



- Electrically or pneumatically actuated valves
- With internal or external pilot air
- Sturdy and reliable

Specified types in accordance with ATEX directive for potentially explosive atmospheres

→ www.festo.com/en/ex

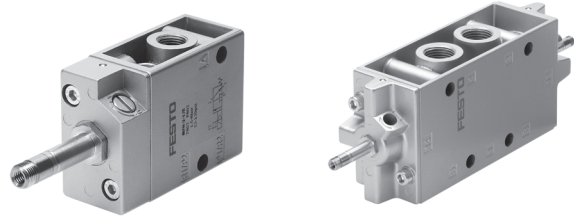
Solenoid/pneumatic valves, Tiger Classic

Key features



General information

- Highly durable poppet valve concept for all 3/2 and 5/2-way valves
- Pneumatic or electrical actuation with F solenoid coil
- With flow rates of up to 7500 l/min
- Pipe thread in sizes G1/8, G1/4, G1/2 and G3/4
- Tried and tested assembly on PAL or PRS manifold strips with hollow bolts
- Optimised response times with patented U-ring and servo control



Solenoid coils

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 acc. to ATEX directive for explosive atmospheres

- Easily interchangeable solenoid coils
- Solenoid coil not included in scope of delivery

Variants

VL/O-3-...

Depending upon selected connections:
Normally closed or normally open

MFH-3-..., MOFH-3-...

- MFH-3-...
Normally closed
- MOFH-3-...
Normally open

These valves can be converted from one function to the other by rotating the seal under the cover.

MFH-3-...-S

This valve type can be used within a range of 0 to 8 bar 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.

Solenoid/pneumatic valves, Tiger Classic

Key features

Manifold mounting

With PAL manifold strip



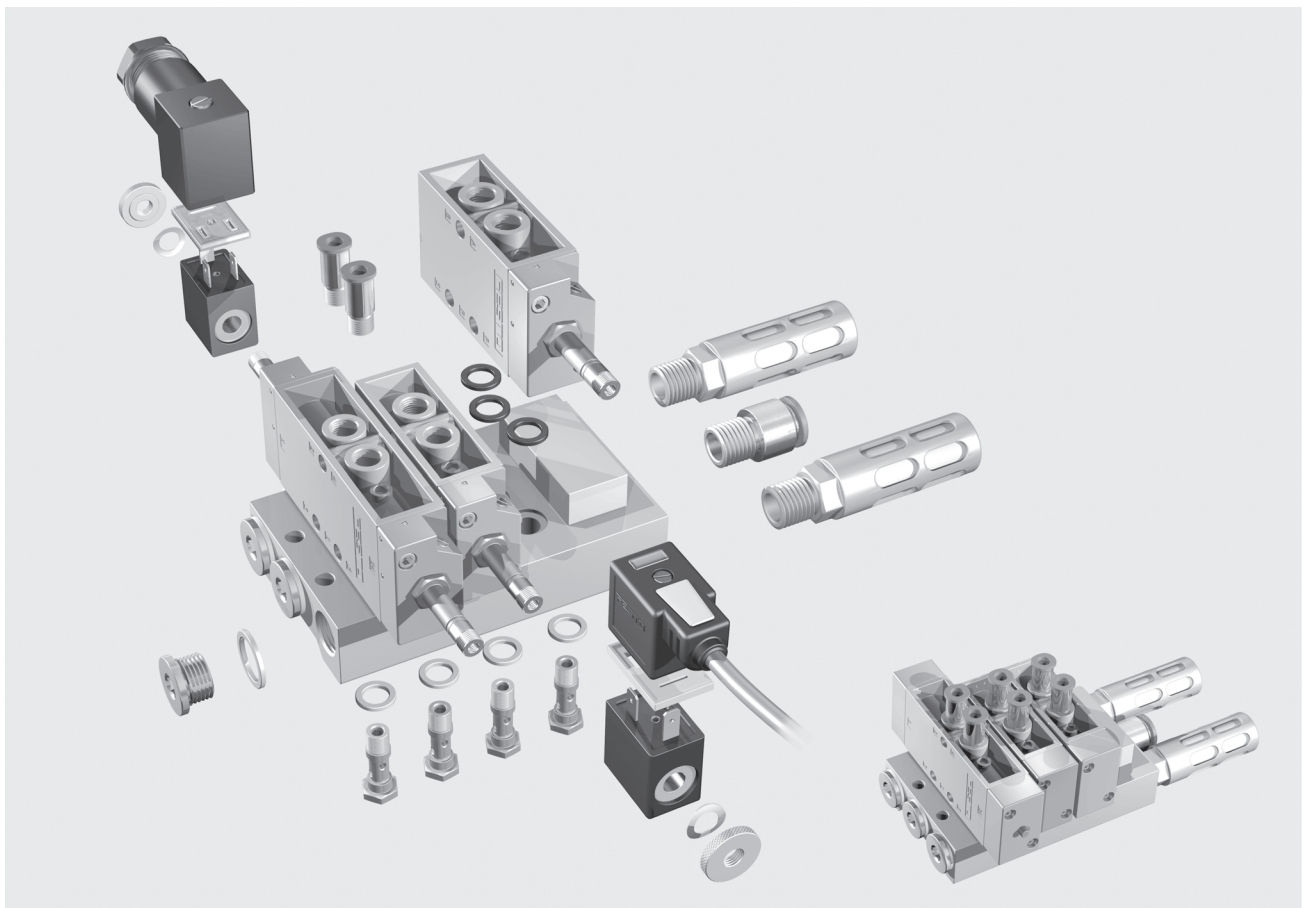
With PRS manifold block



The Tiger Classic valves can be mounted on PAL manifold strips with common supply port or on PRS manifold blocks with common supply port and common exhausts. The valves are mounted on the strips and blocks with hollow bolts.

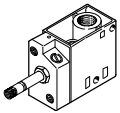
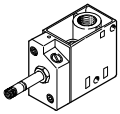
Vacant positions can be sealed on PAL manifold strips with blanking caps, or with blanking plates on PRS manifold blocks.

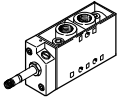
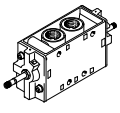
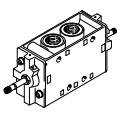
Separate pressure levels can be provided to individual valves by means of hollow bolts with threaded connection.



Solenoid valves, Tiger Classic

Product range overview

Function	Design	Type	Pneumatic connection	Operating voltage	
				[V DC]	[V AC]
3/2-way valves	Solenoid valve				
		MFH	G1/8	12, 24, 42, 48	24, 42, 48, 110, 230, 240
			G1/4		
			G1/2		
			G3/4		
		MOFH	G1/8	12, 24, 42, 48	24, 42, 48, 110, 230, 240
			G1/4		
			G1/2		
G3/4					

Function	Design	Type	Pneumatic connection	Operating voltage		
				[V DC]	[V AC]	
5/2-way valves	Solenoid valve					
		MFH	G1/8	12, 24, 42, 48	24, 42, 48, 110, 230, 240	
			G1/4			
			G1/2			
	Double solenoid valve					
		JMFH	G1/8	12, 24, 42, 48	24, 42, 48, 110, 230, 240	
			G1/4			
			G1/2			
Double solenoid valve with dominant signal						
	JMFH	G1/8	12, 24, 42, 48	24, 42, 48, 110, 230, 240		
		G1/4				

Solenoid valves, Tiger Classic

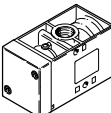
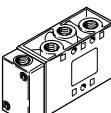
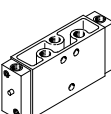
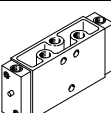
Product range overview

Type	Normal position		Pilot air supply		Type of reset		→ Page/Internet
	Closed	Open	Internal	External	Air spring	Mechanical spring	
Solenoid valve							
MFH	■	-	■	■	-	■	12
	■	-	■	■	-	■	
	■	-	■	■	-	■	
	■	-	■	■	-	■	
MOFH	-	■	■	-	-	■	12
	-	■	■	-	-	■	
	-	■	■	-	-	■	
	-	■	■	-	-	■	

Type	Pilot air supply		Type of reset		→ Page/Internet
	Internal	External	Air spring	Mechanical spring	
Solenoid valve					
MFH	■	■	-	■	17
	■	■	-	■	
	■	■	-	■	
Double solenoid valve					
JMFH	■	■	-	-	22
	■	■	-	-	
	■	■	-	-	
Double solenoid valve with dominant signal					
JMFHDH	-	■	-	-	22
	-	■	-	-	

Pneumatic valves, Tiger Classic

Product range overview

Function	Design	Type	Pneumatic connection	Type of reset		→ Page/Internet	
				Air spring	Mechanical spring		
3/2-way valves		VL/O	G1/8	-	■	29	
			G1/4	-	■		
			G1/2	-	■		
			G3/4	-	■		
5/2-way valves		VL	G1/8	-	■	33	
			G1/4	-	■		
			G1/2	-	■		
	Double pilot valve						
		JH	G1/8	-	-	36	
			G1/4	-	-		
			G1/2	-	-		
	Double pilot valve with dominant signal						
		JDH	G1/8	-	-	36	
			G1/4	-	-		

Solenoid valves, Tiger Classic

Type codes

MFH – 5 – 1/8 – S – EX

Type

MFH	Single solenoid, for F solenoid coil, normally closed
MOFH	Single solenoid, for F solenoid coil, normally open
JMFH	Double solenoid, for F solenoid coil
JMFDH	Double solenoid, for F solenoid coil, with dominant signal

Valve function

3	3/2-way valve
5	5/2-way valve

Pneumatic connection

1/8	G1/8
1/4	G1/4
1/2	G1/2
3/4	G3/4

Pilot air supply

–	Internal
S	External

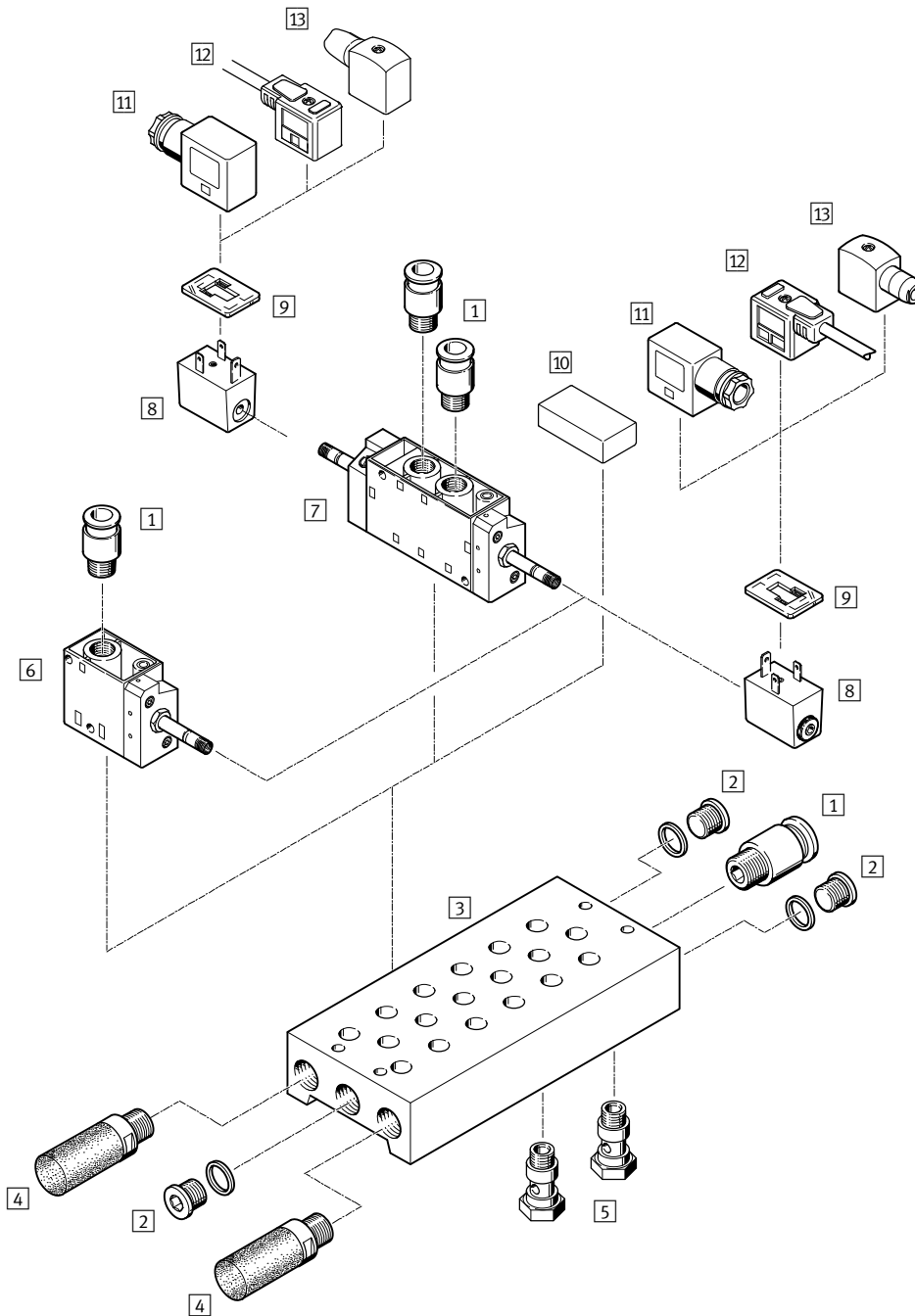
CE marking

–	None
EX	ATEX category → technical data

Solenoid valves, Tiger Classic

Peripherals overview

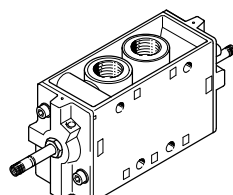
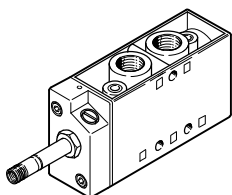
Mounting on manifold block



Variants

MFH-5-...

JMFH-5-...



