

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 MFH, Tiger Classic

Technical data - 5/2-way valves

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- M- Flow rate
500...3700 l/min
- P- Voltage
12, 24, 42, 48 VDC
24, 42, 48, 110, 230,
240 VAC

Wearing parts kits @ page 7



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	14
Standard nominal flow rate	[l/min]	500	1000	3700
Product weight	[g]	270	290	1135

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

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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 FN940070

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			
Solenoid coil			
Electrical connection		Plug pins for plug sockets MSSDF, KM F	
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

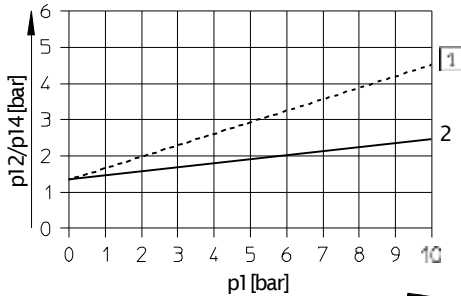
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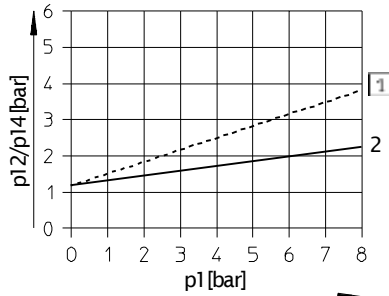
Minimum pilot pressure p_{12} , p_{14} as a function of operating pressure p_1 (external pilot air supply)

MFH5-1/8S



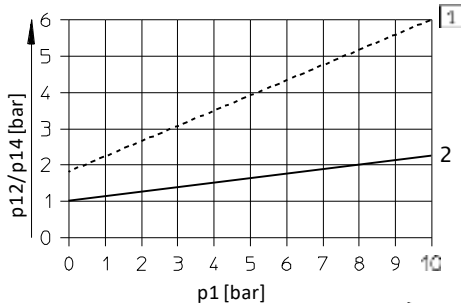
Exhaust, throttled
Exhaust, unthrottled

MFH5-1/4S



Exhaust, throttled
Exhaust, unthrottled

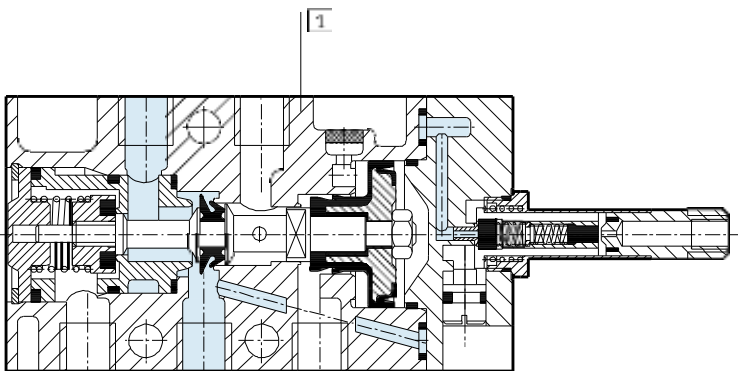
MFH5-1/2S



Exhaust, throttled
Exhaust, unthrottled

Materials

Sectional view



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

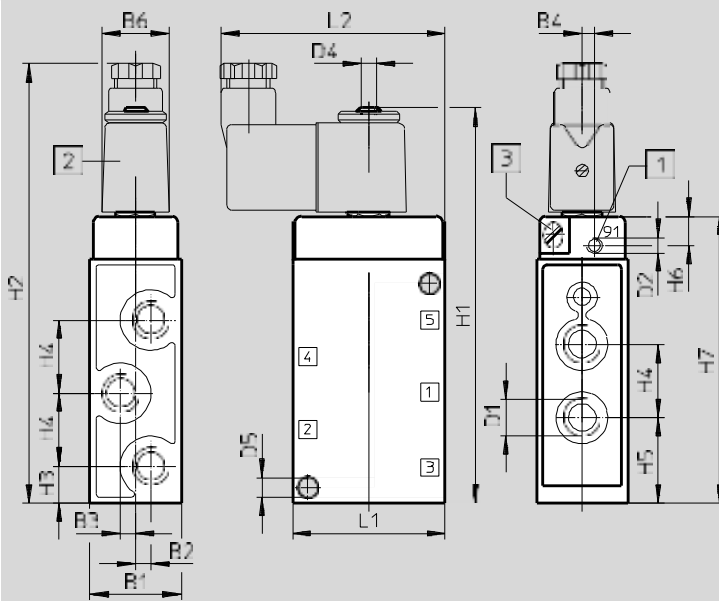
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Technical data - 5/2-way valves

Dimensions

MFH



1. Additional connection for external pilot air with MFH5-...S
2. Solenoid coil can be rotated by 360°
3. Manual override can be turned by 180°

