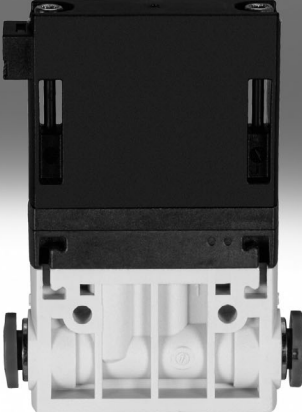


Solenoid valves MHJ, fast-switching valves, NPT



Solenoid valves MHJ, fast-switching valves, NPT

Key features

FESTO

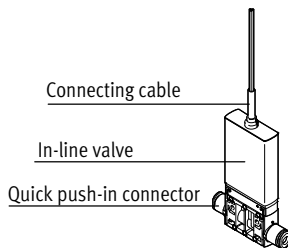
Innovative

- Individual electrical connection via moulded-in cable, control electronics are contained in the valve
- Switching times of less than one millisecond
- Signal control range 3 ... 30 V DC

Reliable

- Convenient servicing thanks to valves that can be replaced quickly and easily
- No electrical plug connectors thanks to integrated control electronics
- Up to 5 billion switching cycles

MHJ10



In-line valve

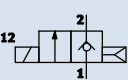
- Integrated quick push-in connector
- Electrical connection with moulded-in connecting cable

Integrated control electronics

- Compact design
- Quick installation

Solenoid valves MHJ, fast-switching valves, NPT

Product range overview

Function	Design	Operating voltage [V DC]	Type	Electrical connection	Switching time ¹⁾		→ Page/ Internet
					Off	On	
2/2-way valve 	MF = Standard nominal flow rate 100 l/min						
	In-line valve	24	MHJ10	With moulded-in cable	0.4	0.8	5
	HF/LP = Standard nominal flow rate 160 l/min						
	In-line valve	24	MHJ10	With moulded-in cable	0.5	1	5
	HF = Standard nominal flow rate 160 l/min						
	In-line valve	24	MHJ10	With moulded-in cable	0.6	1.2	5

1) Switching time at 24 V DC and 4 bar

Solenoid valves MHJ, fast-switching valves, NPT

Type codes

MHJ 10 - S - 2,5 - QS-1/4 - MF - U

Valve series

MHJ	Fast-switching valves
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Width

10	10 mm
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Control electronics

S	With integrated control electronics
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Cable length

0,35	0.35 m
2,5	2.5 m

Push-in connector for in-line valves

QS-1/4	Push-in connector for tubing O.D. 1/4"
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Flow class

MF	Mid flow (100 l/min)
HF/LP	High flow/low pressure (160 l/min, 0.5 ... 4 bar)
HF	High flow (160 l/min)

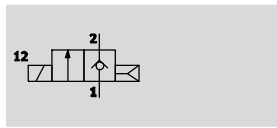
Country code




U	Imperial connection
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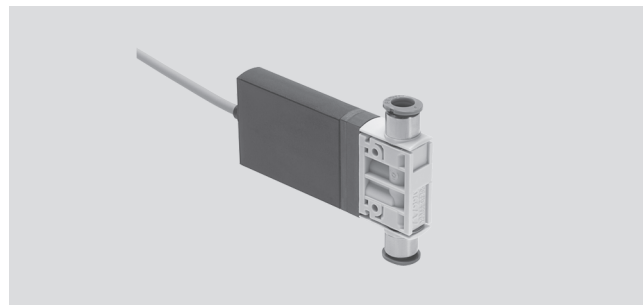
Solenoid valves MHJ10, fast-switching valves, NPT

Technical data

Function



-  Voltage
24 V DC
-  Pressure
+0.5 ... +6 bar
-  Temperature range
-5 ... +60 °C



General technical data			
Type	MF	HF/LP	HF
Valve function	2/2-way valve, single solenoid, closed		
Design	Poppet valve without mechanical spring return		
Sealing principle	Hard		
Note on operation	Do not operate without flow		
Service life in billions of switching cycles ¹⁾	5	0.5	0.5
Actuation type	Electrical		
Type of reset	Pneumatic spring		
Type of control	Direct		
Flow direction	Non-reversible		
Mounting position	Any		
Width [mm]	10 ²⁾		
Grid dimension [mm]	10.5		
Standard nominal flow rate [l/min]	100	160	160
C value [l/sbar]	0.4	0.66	0.66
b value	0.38	0.36	0.36
Type of mounting	In-line installation or via through-holes		
Pneumatic connection 1 and 2	QS-1/4		

- 1) The long service life of the valves can only be achieved with the "hard" sealing principle; however, this results in minor leakage when the valve is closed.
- 2) Min. permitted grid dimension 10.5 mm

Operating and environmental conditions			
Type	MF	HF/LP	HF
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on operating/pilot medium	Lubricated operation not possible		
Operating pressure [bar]	+0.5 ... +6	+0.5 ... +4	+0.5 ... +6
Ambient temperature [°C]	-5 ... +60		
With manifold assembly [°C]	Max. +45	Max. +45	-
Temperature of medium [°C]	-5 ... +60		
Restricted ambient and media temperature	As a function of switching frequency (see graph)		
Storage temperature [°C]	-20 ... +50		
Permissible solenoid surface temperature [°C]	+120		
Corrosion resistance class CRC ¹⁾	2		
CE marking (see declaration of conformity)	To EU EMC Directive ²⁾		
Note on materials	RoHS compliant		

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
- 2) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp → Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary. Max. permissible cable length 2.5 m.