Solenoid valves, Tiger Classic

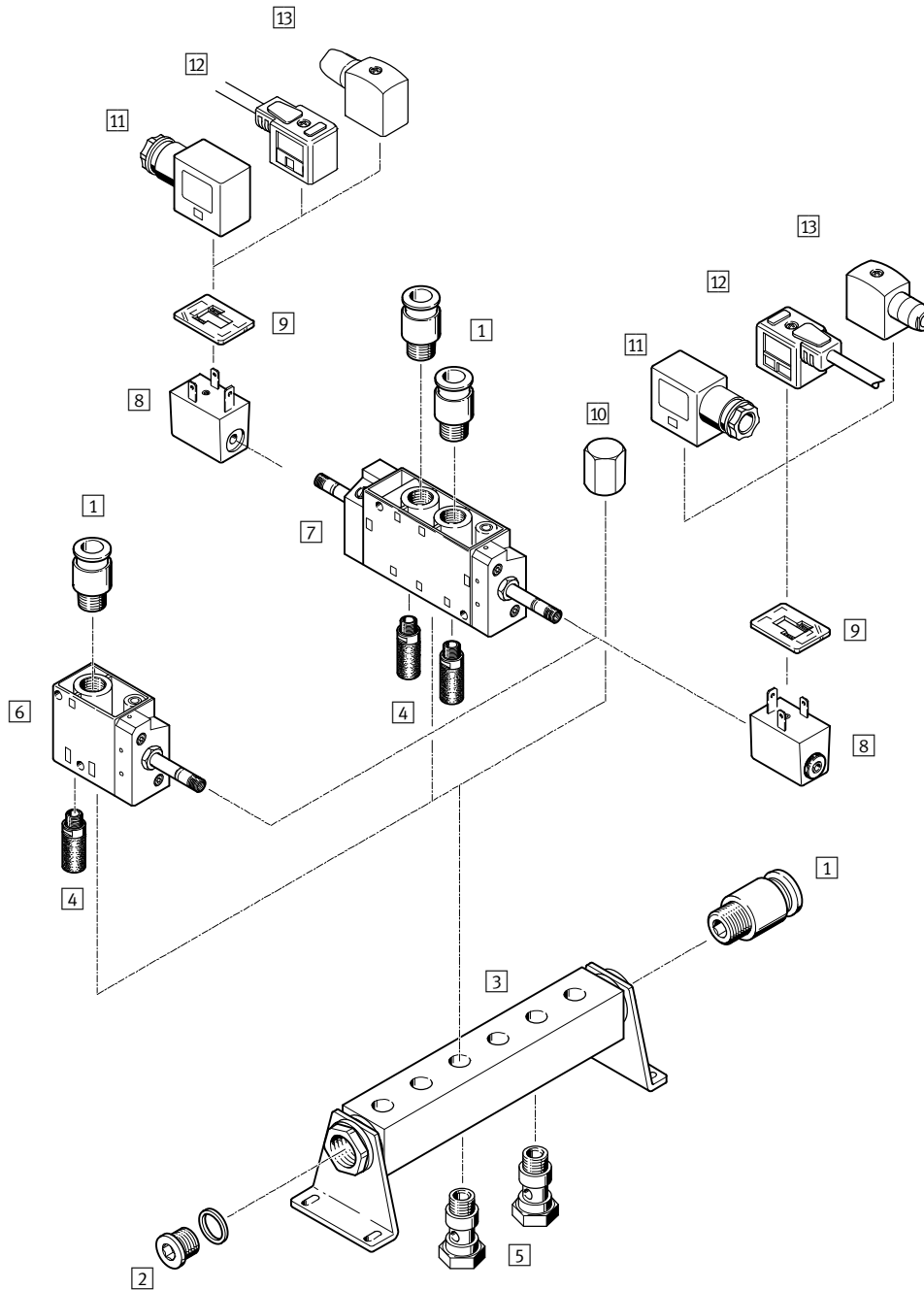
Peripherals overview

Accessories		
	Brief description	→ Page/Internet
1	Push-in fitting QS	For connecting standard O.D. tubing quick star
2	Blanking plug B	3 included in the scope of delivery for PRS manifold block blanking plug
3	Manifold block PRS	LEERER MERKER
4	Silencer	For fitting in exhaust ports u
5	Hollow bolt VT	For distribution of compressed air or for separate compressed air supply 41
6	Solenoid valve MFH	For F solenoid coil 4
7	Double solenoid valve JMFH	For F solenoid coil 4
8	F solenoid coil MSFG, MSFW	msfg, msfw
9	Luminescent seal M...-LD	For displaying the switching status 44
10	Blanking plate PRSB	For covering an unused valve position 43
11	Plug socket MSSD-F	For valves MFH, JMFH 44
12	Connecting cable KMF	For valves MFH, JMFH 44
13	Plug socket MSSD-F-S	For valves MFH, JMFH 44

Solenoid valves, Tiger Classic

Peripherals overview

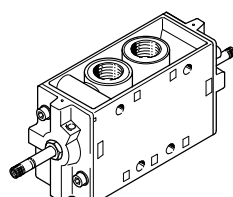
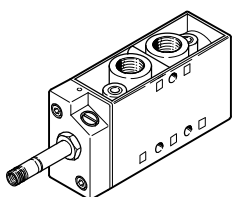
Mounting on manifold strip



Variants

MFH-5-...

JMFH-5-...



Solenoid valves, Tiger Classic



Peripherals overview

Accessories		
	Brief description	→ Page/Internet
1	Push-in fitting QS	For connecting standard O.D. tubing quick star
2	Blanking plug B	1 included in the scope of delivery for PAL manifold strip blanking plug
3	Manifold strip PAL	LEERER MERKER
4	Silencer	For fitting in exhaust ports u
5	Hollow bolt VT	For distribution of compressed air or for separate compressed air supply 41
6	Solenoid valve MFH	For F solenoid coil 4
7	Double solenoid valve JMFH	For F solenoid coil 4
8	F solenoid coil MSFG, MSFW	msfg, msfw
9	Luminescent seal M...-LD	For displaying the switching status 44
10	Blanking cap VTM	For blanking an unused valve position 41
11	Plug socket MSSD-F	For valves MFH, JMFH 44
12	Connecting cable KMF	For valves MFH, JMFH 44
13	Plug socket MSSD-F-S	For valves MFH, JMFH 44

Solenoid valves MFH, Tiger Classic

FESTO

Technical data – 3/2-way valves

-  Flow rate
500 ... 7500 l/min
-  Voltage
12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC

Wearing parts kits → Page 17



General technical data				
Pneumatic connection	G1/8	G1/4	G1/2	G3/4
Valve function	3/2-way, single solenoid			
Design	Poppet seat			
Lap	Underlap			
Sealing principle	Soft			
Actuation type	Electrical			
Reset method	Mechanical spring			
Type of control	Piloted			
Pilot air supply	Internal or external			
Flow direction	Non-reversible (reversible/reversible with restrictions with external pilot air supply)			
Exhaust function	With flow control option			
Manual override	Detenting			
Type of mounting	Via through-hole or on manifold rail/manifold block ¹⁾			
Mounting position	Optional			
Electrical connection	Via F solenoid coil, to be ordered separately			
Port for venting hole	M5 (only ATEX types)			
Pilot exhaust air port 82/84	M5			
Pilot air port 12	M5	M5	G1/8	G1/8
b value	–	–	03	–
Nominal size [mm]	5	7	14	19
Standard nominal flow rate [l/min]	500	800	3700	7500
Product weight [g]	240	320	1100	1260

1) Mounting of types MFH-3-3/4- and MOFH-3-3/4- only via through-hole

Safety data				
Type code	MFH- ... -EX	MOFH- ... -EX	JMFH- ... -EX	JMFDH- ... -EX
Max. switching frequency [Hz]	3	–	25	16
Max. positive test pulse with 0 signal [μs]	2200			
Max. negative test pulse with 1 signal [μs]	3700 ¹⁾			

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

ATEX	
Type code	MFH- ... -EX, JMFH- ... -EX
ATEX category for gas	II 2G
Type of ignition protection for gas	c T4
ATEX category for dust	II 2D
Type of ignition protection for dust	c 130 °C
Explosion ambient temperature [°C]	–5 ≤ Ta ≤ +40
CE marking (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)
Degree of protection	IP65 (in assembled state)

Solenoid valves MFH, Tiger Classic

Technical data – 3/2-way valves

Operating and environmental conditions			G1/8	G1/4	G1/2	G3/4	G1/8-EX	G1/4-EX	G1/2-EX	G3/4-EX	
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]								
Pilot medium			Compressed air to ISO 8573-1:2010 [7:4:4] (with external pilot air supply)								
Note on operating/pilot medium			Lubricated operation possible (in which case lubricated operation will always be required)								
Operating pressure	Internal pilot air supply	[bar]	1.5 ... 8		2 ... 8		1.5 ... 8		2 ... 8		
	External pilot air supply	[bar]	-0.95 ... +10								
Pilot pressure (external pilot air supply)		[bar]	1 ... 8								
Ambient temperature	[°C]	[°C]	-5 ... +40								
Temperature of medium	[°C]	[°C]	-10 ... +60				-5 ... +40				
Storage temperature		[°C]	-20 ... +60								
Approval certificate			c UL us - Recognized (OL)						-	-	
Note on materials			RoHS-compliant								
Corrosion resistance class CRC ¹⁾			1								

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Electrical data			
F solenoid coil			
Electrical connection		Plug pins 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)
Characteristic coil data	DC voltage	[W]	4.5
	AC voltage	[VA]	Pull: 7.5 Hold: 6
Protection class to EN 60 529		IP65 (in combination with plug socket)	

Valve switching times [ms]									
Pneumatic connection	G1/8		G1/4		G1/2		G3/4		
Normal position	Closed	Open	Closed	Open	Closed	Open	Closed	Open	
Internal pilot air supply									
On	9	9	10	14	18	18	36	40	
Off	29	29	29	41	90	90	32	29	
External pilot air supply									
On	9	-	10	-	18	-	36	-	
Off	29	-	29	-	90	-	32	-	

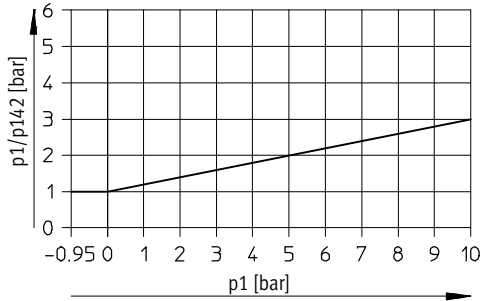
Solenoid valves MFH, Tiger Classic

Technical data – 3/2-way valves

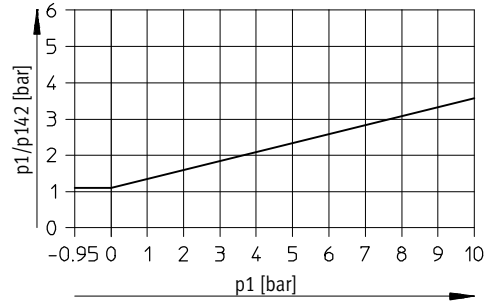


Minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1 (external pilot air supply)

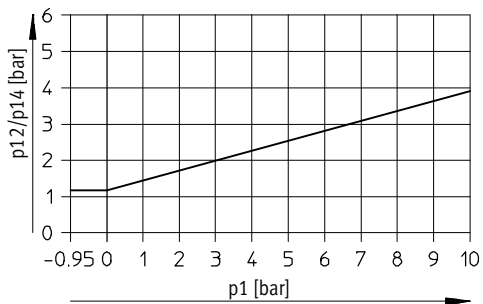
MFH-3-1/8-S



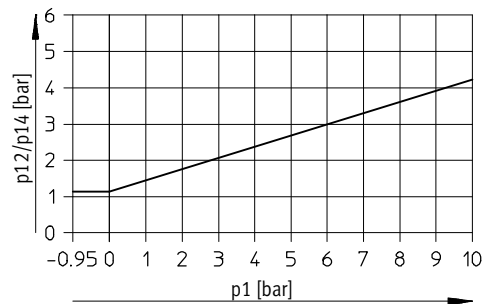
MFH-3-1/4-S



MFH-3-1/2-S

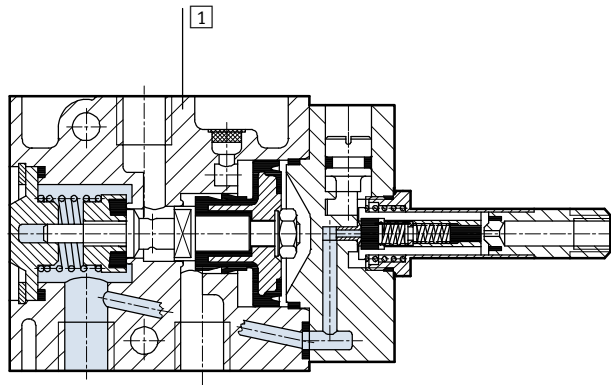


MFH-3-3/4-S



Materials

Sectional view



1	Housing	Die-cast aluminium
-	Seals	NBR

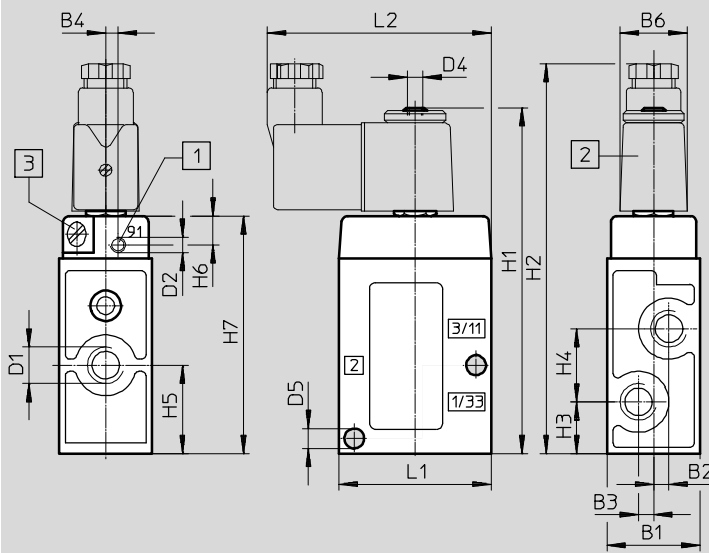
Solenoid valves MFH, Tiger Classic

Technical data – 3/2-way valves

Dimensions

Download CAD data → www.festo.com

MFH, MOFH



- 1 Additional connection for external pilot air with MFH-3-.../MOFH-3-...
- 2 Solenoid coil can be rotated by 360°
- 3 Manual override can be turned by 180°

