fitting inside diameter of 4 mm with nut For barbed fitting inside diameter of 6 mm with nut		206147	VT-1/4-2

Cap nut VTM for closing off reserve positions					
	LABS (PWIS) conformity			Part no.	Type
	VDMA24364-B1/B2-L			9768	VTM-1/8
				9987	VTM-1/2
				3099	VTM-1/4

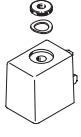
Manifold block PRS					
	Pneumatic connection, port 1	Product weight	Material sub-base	Part no.	Type
	G3/8	360 g	Aluminium	11898	PRS-1/8-2-B
		460 g		11899	PRS-1/8-3-B
		625 g		11900	PRS-1/8-4-B
		650 g		11901	PRS-1/8-5-B
		750 g		11902	PRS-1/8-6-B
	G1/2	590 g		10185	PRS-1/4-2
		750 g		10186	PRS-1/4-3
		900 g		10187	PRS-1/4-4
		1,070 g		10188	PRS-1/4-5
		1,230 g		10189	PRS-1/4-6

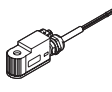
Accessories

Hollow bolt VT for manifold block PRS			
	Material hollow bolt	Part no.	Type
	Chromated steel	9499	VT-1/4-PRS
		11539	VT-1/8-PRSK

Cover plate PRSB for closing off reserve spaces				
	Material sub-base	Product weight	Part no.	Type
	Aluminium	55 g	11687	PRSB-1/8
		80 g	11688	PRSB-1/4

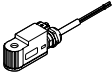
Hollow bolt VT for separate compressed air supply at the valve			
	Material hollow bolt	Part no.	Type
	Chromated steel	12635	VT-1/4-AJ-P
		12910	VT-1/8-AJS-P
		12634	VT-1/8-AJK-P

F solenoid coils, without plug socket					
	Characteristic coil data	Explosion ignition protection type for gas	Explosion ignition protection type for dust	Part no.	Type
	110 V AC: 50/60 Hz, pick-up power 9.0 VA, holding power 7.0 VA	Ex nA IIC T4 X Gc	Ex tc IIIC T130°C X Dc IP65	34420	MSFW-110-50/60-OD
				536933	MSFW-110-50/60-EX
	12 V DC: 4.1 W	Ex nA IIC T4 X Gc	Ex tc IIIC T130°C X Dc IP65	34410	MSFG-12-OD
	230 V AC: 50/60 Hz, pick-up power 9.0 VA, holding power 7.0 VA			34422	MSFW-230-50/60-OD
	240 V AC: 50/60 Hz, pick-up power 9.0 VA, holding power 7.0 VA	Ex nA IIC T4 X Gc	Ex tc IIIC T130°C X Dc IP65	536934	MSFW-230-50/60-EX
				34424	MSFW-240-50/60-OD
	24 V AC: 50/60 Hz, pick-up power 9.0 VA, holding power 7.0 VA	Ex nA IIC T4 X Gc	Ex tc IIIC T130°C X Dc IP65	34415	MSFW-24-50/60-OD
	24 V DC: 4.5 W, 42 V AC: 50/60 Hz, pick-up power 9.0 VA, holding power 7.0 VA			536932	MSFW-24-50/60-EX
	24 V DC: 4.5 W	Ex nA IIC T4 X Gc	Ex tc IIIC T130°C X Dc IP65	34411	MSFG-24/42-50/60-OD
	42 V DC: 5.5 W			536931	MSFG-24-EX
	48 V AC: 50/60 Hz, pick-up power 9.0 VA, holding power 7.0 VA			34413	MSFG-42-OD
				34418	MSFW-48-50/60-OD

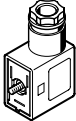
F solenoid coils, cable with open end, 3-core						
	Characteristic coil data	Explosion ignition protection type for gas	Explosion ignition protection type for dust	Cable length	Part no.	Type
	110 V AC: 50/60 Hz, power 4.18 VA	Ex mb IIC T5 Gb	Ex mb IIIC T95°C Db	1 m	8059811	VACF-B-K1-16B-1-EX4-M
				5 m	8059812	VACF-B-K1-16B-5-EX4-M
	230 V AC: 50/60 Hz, power 5.0 VA			1 m	8059809	VACF-B-K1-3A-1-EX4-M
				5 m	8059810	VACF-B-K1-3A-5-EX4-M
	24 V AC: 50/60 Hz, power 3.85 VA			1 m	8059808	VACF-B-K1-1A-1-EX4-M

Accessories

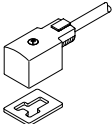
F solenoid coils, cable with open end, 3-core

	Characteristic coil data	Explosion ignition protection type for gas	Explosion ignition protection type for dust	Cable length	Part no.	Type
	24 V DC: 4.36 W	Ex mb IICT5 Gb	Ex mb IIIC T95°C Db	1 m	8059804	VACF-B-K1-1-1-EX4-M
				5 m	8059805	VACF-B-K1-1-5-EX4-M
				10 m	8059806	VACF-B-K1-1-10-EX4-M
				20 m	8059807	VACF-B-K1-1-20-EX4-M

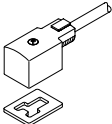
Plug socket, without cable, cable connection with clamping screws

	Electrical connection 2	Cable fitting	Part no.	Type
		M16x1.5	539710	MSSD-F-M16
	Screw terminal	Pg9	34431	MSSD-F

Connecting cable

	Switching position indicator	Nominal operating voltage DC	Cable length	Part no.	Type
			2.5 m	30936	KMF-1-230AC-2.5
			5 m	30938	KMF-1-230AC-5
	LED	24 V	2.5 m	30935	KMF-1-24DC-2.5-LED
			5 m	30937	KMF-1-24DC-5-LED
			10 m	193458	KMF-1-24-10-LED

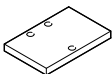
Connecting cable

	Switching position indicator	Nominal operating voltage DC	Cable length	Part no.	Type
			2.5 m	30936	KMF-1-230AC-2.5
			5 m	30938	KMF-1-230AC-5
	LED	24 V	2.5 m	30935	KMF-1-24DC-2.5-LED
			5 m	30937	KMF-1-24DC-5-LED
			10 m	193458	KMF-1-24-10-LED

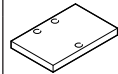
Illuminating seal for F solenoid coils

	Operational voltage range DC	Part no.	Type
	12 ... 24 V	19143	MF-LD-12-24DC

Plate for wide solenoid coils, as a spacer when using wider solenoid coils from other manufacturers (thickness 6.35 mm), for 3/2-way valves

	LABS (PWIS) conformity	Part no.	Type
	VDMA24364-B2-L	541667	MPL-TC-3-18
		541669	MPL-TC-3-14

Accessories

Plate for wide solenoid coils, as a spacer when using wider solenoid coils from other manufacturers (thickness 6.35 mm), for 5/2-way valves			
	LABS (PWIS) conformity	Part no.	Type
	VDMA24364-B2-L	541670	MPL-TC-5-14
		541668	MPL-TC-5-18