Typecode	B1	B2	B3	B4	B6	D1	D2	D4	D5 Ø
MFH5-1/8	26+0.2	3.5 ±0.15	3.5 ±0.15	-	22	G1/8	M5	M5	5.5
MFH5-1/8S		3.5	3.5	2.7					5.5 - 62
MFH5-1/4	30.4 ±0.1	-	5 ±0.15	-		G1/4	M5		6.5 ±0.14
MFH5-1/4S				4					Min. 6.5
MFH5-1/2	52 ±0.15	-	8	-		G1/2	G1/8		8.5
MFH5-1/2S									

Typecode	H1	H2	H3	H4	H5	H6	H7	L1	L2
MFH5-1/8	117	131	13.5	19	23	-	83	45 ±0.15	71
MFH5-1/8S		134		19 ±0.15		9.5			71.5
MFH5-1/4	128	143	12	24 ±0.15	28 +0.1/-0.2	-	94	50 +0.4/-0.2	73.5
MFH5-1/4S						9.5			
MFH5-1/2	192	208.5	32 ±0.15	38 ±0.15	51 ±0.15	-	158	80 +0.4/-0.2	87.5
MFH5-1/2S						10.5			

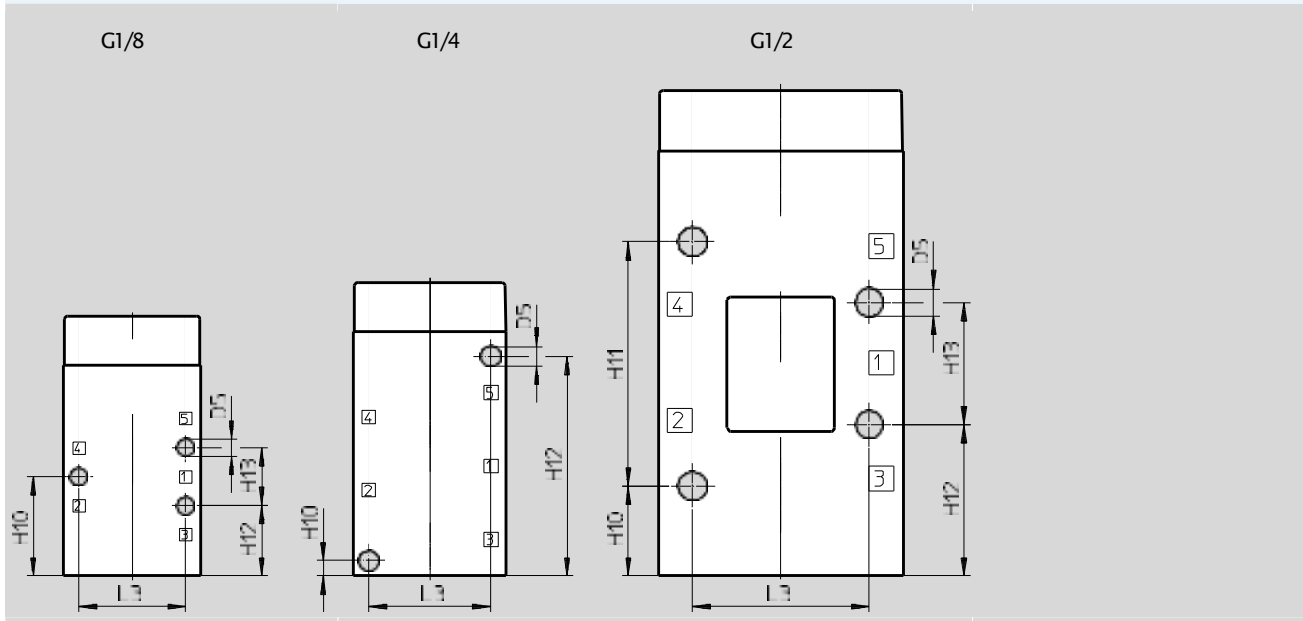
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Technical data - 5/2-way valves

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Dimensions

Mounting diagram



Typecode	D5 Ø	H10	H11	H12	H13	L3
MFH5-1/8	5.5	32.5	-	23	19±0.15	35±0.15
MFH5-1/8S	5.5 - 6.2					
MFH5-1/4	6.5 ±0.14	5	-	72	-	40±0.15
MFH5-1/4S	Min. 6.5					
MFH5-1/2	8.5	29.5	80 ±0.15	49.5	40 ±0.1	58 ±0.15
MFH5-1/2S						

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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 2	535906	MFH-5-1/8-EX
		G1/4	—	6211	MFH-5-1/4
			ATEX category @ Page 2	535907	MFH-5-1/4-EX
		G1/2	—	6420	MFH-5-1/2
			ATEX category @ Page 2	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 2	535909	MFH-5-1/8-S-EX
		G1/4	—	10349	MFH-5-1/4-S
			ATEX category @ Page 2	535910	MFH-5-1/4-S-EX
		G1/2	—	35547	MFH-5-1/2-S
			ATEX category @ Page 2	535911	MFH-5-1/2-S-EX

1) F solenoid coils @ +62 851 0527 8935

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