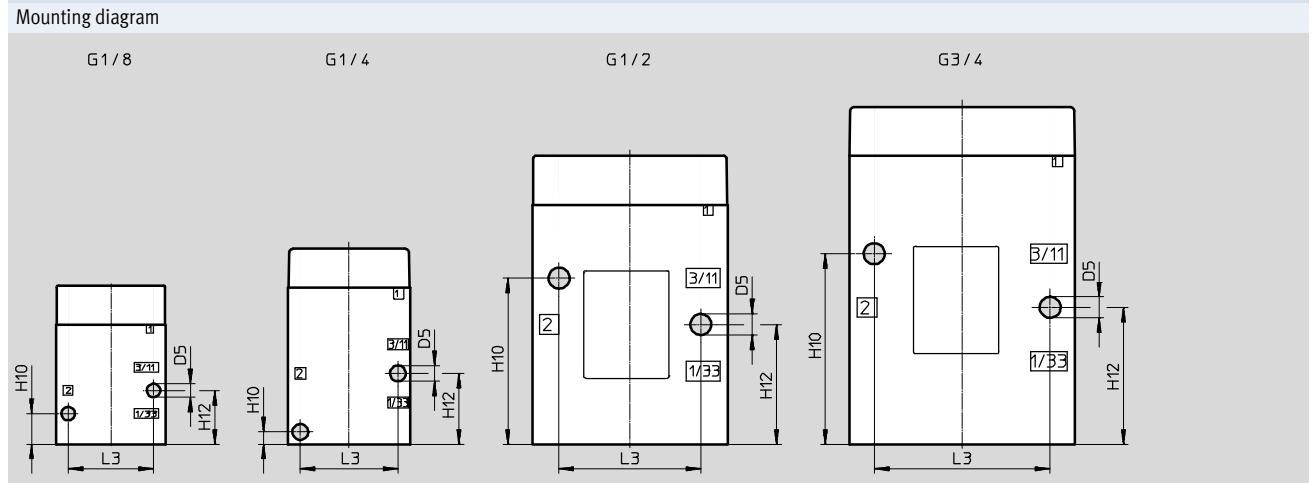
Type code	B1	B2	B3	B4	B6	D1	D2	D4	D5 Ø
M...-3-1/8	26 +0.2	3.5	3.5	–	22	G1/8	–	M5	5.5
M...-3-1/8-S				2.7			M5		
M...-3-1/4	30.4 ±0.15	5	5	–		G1/4	–	M5	6.5
M...-3-1/4-S	30.4			4			M5		
M...-3-1/2	52 ±0.15	8	8	–		G1/2	–	M5	8.6
M...-3-1/2-S	52			G1/8					
M...-3-3/4	68 ±0.15	8	8	–		G3/4	–	M5	8.6
M...-3-3/4-S	68			G1/8					

Type code	H1	H2	H3	H4	H5	H6	H7	L1	L2
M...-3-1/8	97	111	12.5	19 ±0.15	22	–	63	45 ±0.15	71
M...-3-1/8-S				9.5					
M...-3-1/4	112	126	17	24 ±0.15	29	–	78	50 ±0.15	73.5
M...-3-1/4-S				24		9.5		50	
M...-3-1/2	151	165	30 ±0.15	38 ±0.15	49 ±0.15	–	117	80 ±0.2	88.5
M...-3-1/2-S			30	38	49	10.5		80	
M...-3-3/4	171	187	34	44 ±0.15	56	–	137	92 ±0.2	94.5
M...-3-3/4-S				44		11		92	

Solenoid valves MFH, Tiger Classic

Technical data – 3/2-way valves

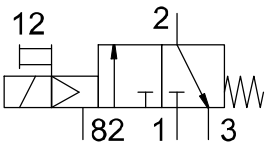
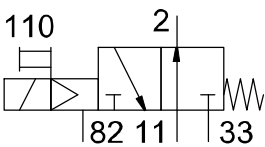
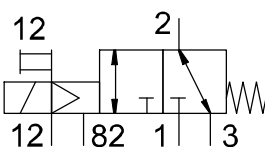
Dimensions Download CAD data → www.festo.com



Type code	D5 Ø	H10	H12	L3
M...-3-1/8	5.5	12.5	22	35 ±0.15
M...-3-1/8-S				
M...-3-1/4	6.5	5	29	40 ±0.15
M...-3-1/4-S				
M...-3-1/2	8.6	68	49	58 ±0.2
M...-3-1/2-S				
M...-3-3/4	8.6	78	56	72 ±0.2
M...-3-3/4-S				

Solenoid valves MFH, Tiger Classic

Technical data – 3/2-way valves

Ordering data							
Circuit symbol	Description	Pneumatic connection	ATEX category	Part No.	Type code		
	Without F solenoid coil ¹⁾ , internal pilot air supply	G1/8	–	7802	MFH-3-1/8		
			ATEX category → Page 12	535897	MFH-3-1/8-EX		
		G1/4	–	9964	MFH-3-1/4		
			ATEX category → Page 12	535898	MFH-3-1/4-EX		
		G1/2	–	9857	MFH-3-1/2		
			ATEX category → Page 12	535899	MFH-3-1/2-EX		
		G3/4	–	11967	MFH-3-3/4		
			ATEX category → Page 12	536190	MFH-3-3/4-EX		
			Without F solenoid coil ¹⁾ , internal pilot air supply	G1/8	–	7877	MOFH-3-1/8
					ATEX category → Page 12	535903	MOFH-3-1/8-EX
				G1/4	–	7876	MOFH-3-1/4
					ATEX category → Page 12	535904	MOFH-3-1/4-EX
G1/2	–			7884	MOFH-3-1/2		
	ATEX category → Page 12			535905	MOFH-3-1/2-EX		
G3/4	–			11969	MOFH-3-3/4		
	ATEX category → Page 12			536192	MOFH-3-3/4-EX		
	Without F solenoid coil ¹⁾ , external pilot air supply, reversible (except for vacuum, connect vacuum to port 1 only)			G1/8 ²⁾	–	7958	MFH-3-1/8-S
					ATEX category → Page 12	535900	MFH-3-1/8-S-EX
				G1/4 ³⁾	–	7959	MFH-3-1/4-S
					ATEX category → Page 12	535901	MFH-3-1/4-S-EX
		G1/2 ⁴⁾	–	7960	MFH-3-1/2-S		
			ATEX category → Page 12	535902	MFH-3-1/2-S-EX		
		G3/4 ⁵⁾	–	11968	MFH-3-3/4-S		
			ATEX category → Page 12	536191	MFH-3-3/4-S-EX		



- 1) F solenoid coils → Page 45
- 2) Connect vacuum (0 ... -0.7 bar) to port 1 only
- 3) Connect vacuum (0 ... -0.6 bar) to port 1 only
- 4) Connect vacuum (0 ... -0.55 bar) to port 1 only
- 5) Connect vacuum (0 ... -0.4 bar) to port 1 only

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type code
G1/8	104206	MFH-3-1/8
G1/4	104207	MFH-3-1/4
G1/2	104208	MFH-3-1/2

Solenoid valves MFH, Tiger Classic

Technical data – 5/2-way valves

Wearing parts kits → page 23

-  Flow rate
500 ... 3700 l/min
-  Voltage
12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC



General technical data			
Pneumatic connection	G1/8	G1/4	G1/2
Valve function	5/2-way, single solenoid		
Design	Poppet seat		
Lap	Underlap		
Sealing principle	Soft		
Actuation type	Electrical		
Reset method	Mechanical spring		
Type of control	Piloted		
Flow direction	Non-reversible		
Pilot air supply	Internal or external		
Exhaust function	With flow control option		
Manual override	Detenting		
Type of mounting	Via through-hole or on manifold rail/manifold block		
Mounting position	Any		
Electrical connection	Via F solenoid coil, to be ordered separately		
Port for venting hole	M5 (only ATEX types)		
Pilot exhaust air port 82/84	M5		
Pilot air connection 14	M5	M5	G1/8
b value	–	0.19	0.32
c value	[l/sbar]	–	4.49
Nominal size	[mm]	5	7
Standard nominal flow rate	[l/min]	500	1000
Product weight	[g]	270	290
			1135

Safety data		
Max. switching frequency	[Hz]	–
Max. positive test pulse with 0 signal	[μs]	2200
Max. negative test pulse with 1 signal	[μs]	3700

Solenoid valves MFH, Tiger Classic

Technical data – 5/2-way valves

Operating and environmental conditions			G1/8	G1/4	G1/2	G1/8-EX	G1/4-EX	1/2-EX	
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]						
Note on operating/pilot medium			Lubricated operation possible (in which case lubricated operation will always be required)						
Operating pressure	Internal pilot air supply	[bar]	1.8 ... 8	2.2 ... 8	2 ... 8	1.8 ... 8	2.2 ... 8	2 ... 8	
	External pilot air supply	[bar]	0 ... 10	0 ... 8	0 ... 8	0 ... 10	0 ... 8	0 ... 10	
Pilot pressure (external pilot air supply)		[bar]	1 ... 8	1.5 ... 8	1.5 ... 8	1.2 ... 8	1.5 ... 8	1 ... 8	
Ambient temperature		[°C]	-5 ... +40						
Temperature of medium		[°C]	-10 ... +60			-5 ... +40			
Storage temperature		[°C]	-20 ... +60						
Note on materials			RoHS-compliant						
Corrosion resistance class CRC ¹⁾			1						
Approval certificate			c UL us - Recognized (OL)					-	

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Electrical data		
F solenoid coil		
Electrical connection		Plug pins 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)
Characteristic coil data	DC voltage	[W] 4.5
	AC voltage	[VA] Pull: 7.5 Hold: 6
Protection class to EN 60 529		IP65 (in combination with plug socket)

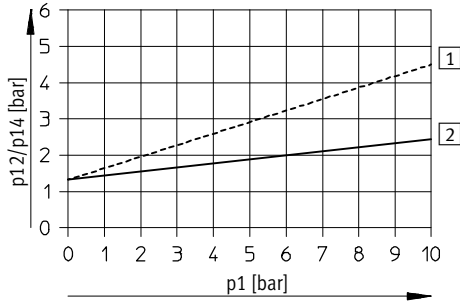
Valve switching times [ms]			
Pneumatic connection	G1/8	G1/4	G1/2
On	8	9	21
Off	36	29	150

Solenoid valves MFH, Tiger Classic

Technical data – 5/2-way valves

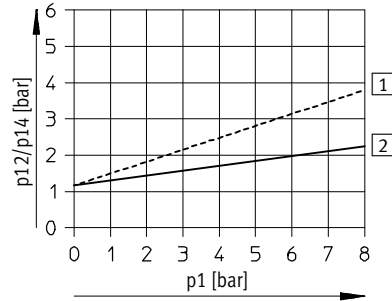
Minimum pilot pressure p_{12} , p_{14} as a function of operating pressure p_1 (external pilot air supply)

MFH-5-1/8-S



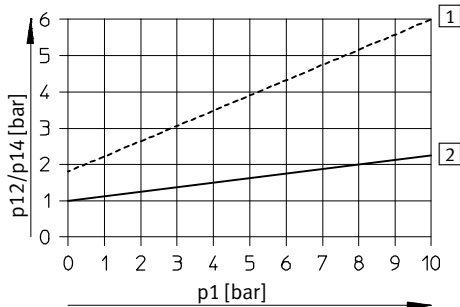
----- Exhaust, throttled
 ———— Exhaust, unthrottled

MFH-5-1/4-S



----- Exhaust, throttled
 ———— Exhaust, unthrottled

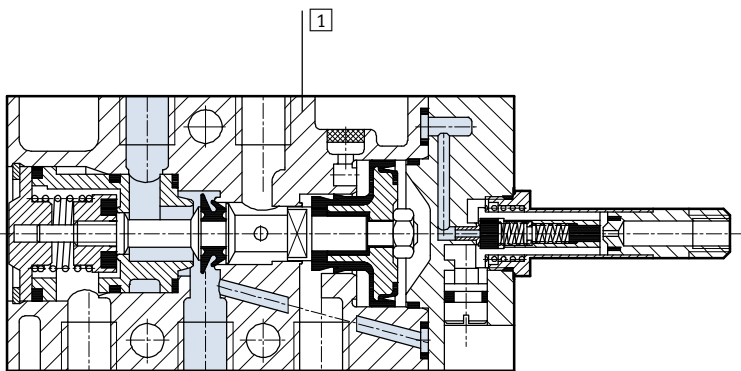
MFH-5-1/2-S



----- Exhaust, throttled
 ———— Exhaust, unthrottled

Materials

Sectional view



1	Housing	Die-cast aluminium
-	Seals	NBR, TPE-U(PU)

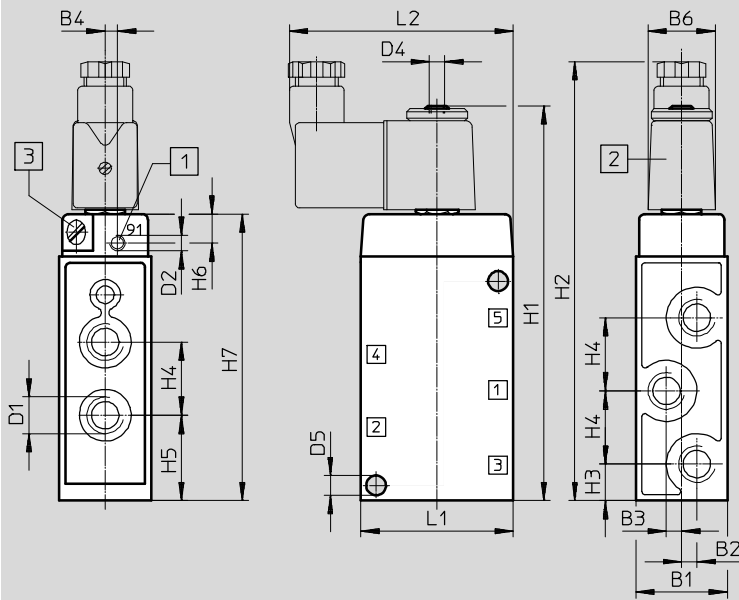
Solenoid valves MFH, Tiger Classic

Technical data – 5/2-way valves

Dimensions

Download CAD data → www.festo.com

MFH



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

Type code	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		G1/4	M5		5.5 – 6.2
MFH-5-1/4	30.4 ±0.1	–	5 ±0.15	–		G1/2	G1/8		6.5 ±0.14
MFH-5-1/4-S				4					Min. 6.5
MFH-5-1/2	52 ±0.15	–	8	–					8.5
MFH-5-1/2-S									

Type code	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		134		19 ±0.15		9.5			71.5
MFH-5-1/4	128	143	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	208.5	32 ±0.15	38 ±0.15	51 ±0.15	–	158	80 +0.4/-0.2	87.5
MFH-5-1/2-S						10.5			