Solenoid valves MHJ10, fast-switching valves, NPT

Technical data

Electrical data				
Type		MF	HF/LP	HF
Operating voltage ¹⁾	[V DC]	24 ±10% = 21.6 ... 26.4		
Control signal range	[V DC]	3 ... 30		
Power	Low-current phase	[W]	2	3.2
	High-current phase	[W]	7	14.5
Reverse polarity protection		For operating voltage		
Additional functions		Spark arresting		
		Reduction of holding current with energy recovery		
		Safety shut-off		
Degree of protection to EN 60529		IP65		
Duty cycle ²⁾	[%]	100	100	–
Operating conditions to DIN VDE 0580 ²⁾	With individual valve	–	–	S3 50% 20 min
	With manifold assembly	–	–	S3 25% 20 min
Electric connection		Cable, 3-wire		

1) Any current limit must be set to at least 1.7 A for the switching operation.

2) Air must flow through the valve continuously.

Switching times and frequencies					
Type		MF	HF/LP	HF	
Maximum switching frequency	[Hz]	1000	500	500	
Tolerance for switching time	On	[%]	±15		
	Off	[%]	+15/–25		
Switching times at 24 V DC					
Pressure 0.5 bar	Switching time on	[ms]	0.8	0.8	1
	Switching time off	[ms]	0.5	0.6	0.8
Pressure 4 bar	Switching time on	[ms]	0.8	1	1.2
	Switching time off	[ms]	0.4	0.5	0.6
Pressure 6 bar	Switching time on	[ms]	0.9	–	1.3
	Switching time off	[ms]	0.4	–	0.6

 Note

The maximum switching frequency that can be achieved decreases as the temperature of the valve increases or as the operating and ambient temperature increases.

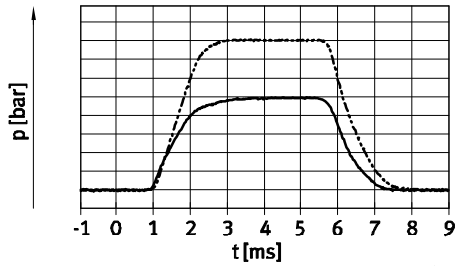
The ambient temperature must therefore be limited accordingly so that the maximum switching frequency can be reached.

Solenoid valves MHJ10, fast-switching valves, NPT

Technical data

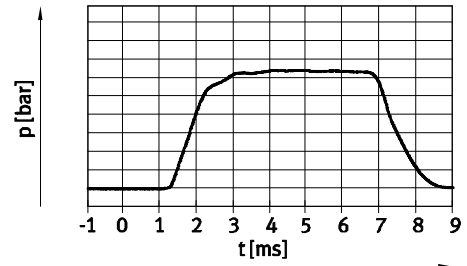
Switching behaviour – Operating pressure

Type MF and HF/LP



— 4 bar
- - - 6 bar

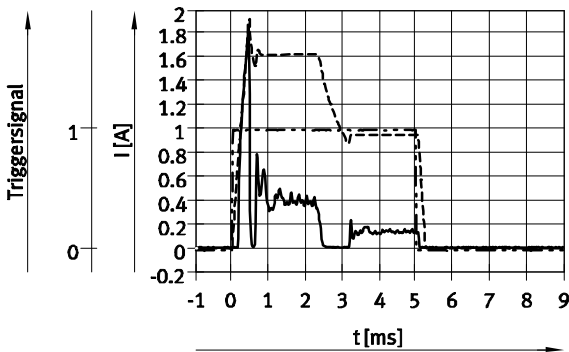
Type HF



— 4 bar

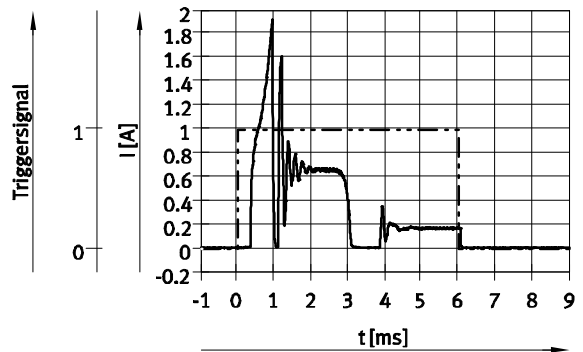
Switching behaviour – Current/voltage curve

Type MF and HF/LP



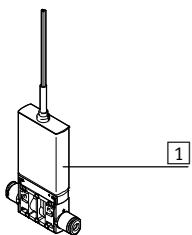
— Current in the supply line at 24 V
- - - Coil current
- · - · Trigger signal

Type HF



— Current in the supply line at 24 V
- - - Trigger signal

Materials



1	Housing	Reinforced PA
		Reinforced PPS
-	Seals	HNBR
-	Screws	Steel
-	Cable sheath	PUR

Solenoid valves MHJ10, fast-switching valves, NPT

Technical data

Dimensions Download CAD data → www.festo.com

Wiring allocation:
 BU = GND
 BN = Operating voltage positive
 BK = Trigger signal

Type	B1	D1	D2	H1	H2	H3	L1	L2	L3	L4
MHJ10	10	1/4"	2.4	68	13	7	50.5	18	32	9.5

Ordering data							
	Description	Standard nominal flow rate	Cable length	Product weight	Operating pressure	Part No.	Type
In-line valve with connecting cable							
	2/2-way solenoid valve	100 l/min	0.35 m	50 g	+0.5 ... +6 bar	562172	MHJ10-S-0,35-QS-1/4-MF-U
			2.5 m	85 g	+0.5 ... +6 bar	565517	MHJ10-S-2,5-QS-1/4-MF-U
	160 l/min	2.5 m	85 g	+0.5 ... +6 bar	567800	MHJ10-S-2,5-QS-1/4-HF/LP-U	
					567504	MHJ10-S-2,5-QS-1/4-HF-U	

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