Solenoid valves MFH, Tiger Classic

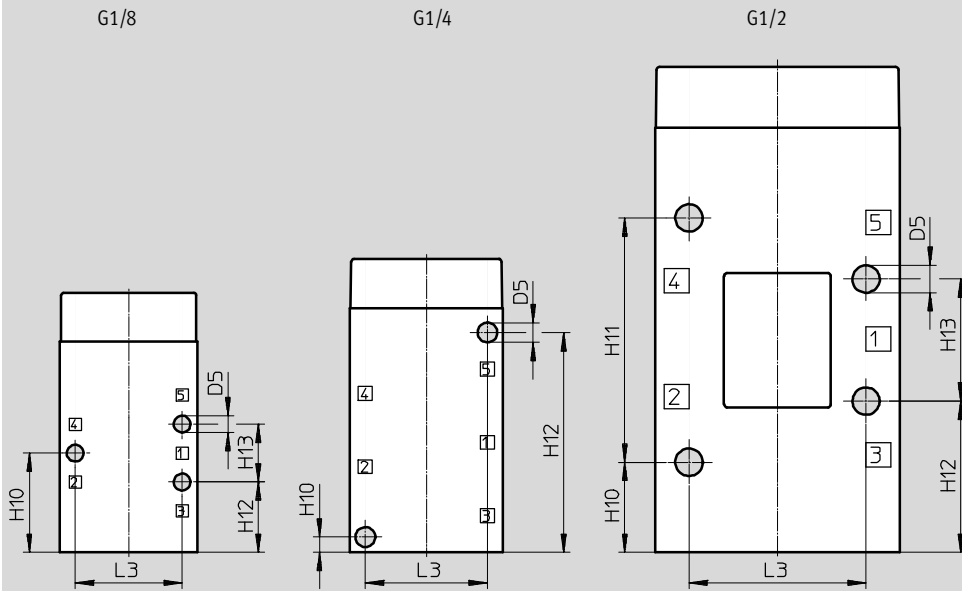
Technical data – 5/2-way valves



Dimensions

Download CAD data → www.festo.com

Mounting diagram



Type code	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						

Solenoid valves MFH, Tiger Classic

Technical data – 5/2-way valves

Ordering data					
Circuit symbol	Description	Pneumatic connection	ATEX category	Part No.	Type code
	Without F solenoid coil ¹⁾ , internal pilot air supply	G1/8	–	9982	MFH-5-1/8
			ATEX category → Page 12	535906	MFH-5-1/8-EX
		G1/4	–	6211	MFH-5-1/4
			ATEX category → Page 12	535907	MFH-5-1/4-EX
		G1/2	–	6420	MFH-5-1/2
			ATEX category → Page 12	535908	MFH-5-1/2-EX
	Without F solenoid coil ¹⁾ , external pilot air supply	G1/8	–	10348	MFH-5-1/8-S
			ATEX category → Page 12	535909	MFH-5-1/8-S-EX
		G1/4	–	10349	MFH-5-1/4-S
			ATEX category → Page 12	535910	MFH-5-1/4-S-EX
		G1/2	–	35547	MFH-5-1/2-S
			ATEX category → Page 12	535911	MFH-5-1/2-S-EX

1) F solenoid coils → Page 47



Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type code
G1/8	104209	MFH-5-1/8¹⁾²⁾
G1/4	104211	MFH-5-1/4³⁾⁴⁾

- 1) Order assembly sleeves part no. 228389 separately
- 2) Use up to E602 series
- 3) Order assembly sleeves part no. 229363 separately
- 4) Use from 1/81 series

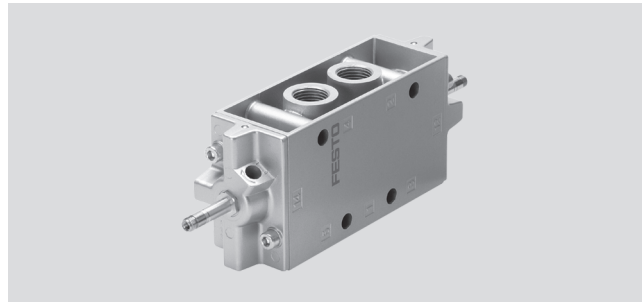
Double solenoid valves JMFH, Tiger Classic

FESTO

Technical data – 5/2-way valves, double solenoid valves

-  Flow rate
600 ... 4500 l/min
-  Voltage
12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC

Wearing parts kits → page 29



General technical data				
Pneumatic connection	G1/8	G1/4	G1/2	
Valve function	5/2-way, bistable			
Design	Poppet seat			
Lap	Underlap			
Sealing principle	Soft			
Actuation type	Electrical			
Type of control	Piloted			
Flow direction	Non-reversible			
Pilot air supply	Internal or external			
Exhaust function	With flow control option			
Manual override	Detenting			
Type of mounting	Via through-hole or on manifold rail/manifold block			
Mounting position	Any			
Electrical connection	Via F solenoid coil, to be ordered separately			
Port for venting hole	M5 (only ATEX types)			
b value	–	–	0.3	
c value	[l/sbar]	–	19.5	
Pilot exhaust air port 82/84	M5			
Pilot air port 12/14	M5	M5	G1/2	
Nominal size	[mm]	5	7	14
Standard nominal flow rate	[l/min]	600	1100	4500
Product weight	[g]	260	530	1210

Safety data			
Type code	JMFH- ... -EX	JMFDH- ... -EX	
Max. switching frequency	[Hz]	25	16
Max. positive test pulse with 0 signal	[μs]	2200	
Max. negative test pulse with 1 signal	[μs]	3700	

Double solenoid valves JMFH, Tiger Classic

Technical data – 5/2-way valves, double solenoid valves

Operating and environmental conditions							
Pneumatic connection		G1/8	G1/4	G1/2	G1/8-EX	G1/4-EX	G1/2-EX
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure	Internal pilot air supply	[bar]	1.5 ... 8	2 ... 8	1.5 ... 8	2 ... 8	
	External pilot air supply	[bar]	0 ... 8				
	With dominant signal	[bar]	2.5 ... 8	–	2.5 ... 8	–	
Pilot pressure	[bar]	1.2 ... 8	0.5 ... 8	1.2 ... 8	1 ... 8		
Ambient temperature	[°C]	–5 ... +40					
Temperature of medium	[°C]	–10 ... +60			–5 ... +40		
Storage temperature	[°C]	–20 ... +60					
Approval certificate	c UL us - Recognized (OL)				–		
Note on materials	RoHS-compliant						
Corrosion resistance class CRC ¹⁾	1						

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Electrical data			
F solenoid coil			
Electrical connection		Plug pins 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)
Characteristic coil data	DC voltage	[W]	4.5
	AC voltage	[VA]	Pull: 7.5 Hold: 6
Protection class to EN 60 529		IP65 (in combination with plug socket)	

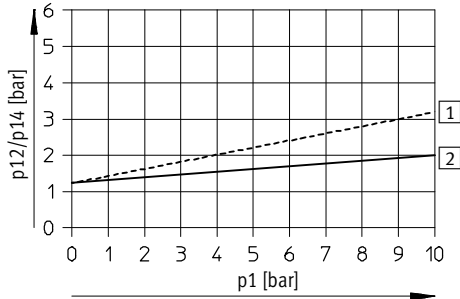
Valve switching times [ms]						
Pneumatic connection		G1/8		G1/4		G1/2
			Dominant signal at 14		Dominant signal at 14	Dominant signal at 14
Changeover		10	16	11	16	20

Double solenoid valves JMFH, Tiger Classic

Technical data – 5/2-way valves, double solenoid valves

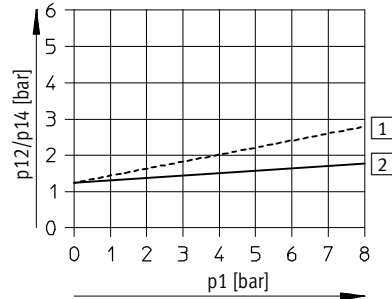
Minimum pilot pressure p_{12} , p_{14} as a function of operating pressure p_1 (external pilot air supply)

JMFH-5-1/8-S



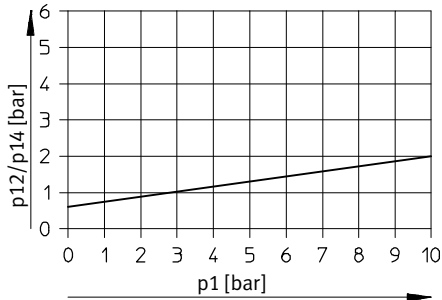
----- Exhaust, throttled
 ———— Exhaust, unthrottled

JMFH-5-1/4-S



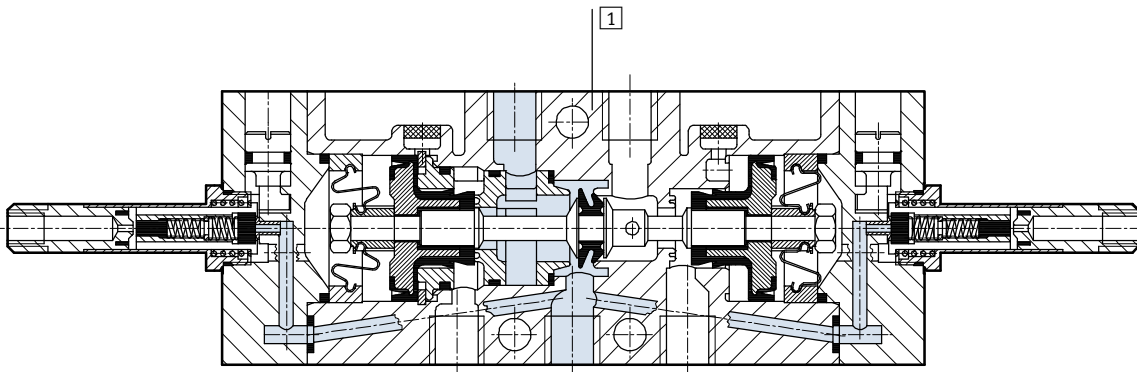
----- Exhaust, throttled
 ———— Exhaust, unthrottled

JMFH-5-1/2-S



Materials

Sectional view



1	Housing	Die-cast aluminium
-	Seals	NBR, TPE-U(PU)

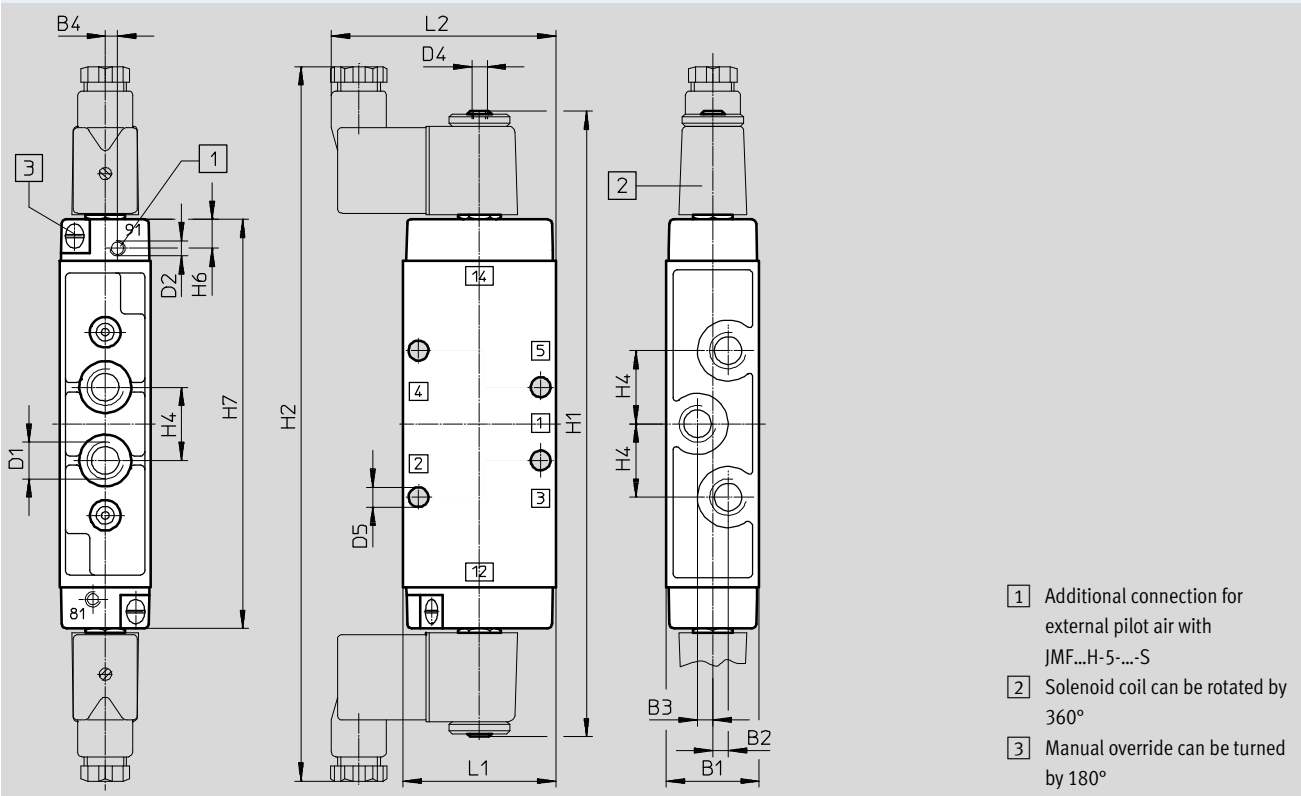
Double solenoid valves JMFH, Tiger Classic

Technical data – 5/2-way valves, double solenoid valves

Dimensions

Download CAD data → www.festo.com

JMFH, JMFDH



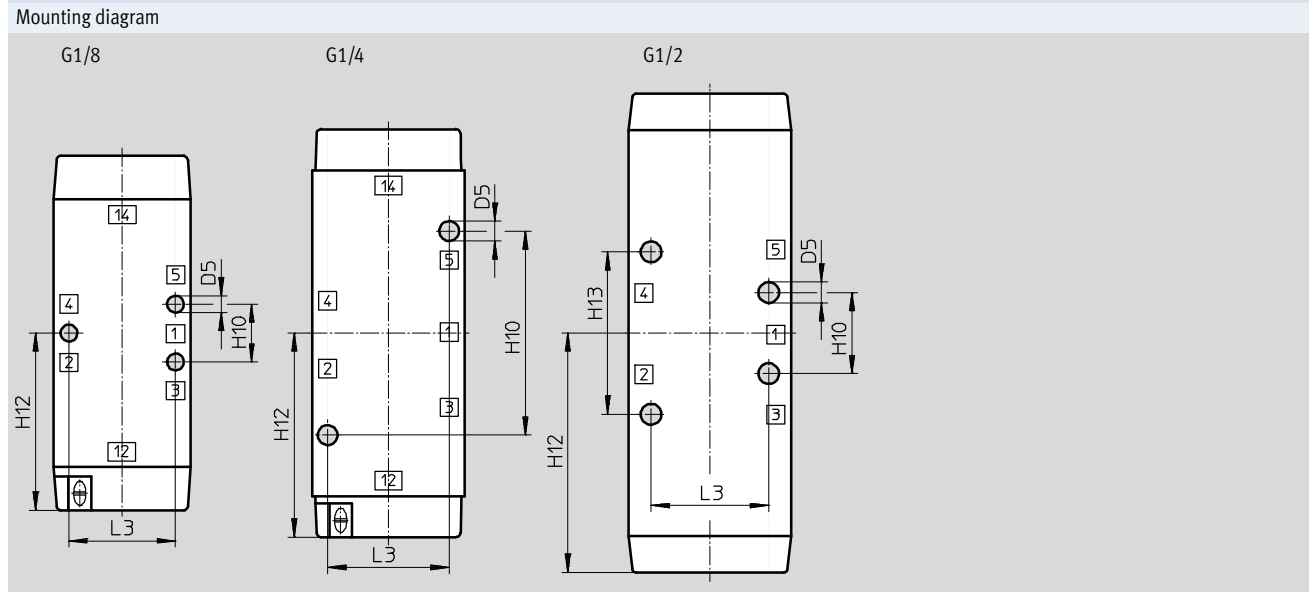
Type code	B1	B2	B3	B4	D1	D2	D4	D5
JMF...-5-1/8	26 +0.2	3.5 +0.15	3.5 +0.15	–	G1/8	–	M5	5.5
JMF...-5-1/8-S				2.7		M5		
JMF...-5-1/4	30.4 ±0.1	–	5	–	G1/4	–	M5	Min. 6.5
JMF...-5-1/4-S				4		M5		
JMF...-5-1/2	52	–	8	–	G1/2	–	M5	9.6 +0.2
JMF...-5-1/2-S	52 ±0.15					G1/8		8.5

Type code	H1	H2	H4	H6	H7	L1	L2
JMF...-5-1/8	184	217	19 ±0.15	–	116.5	45 ±0.15	71.5
JMF...-5-1/8-S				9.5			
JMF...-5-1/4	202	235	24 -0.3	–	134	50 +0.4/-0.2	74
JMF...-5-1/4-S				9.5			
JMF...-5-1/2	244	272	38	–	176	80	88.5
JMF...-5-1/2-S		277	38 ±0.1	10.5		80 +0.4/-0.2	87.5

Double solenoid valves JMFH, Tiger Classic

Technical data – 5/2-way valves, double solenoid valves

Dimensions Download CAD data → www.festo.com



Type code	D5 ∅	H10	H12	H13	L3
JMF...-5-1/8	5.5	19	58.3	–	35
JMF...-5-1/8-S					
JMF...-5-1/4	Min. 6.5	67	67	–	40
JMF...-5-1/4-S					
JMF...-5-1/2	9.6 +0.2	40	88	80	58
JMF...-5-1/2-S	8.5				

Double solenoid valves JMFH, Tiger Classic

Technical data – 5/2-way valves, double solenoid valves

Ordering data					
Circuit symbol	Description	Pneumatic connection	ATEX category	Part No.	Type code
	Without F solenoid coil ¹⁾ , internal pilot air supply	G1/8	–	8820	JMFH-5-1/8
			ATEX category → Page 12	535912	JMFH-5-1/8-EX
		G1/4	–	10410	JMFH-5-1/4
			ATEX category → Page 12	535913	JMFH-5-1/4-EX
		G1/2	–	10166	JMFH-5-1/2
			ATEX category → Page 12	535914	JMFH-5-1/2-EX
	Without F solenoid coil ¹⁾ , external pilot air supply	G1/8	–	14008	JMFH-5-1/8-S
			ATEX category → Page 12	535915	JMFH-5-1/8-S-EX
		G1/4	–	14009	JMFH-5-1/4-S
			ATEX category → Page 12	535916	JMFH-5-1/4-S-EX
		G1/2	–	35548	JMFH-5-1/2-S
			ATEX category → Page 12	535917	JMFH-5-1/2-S-EX
	Without F solenoid coil ¹⁾ , internal pilot air supply, with dominant signal at 14	G1/8	–	8821	JMFDH-5-1/8
			ATEX category → Page 12	536193	JMFDH-5-1/8-EX
		G1/4	–	10411	JMFDH-5-1/4
			ATEX category → Page 12	536194	JMFDH-5-1/4-EX

1) F solenoid coils → Page 47

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type code
G1/8	104891	JMFH-5-1/8¹⁾
G1/4	104892	JMFH-5-1/4²⁾

1) Order assembly sleeves part no. 228389 separately
 2) Order assembly sleeves part no. 229363 separately

Pneumatic valves, Tiger Classic

Type codes

VL/0 - 3 - 1/4 - EX

Type	
VL/0	Single pilot, normally open or closed
VL	Single pilot
JH	Double pilot
JMFDH	Double pilot, dominant

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

Pneumatic connection	
1/8	G1/8
1/4	G1/4
1/2	G1/2
3/4	G3/4

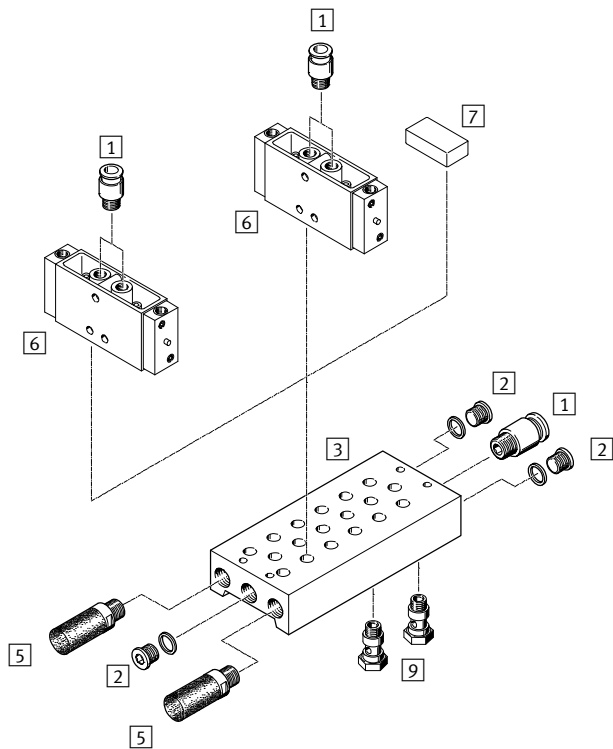
CE marking	
-	None
EX	ATEX category → technical data

Pneumatic valves, Tiger Classic

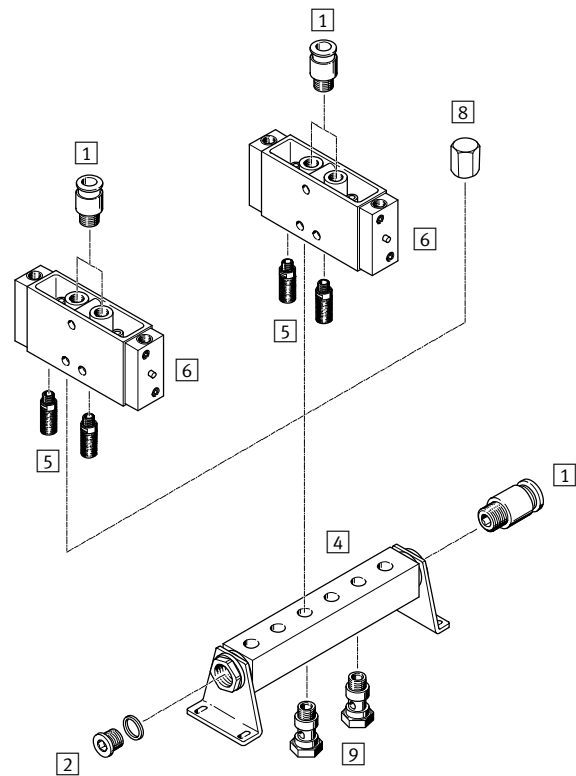
Peripherals overview

FESTO

Mounting on manifold block



Mounting on manifold strip




Accessories		Brief description	→ Page/Internet
1	Push-in fitting QS	For connecting standard O.D. tubing	quick star
2	Blanking plug B	3 included in the scope of delivery for PRS manifold block 1 included in the scope of delivery for PAL manifold strip	blanking plug
3	Manifold block PRS		LEERER MERKER
4	Manifold strip PAL		LEERER MERKER
5	Silencer	For fitting in exhaust ports	u
6	Pneumatic valve VL, JH		vl, jh
7	Blanking plate PRSB	For covering an unused valve position	46
8	Blanking cap VTM	For blanking an unused valve position	44
9	Hollow bolt VT	For distribution of compressed air or for separate compressed air supply	44

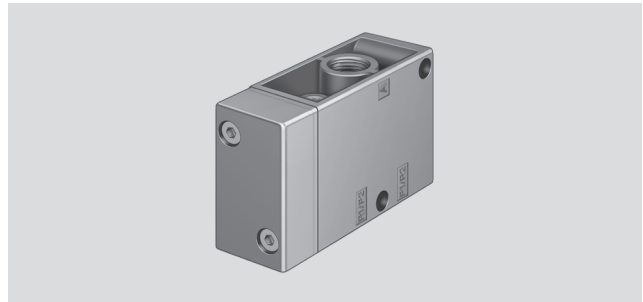
Pneumatic valves VL/O, Tiger Classic

FESTO

Technical data – 3/2-way valves

-  - Flow rate
500 ... 7500 l/min

Wearing parts kits → Page 37



General technical data				
Pneumatic connection	G1/8	G1/4	G1/2	G3/4
Valve function	3/2-way, single solenoid			
Design	Poppet seat			
Lap	Underlap			
Sealing principle	Soft			
Actuation type	Pneumatic			
Reset method	Mechanical spring			
Type of control	Direct			
Pilot air supply	External			
Flow direction	Reversible with restrictions			
Exhaust air function	With flow control option			
Manual override	None			
Type of mounting	Via through-hole or on manifold rail/manifold block			
Mounting position	Any			
Port for venting hole	M5 (only ATEX types)			
Pilot air port 110/12	G1/8	G1/8	G1/4	G1/4
b value	–	–	Q3	–
Nominal size [mm]	5	7	14	19
Standard nominal flow rate [l/min]	500	800	3700	7500
Product weight [g]	150	230	860	1200

Safety data				
Type code	G1/8	G1/4	G1/2	G3/4
Max. switching frequency [Hz]	12	–	–	–
Max. positive test pulse with 0 signal [µs]	2200	–	–	–
Max. negative test pulse with 1 signal [µs]	3700	–	–	–

ATEX	
Type code	VL ... -EX, J- ... -EX
ATEX category for gas	II 2G
Type of ignition protection for gas	c T4
ATEX category for dust	II 2D
Type of ignition protection for dust	c 130 °C
Explosion ambient temperature [°C]	–10 °C ≤ Ta ≤ +60 °C
CE marking (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

Pneumatic valves VL/O, Tiger Classic

Technical data – 3/2-way valves

Operating and environmental conditions					
Pneumatic connection		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/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)			
Operating pressure	Normally closed	[bar]	-0.95 ... +10	-0.95 ... +10	-0.95 ... +10
	Normally open	[bar]	0 ... 10	0 ... 10	0 ... 10
Pilot pressure		See diagram (max. 10 bar)			
Ambient temperature		[°C]	-10 ... +60		
Temperature of medium		[°C]	-10 ... +60		
Storage temperature		[°C]	-20 ... +60		
Approval certificate			c UL us - Recognized (OL)	-	-
Note on materials		RoHS-compliant			
Corrosion resistance class CRC ¹⁾		1			

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Valve switching times [ms]					
Pneumatic connection		G1/8	G1/4	G1/2	G3/4
On		4	7	17	12
Off		10	26	30	35

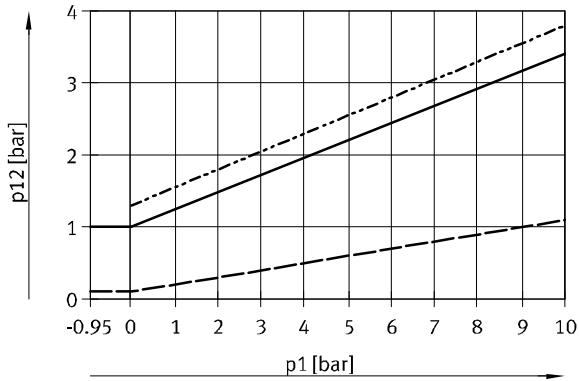
Pneumatic valves VL/O, Tiger Classic

Technical data – 3/2-way valves



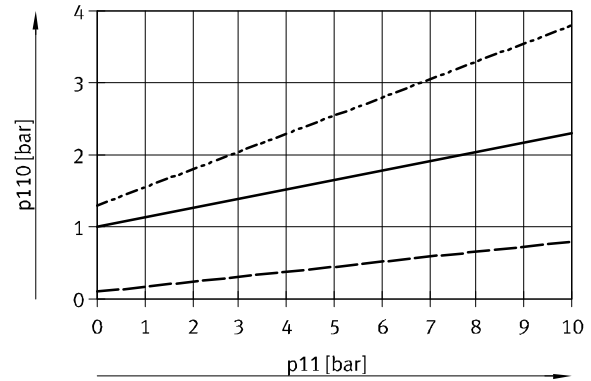
Minimum pilot pressure $p_{12}/p_{14}/p_{110}$ as a function of operating pressure p_1/p_{11}

VL/O-3-1/8 – Normally closed



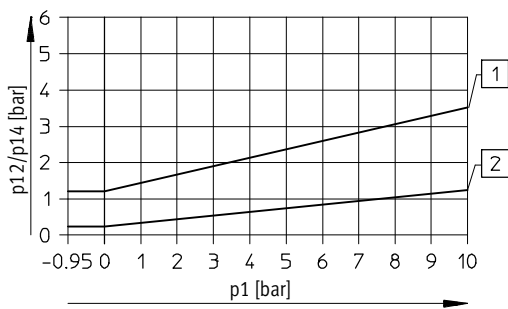
- Switch-on pressure
- - - Exhaust air flow control
- · - Switch-off pressure

VL/O-3-1/8 – Normally open



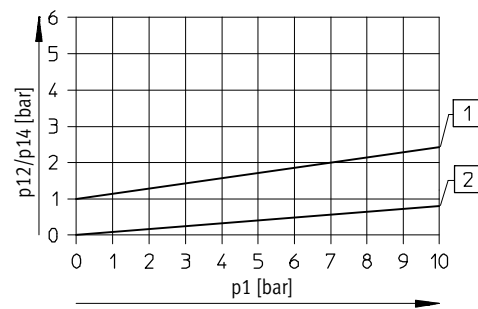
- Switch-on pressure
- - - Exhaust air flow control
- · - Switch-off pressure

VL/O-3-1/4 – Normally closed



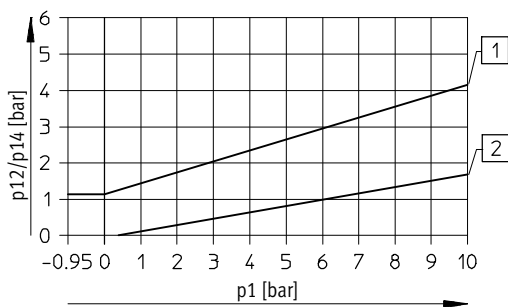
- 1 Switch-on pressure
- 2 Switch-off pressure

VL/O-3-1/4 – Normally open



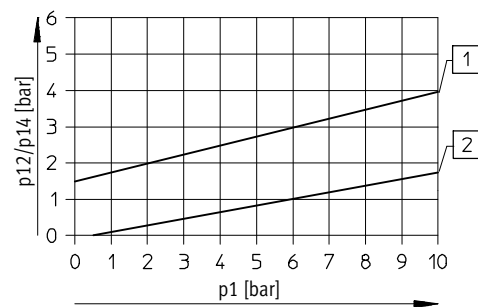
- 1 Switch-on pressure
- 2 Switch-off pressure

VL/O-3-1/2 – Normally closed



- 1 Switch-on pressure
- 2 Switch-off pressure

VL/O-3-1/2 – Normally open

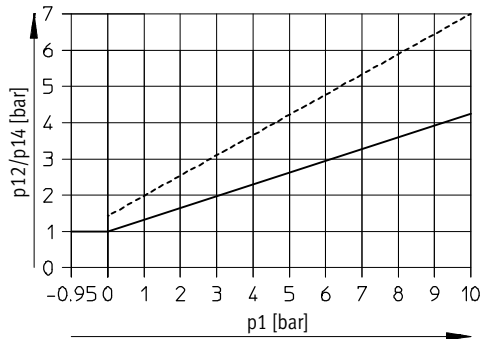


- 1 Switch-on pressure
- 2 Switch-off pressure

Pneumatic valves VL/O, Tiger Classic

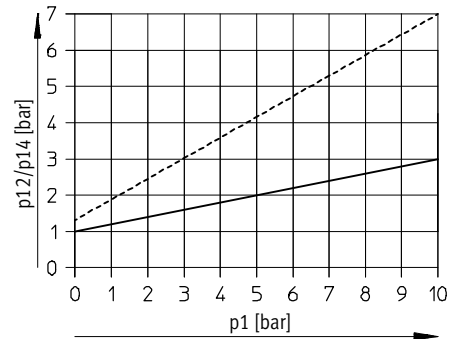
Technical data – 3/2-way valves

VL/O-3-3/4 – Normally closed



----- Exhaust, throttled
 ——— Exhaust, unthrottled

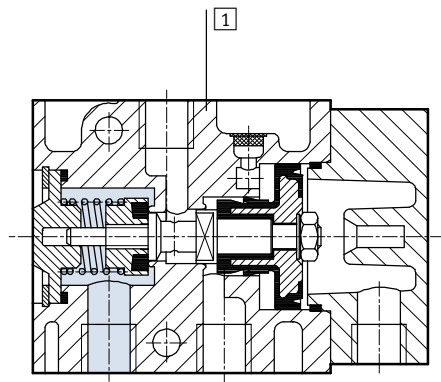
VL/O-3-3/4 – Normally open



----- Exhaust, throttled
 ——— Exhaust, unthrottled

Materials

Sectional view

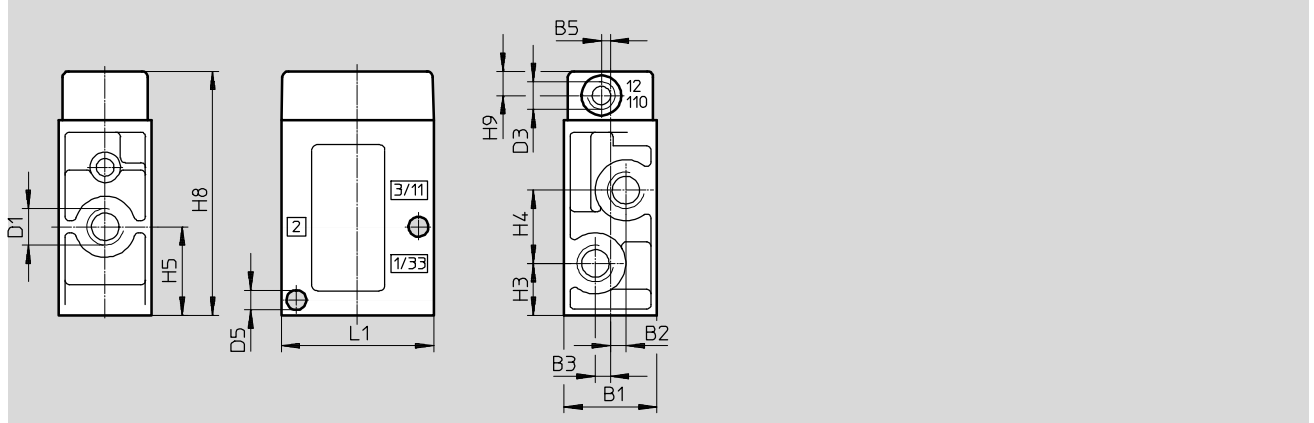


1	Housing	Die-cast aluminium
-	Seals	NBR

Pneumatic valves VL/O, Tiger Classic

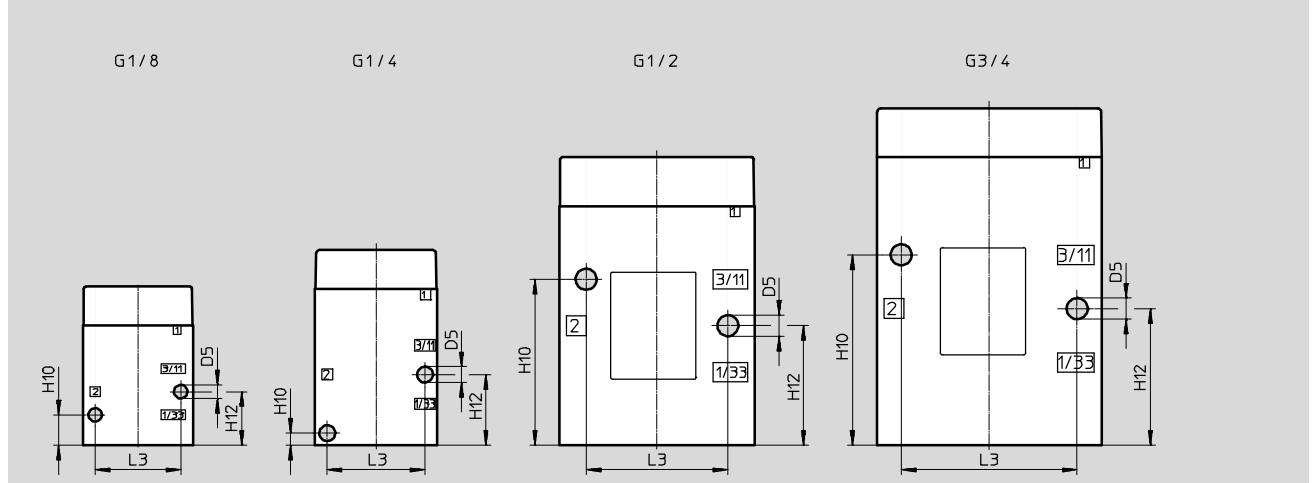
Technical data – 3/2-way valves

Dimensions Download CAD data → www.festo.com
VL/O



Type code	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	-	G1/8	G1/8	6.5	17	24	29	80	8	50
VL/O-3-1/2	52	8	8	-	G1/4	G1/4	8.6	30	38	49	118	10	80
VL/O-3-3/4	68	8	8	-	G1/4	G1/4	8.6	34	44	56	138	10	92

Mounting diagram



Type code	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

Pneumatic valves VL/O, Tiger Classic

Technical data – 3/2-way valves

Ordering data					
Circuit symbol	Description	Pneumatic connection	ATEX category	Part No.	Type code
<p>12 (110)</p> <p>2</p> <p>1(33)</p> <p>3(11)</p>	Mechanical reset, choice of normally closed or normally open	G1/8	–	7803	VL/O-3-1/8-B
			ATEX category → Page 32	536028	VL/O-3-1/8-B-EX
		G1/4	–	9984	VL/O-3-1/4
			ATEX category → Page 32	536029	VL/O-3-1/4-EX
		G1/2	–	9983	VL/O-3-1/2
			ATEX category → Page 32	536030	VL/O-3-1/2-EX
		G3/4	–	10049	VL/O-3-3/4
			ATEX category → Page 32	536031	VL/O-3-3/4-EX

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type code
G1/8	104222	VL/O-3-1/8-B
G1/4	104207	VL/O-3-1/4
G1/2	104208	VL/O-3-1/2

Pneumatic valves VL, Tiger Classic

Technical data – 5/2-way valves

FESTO

Flow rate
500 ... 3700 l/min

Wearing parts kits → Page 41



General technical data				
Pneumatic connection		G1/8	G1/4	G1/2
Valve function		5/2-way, single solenoid		
Design		Poppet seat		
Lap		Underlap		
Sealing principle		Soft		
Actuation type		Pneumatic		
Reset method		Mechanical spring		
Type of control		Direct		
Pilot air supply		External		
Flow direction		Non-reversible		
Manual override		None		
Exhaust-air function		With flow control option		
Type of mounting		Via through-hole or on manifold rail/manifold block		
Mounting position		Any		
Port for venting hole		M5 (only ATEX types)		
Pilot air connection 14		G1/8	G1/8	G1/4
b value		–	–	0.32
c value [l/sbar]		–	–	17.65
Nominal size [mm]		5	7	14
Standard nominal flow rate [l/min]		500	800	3700
Product weight [g]		220	220	1070

Safety data				
Type code		G1/8	G1/4	G1/2
Max. switching frequency [Hz]		12	–	–
Max. positive test pulse with 0 signal [µs]		2200	–	–
Max. negative test pulse with 1 signal [µs]		3700	–	–

Operating and environmental conditions				
Pneumatic connection		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/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure [bar]		0 ... 10	0 ... 8	0 ... 10
Pilot pressure [bar]		See diagram (max. 10 bar)		
Ambient temperature [°C]		–10 ... +60		
Temperature of medium [°C]		–10 ... +60		
Storage temperature [°C]		–20 ... +60		
Approval certificate		c UL us - Recognized (OL)		–
		–	–	CSA (OL) ²⁾
Note on materials		RoHS-compliant		
Corrosion resistance class CRC ¹⁾		1		

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

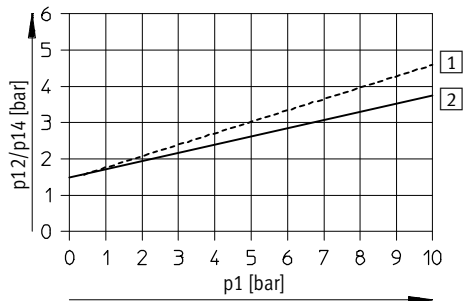
2) Applies to valves without ATEX certification

Pneumatic valves VL, Tiger Classic

Technical data – 5/2-way valves

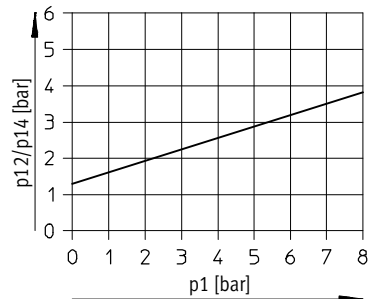
Minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1

VL-5-1/8

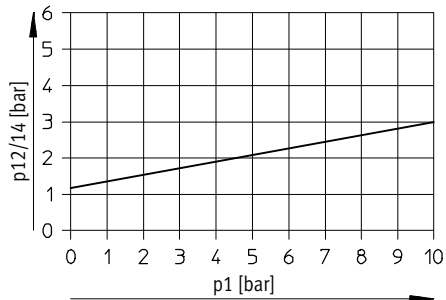


----- Exhaust, throttled
 ————— Exhaust, unthrottled

VL-5-1/4



VL-5-1/2

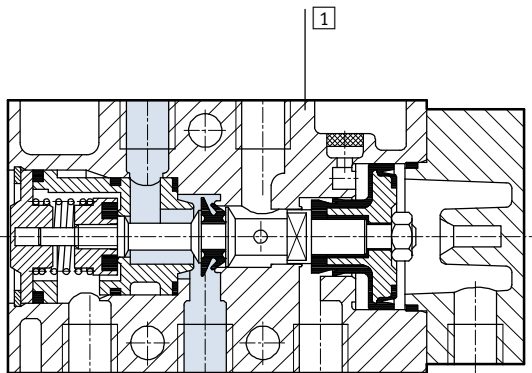


Valve switching times [ms]

Pneumatic connection	G1/8	G1/4	G1/2
On	5	7	3
Off	16	11	27

Materials

Sectional view



1	Housing	Die-cast aluminium
-	Seals	NBR, TPE-U(PU)

Pneumatic valves VL, Tiger Classic

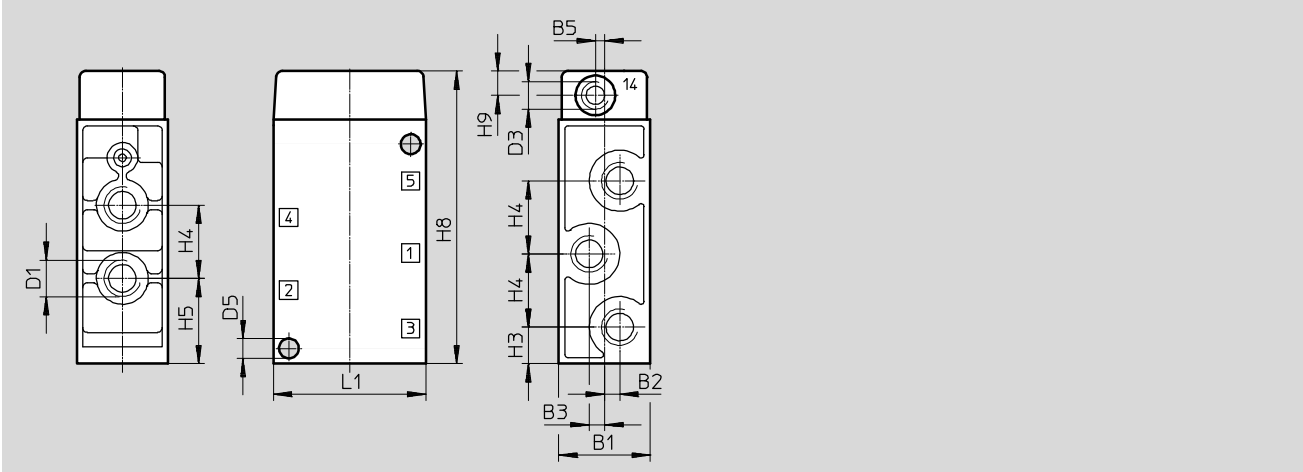
Technical data – 5/2-way valves



Dimensions

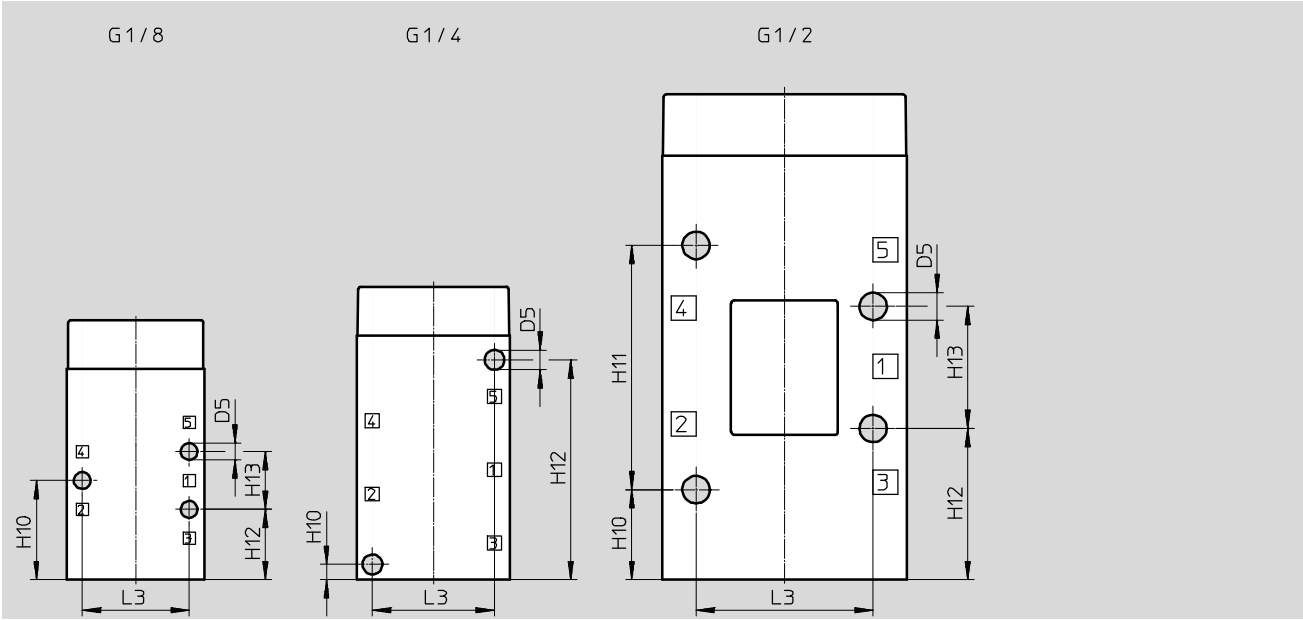
Download CAD data → www.festo.com

VL



Type code	B1	B2	B3	B5	D1	D3	D5 ∅	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	–	G1/8	G1/8	6.5	12	24	28	96	8	50
VL-5-1/2	52	–	8	–	G1/4	G1/4	9	32	38	51	159	10	80

Mounting diagram



Type code	D5 ∅	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

Pneumatic valves VL, Tiger Classic

Technical data – 5/2-way valves

Ordering data					
Circuit symbol	Description	Pneumatic connection	ATEX category	Part No.	Type code
	Mechanical reset method	G1/8	–	9764	VL-5-1/8
			ATEX category → Page 32	536032	VL-5-1/8-EX
		G1/4	–	9199	VL-5-1/4
			ATEX category → Page 32	536033	VL-5-1/4-EX
		G1/2	–	9445	VL-5-1/2
			ATEX category → Page 32	536034	VL-5-1/2-EX

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type code
G1/8	104209	VL-5-1/8¹⁾
G1/4	104211	VL-5-1/4²⁾³⁾
G1/2	104212	VL-5-1/2

- 1) Order assembly sleeves part no. 228389 separately
- 2) Order assembly sleeves part no. 229363 separately
- 3) Use from 1/81 series

Pneumatic valves JH, Tiger Classic

FESTO

Technical data – 5/2-way valves, double pilot valves

Flow rate
600 ... 4500 l/min

Wearing parts kits → Page 46



General technical data			
Pneumatic connection	G1/8	G1/4	G1/2
Valve function	5/2-way, bistable		
Design	Poppet seat		
Lap	Underlap		
Sealing principle	Soft		
Actuation type	Pneumatic		
Type of control	Direct		
Pilot air supply	External		
Flow direction	Non-reversible		
Exhaust air function	With flow control option		
Manual override	–	–	Detenting
Type of mounting	Via through-hole or on manifold rail/manifold block		
Mounting position	Any		
Port for venting hole	M5 (only ATEX types)		
Pilot air port 12/14	G1/8	G1/8	G1/4
b value	–	–	0.3
Nominal size [mm]	5	7	14
Standard nominal flow rate [l/min]	600	1100	4500
Product weight [g]	330	330	1130

Safety data			
Type code	G1/8	G1/4	G1/2
Max. switching frequency [Hz]	12		
Max. positive test pulse with 0 signal [µs]	2200		
Max. negative test pulse with 1 signal [µs]	3700		

Operating and environmental conditions			
Pneumatic connection	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/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure [bar]	0 ... 10	0 ... 8	0 ... 10
Pilot pressure [bar]	See diagram (max. 10 bar)		
Ambient temperature [°C]	–10 ... +60		
Temperature of medium [°C]	–10 ... +60		
Storage temperature [°C]	–20 ... +60		
Note on materials	RoHS-compliant		
Corrosion resistance class CRC ¹⁾	1		

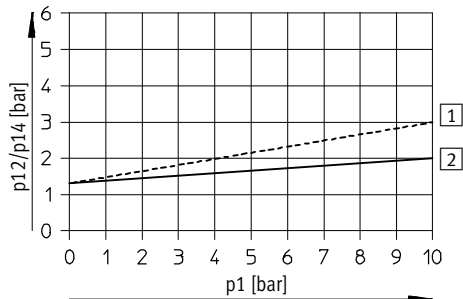
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Pneumatic valves JH, Tiger Classic

Technical data – 5/2-way valves, double pilot valves

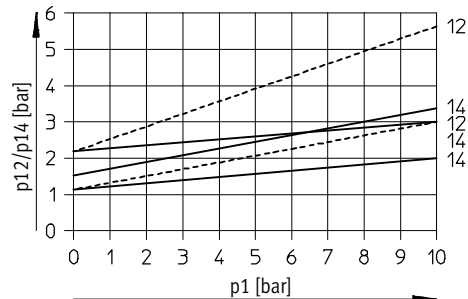
Minimum pilot pressure p_{12}/p_{14} as a function of operating pressure p_1

JH-5-1/8



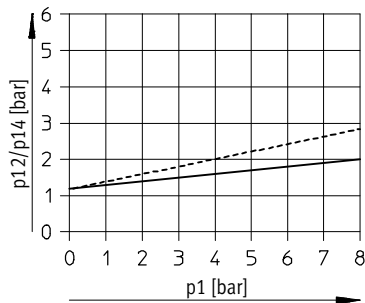
----- Exhaust, throttled
 ————— Exhaust, unthrottled

JDH-5-1/8



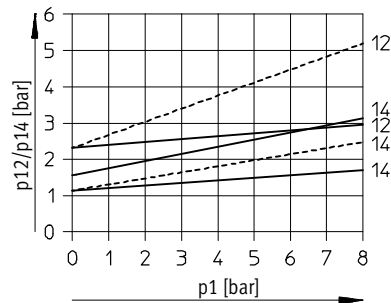
----- Exhaust, throttled
 ————— Exhaust, unthrottled

JH-5-1/4



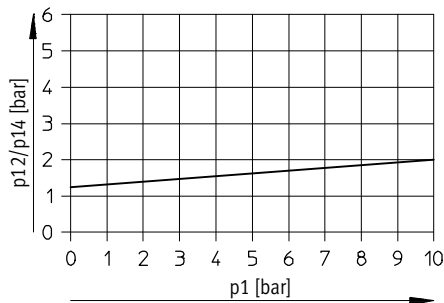
----- Exhaust, throttled
 ————— Exhaust, unthrottled

JDH-5-1/4



----- Exhaust, throttled
 ————— Exhaust, unthrottled

JH-5-1/2



Valve switching times [ms]

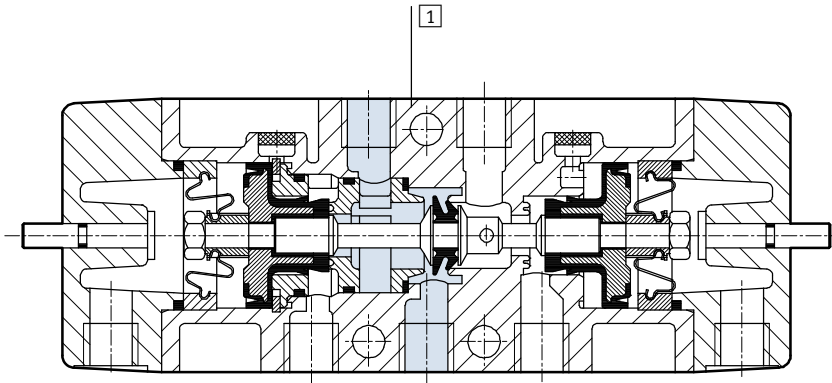
Pneumatic connection	G1/8		G1/4		G1/2	
		Dominant signal at 14		Dominant signal at 14		Dominant signal at 14
Changeover	7	7	7	12	3	–

Pneumatic valves JH, Tiger Classic

Technical data – 5/2-way valves, double pilot valves

Materials

Sectional view

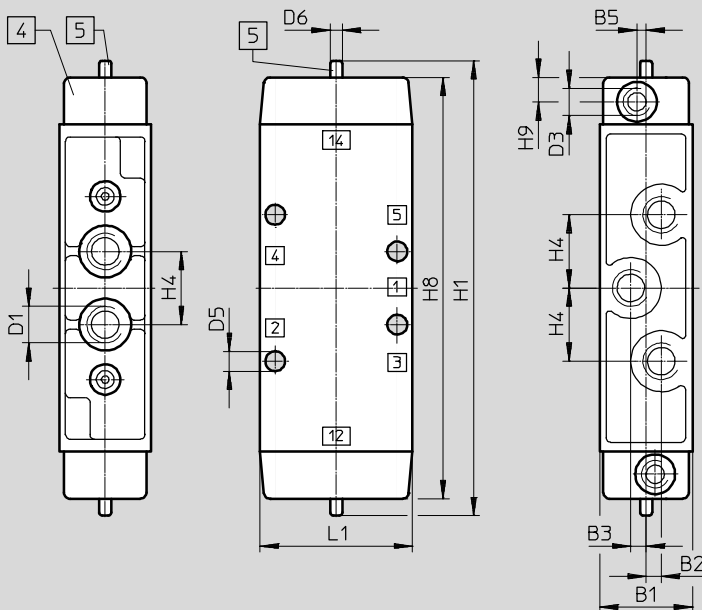


1	Housing	Die-cast aluminium
-	Seals	NBR, TPE-U(PU)

Dimensions

Download CAD data → www.festo.com

JH, JDH



- 4 Cover can be repositioned by 180°
- 5 Manual override

Type code	B1	B2	B3	B5	D1	D3	D5 ∅	D6 ∅	H1	H4	H8	H9	L1
J...-5-1/8	26	3.5	3.5	3	G1/8	G1/8	5.3	5	132	19	120	8	45
J...-5-1/4	30.4	-	5	-	G1/8	G1/8	6.5	5	149	24	138	8	50
J...-5-1/2	52	-	8	-	G1/4	G1/4	9.6+0.2	9.9	193	38	178	10	80

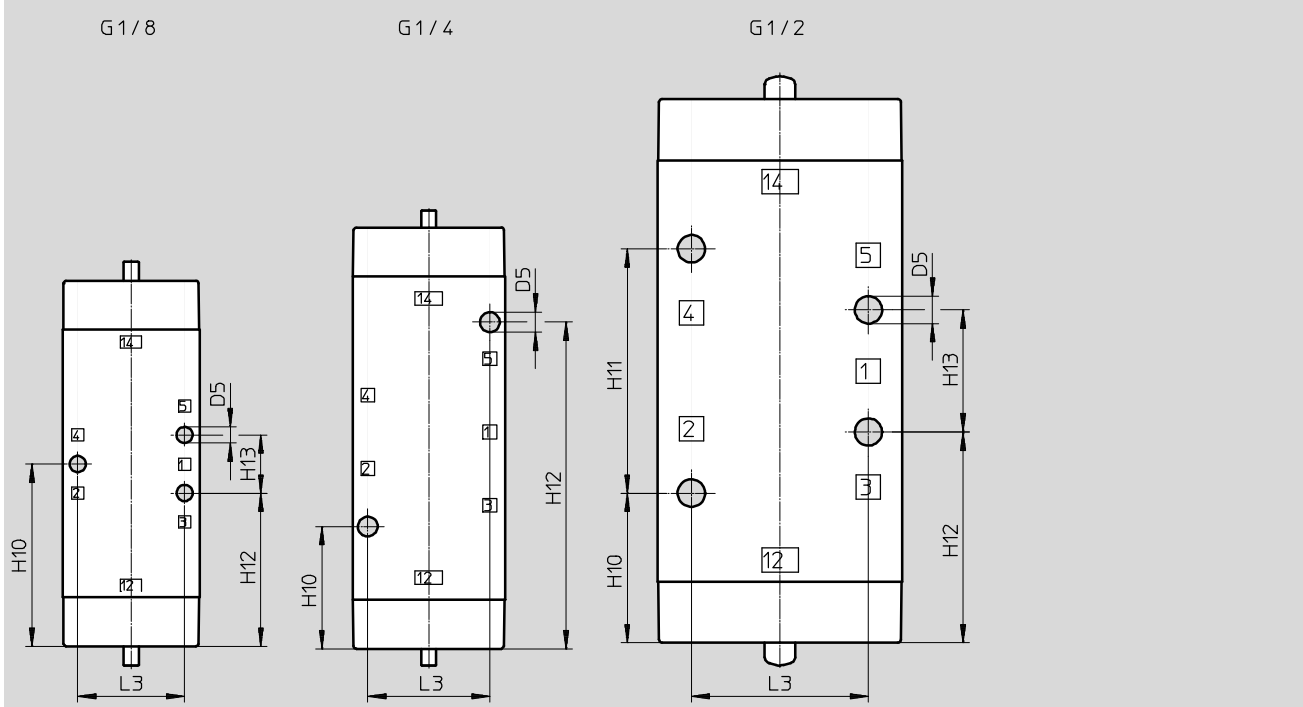
Pneumatic valves JH, Tiger Classic

Technical data – 5/2-way valves, double pilot valves

Dimensions

Download CAD data → www.festo.com

Mounting diagram



Type code	D5 Ø	H10	H11	H12	H13	L3
J...-5-1/8	5.3	60	-	50.5	19	35
J...-5-1/4	6.5	40	-	107	-	40 ±0.2
J...-5-1/2	9.6 +0.2	49	80 ±0.15	69	40 ±0.1	58 ±0.15

Pneumatic valves JH, Tiger Classic

Technical data – 5/2-way valves, double pilot valves

Ordering data					
Circuit symbol	Description	Pneumatic connection	ATEX category	Part No.	Type code
		G1/8	–	8823	JH-5-1/8
			ATEX category → Page 32	536035	JH-5-1/8-EX
		G1/4	–	10408	JH-5-1/4
			ATEX category → Page 32	536036	JH-5-1/4-EX
		G1/2	–	10165	JH-5-1/2
			ATEX category → Page 32	536037	JH-5-1/2-EX
	With dominant signal at 14	G1/8	–	8824	JDH-5-1/8
			ATEX category → Page 32	536038	JDH-5-1/8-EX
		G1/4	–	10409	JDH-5-1/4
			ATEX category → Page 32	536039	JDH-5-1/4-EX

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type code
G1/8	104891	JH-5-1/8¹⁾
G1/4	104892	JH-5-1/4²⁾

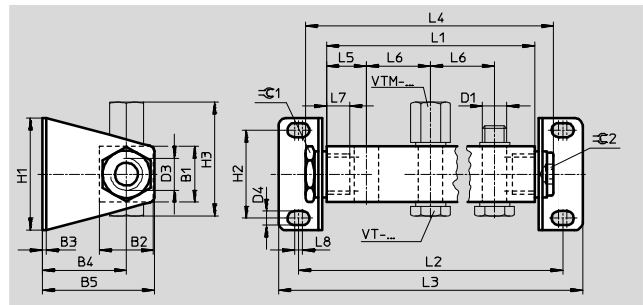
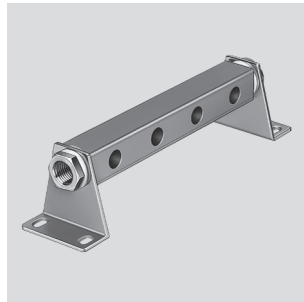
- 1) Order assembly sleeves part no. 228389 separately
- 2) Order assembly sleeves part no. 229363 separately

Solenoid/pneumatic valves, Tiger Classic

Accessories

Manifold strip PAL

Materials:
Manifold: anodised aluminium
Mounting bracket: galvanised steel



Dimensions and ordering data																	
Type	B1	B2	B3	B4	B5	D1	D3	D4	H1	H2	H3	L5	L6	L7	L8	$\varnothing 1$	$\varnothing 2$
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

Number of valve ports	L1	L2	L3	L4	Weight [g]	Part No.	Type
Pneumatic connection G1/8							
2	70	96	114	89	145	8601	PAL-1/8-2
3	104	130	148	123	170	8602	PAL-1/8-3
4	138	164	182	157	190	8603	PAL-1/8-4
5	172	198	216	191	215	8604	PAL-1/8-5
6	206	232	250	225	240	9767	PAL-1/8-6
Pneumatic connection G1/4 ¹⁾							
2	72	100	120	94	330	9188	PAL-5-1/4-2
3	104	132	152	126	405	9189	PAL-5-1/4-3
4	136	164	184	158	480	9190	PAL-5-1/4-4
5	168	196	216	190	555	9191	PAL-5-1/4-5
6	200	228	248	222	630	9192	PAL-5-1/4-6
Pneumatic connection G1/2							
2	139	181	213	164	770	9492	PAL-1/2-2
3	208	250	282	233	915	9493	PAL-1/2-3
4	277	319	351	302	1060	9494	PAL-1/2-4
5	346	388	420	371	1220	9495	PAL-1/2-5
6	415	457	489	440	1370	9496	PAL-1/2-6

1) MOFH-3-1/4 is not suitable for manifold mounting

Solenoid/pneumatic valves, Tiger Classic

Accessories

Hollow bolt

VT

For manifold strip PAL

Note on materials:

RoHS-compliant



Ordering data				
Pneumatic connection	Weight [g]	Material	Part No.	Type
G1/8	6	Steel, chromed	8626	VT-1/8
G1/8	15	Anodised aluminium	5928	VT-1/8-1 ¹⁾²⁾
G1/4	15	Steel, chromed	206147	VT-1/4-2
G1/2	30	Anodised aluminium	9986	VT-1/2

- 1) For valves with G1/8 connection
- 2) Sealing rings included in scope of delivery

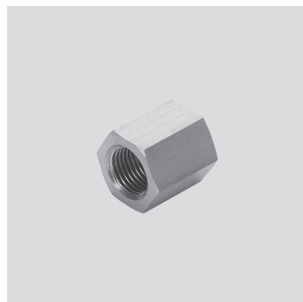
Blanking cap

VTM

For sealing vacant valve positions

Material:

Wrought aluminium alloy



Ordering data				
Pneumatic connection	Weight [g]	Part No.	Type	
G1/8	5	9768	VTM-1/8	
G1/4	5	9768	VTM-1/8 ¹⁾	
G1/4	7	3099	VTM-1/4	
G1/2	28	9987	VTM-1/2	

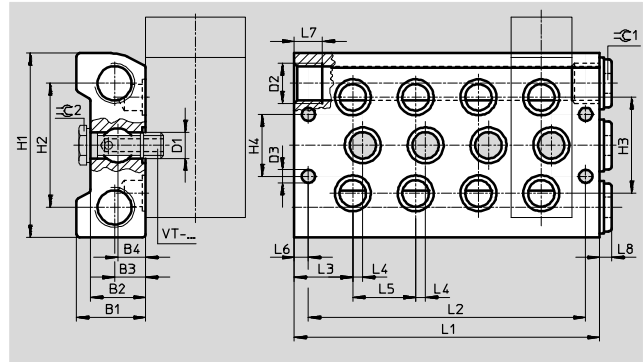
- 1) For valves with G1/8 connection

Solenoid/pneumatic valves, Tiger Classic

Accessories

Manifold block PRS

Material:
anodised aluminium



Dimensions and ordering data																			
Type	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

Number of valve ports	L1	L2	Weight [g]	Part No.	Type
Pneumatic connection G1/8					
2	81	67	360	11898	PRS-1/8-2-B
3	108	94	460	11899	PRS-1/8-3-B
4	135	121	625	11900	PRS-1/8-4-B
5	162	148	650	11901	PRS-1/8-5-B
6	189	175	750	11902	PRS-1/8-6-B
Pneumatic connection G1/4					
2	89.8	75.8	590	10185	PRS-1/4-2
3	121.2	107.2	750	10186	PRS-1/4-3
4	152.6	138.6	900	10187	PRS-1/4-4
5	184	170	1070	10188	PRS-1/4-5
6	215.4	201.4	1230	10189	PRS-1/4-6

Hollow bolt

VT

For manifold block PRS

Material:
Steel, chromed



Ordering data			
Pneumatic connection	Weight [g]	Part No.	Type
G1/8	17	11539	VT-1/8-PRSK
G1/4	32	9499	VT-1/4-PRS

Solenoid/pneumatic valves, Tiger Classic

Accessories

FESTO

Blanking plate

PRSB

For sealing vacant valve positions

Material:

Aluminium



Ordering data			
Pneumatic connection	Weight [g]	Part No.	Type
G1/8	55	11687	PRSB-1/8
G1/4	80	11688	PRSB-1/4

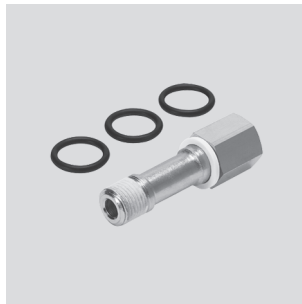
Hollow bolt

VT

For separate compressed air supply on valve

Material:

Steel, chromed

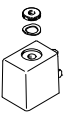
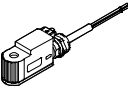




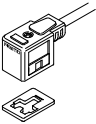
Ordering data			
Pneumatic connection	Weight [g]	Part No.	Type
G1/8	16	12634	VT-1/8-AJK-P
G1/4	24	12910	VT-1/8-AJS-P ¹⁾
G1/4	45	12635	VT-1/4-AJ-P

1) For valves with G1/8 connection

Solenoid/pneumatic valves, Tiger Classic


Accessories

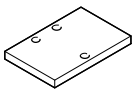
Ordering data – Solenoid coils				Technical data → Internet: msf	
	Description	Voltage	Cable length [m]	Part No.	Type
F solenoid coils, without plug socket					
	-	12 V DC	-	34410	MSFG-12-OD
		24 V DC and 42 V AC, 50 ... 60 Hz	-	34411	MSFG-24/42-50/60-OD
		42 V DC	-	34413	MSFG-42-OD
		24 V AC	-	34415	MSFW-24-50/60-OD
		48 V AC, 50 ... 60 Hz	-	34418	MSFW-48-50/60-OD
		110 V AC, 50 ... 60 Hz and 120 V AC, 60 Hz	-	34420	MSFW-110-50/60-OD
		230 V AC, 50 ... 60 Hz and 240 V AC, 60 Hz	-	34422	MSFW-230-50/60-OD
		240 V AC, 50 ... 60 Hz	-	34424	MSFW-240-50/60-OD
	Explosion-proof	24 V DC	-	536931	MSFG-24-EX
		24 V AC	-	536932	MSFW-24-50/60-EX
		110 V AC	-	536933	MSFW-110-50/60-EX
230 V AC		-	536934	MSFW-230-50/60-EX	
F solenoid coils, cable with open end, 3-wire					
	Explosion-proof	24 V DC	1	8059804	VACF-B-K1-1-1-EX4-M
			5	8059805	VACF-B-K1-1-5-EX4-M
			10	8059806	VACF-B-K1-1-10-EX4-M
			20	8059807	VACF-B-K1-1-20-EX4-M
	24 V AC	1	8059808	VACF-B-K1-1A-1-EX4-M	
		110 V AC	1	8059811	VACF-B-K1-16B-1-EX4-M
		5	8059812	VACF-B-K1-16B-5-EX4-M	
		230 V AC	1	8059809	VACF-B-K1-3A-1-EX4-M
		5	8059810	VACF-B-K1-3A-5-EX4-M	

Ordering data – Plug sockets/connecting cables for F solenoid coils				Technical data → Internet: mssd	
	Description	Voltage	Cable length [m]	Part No.	Type
Plug socket without cable, cable connection with					
	Locking screws (cable connector Pg9)	-	-	34431	MSSD-F
	Locking screws (cable connector M16)	-	-	539710	MSSD-F-M16
	Insulation displacement technology (cable connector M16)	-	-	192746	MSSD-F-S-M16
Connecting cable					
Technical data → Internet: kmf					
	Signal status display with LED	24 V DC	2.5	30935	KMF-1-24DC-2,5-LED
			5	30937	KMF-1-24DC-5-LED
			10	193458	KMF-1-24DC-10-LED
	Without signal status display	Up to 240 V	2.5	30936	KMF-1-230AC-2,5
			5	30938	KMF-1-230AC-5

Solenoid/pneumatic valves, Tiger Classic

Accessories

Ordering data – Illuminating seal			Technical data → Internet: mf-ld	
	Description	Voltage	Part No.	Type
	For F solenoid coils	12 ... 24 V DC	19143	MF-LD-12-24DC
		230 V DC/V AC	19144	MF-LD-230AC

Ordering data – Plate					
	Description	Pneumatic connection		Part No.	Type
For wide solenoid coils					
	As spacer when using wider solenoid coils from other manufacturers (thickness: 6.35 mm)	For 3/2-way valves	G1/8	541667	MPL-TC-3-18
			G1/4	541669	MPL-TC-3-14
		For 5/2-way valves	G1/8	541668	MPL-TC-5-18
			G1/4	541670	MPL-TC-5-14

Festo - Your Partner in Automation



1 Festo Inc.
5300 Explorer Drive
Mississauga, ON L4W 5G4
Canada

Festo Customer Interaction Center
Tel: 1 877 463 3786
Fax: 1 877 393 3786
Email: customer.service.ca@festo.com



2 Festo Pneumatic
Av. Ceylán 3,
Col. Tequesquináhuac
54020 Tlalneantla,
Estado de México

Multinational Contact Center
01 800 337 8669
ventas.mexico@festo.com



3 Festo Corporation
1377 Motor Parkway
Suite 310
Islandia, NY 11749

Festo Customer Interaction Center
1 800 993 3786
1 800 963 3786
customer.service.us@festo.com



4 Regional Service Center
7777 Columbia Road
Mason, OH 45040

Connect with us



www.festo.com/socialmedia



www.festo.com

Subject to change