



## Key features



#### Innovative

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

### Reliable

electronics

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

#### MHJ10



[1] Connecting cables

#### In-line valve

- Integrated quick push-in connector
- Electrical connection with moulded-in connecting cable
- [2] In-line valve
- [3] Push-in connector

#### Integrated control electronics

- Compact design
- Quick installation

# Product range overview

Function	Design	Operating voltage [V DC]	Туре	Electrical connection	Switching Off	g time <sup>1)</sup> On	→ Page/Internet		
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

# Type codes

001	Series	
MHJ9	Solenoid valve	
MHJ10	Solenoid valve	
002	Control electronics	
	Without integrated control electronics (only with MHJ9)	
S	With integrated control electronics (only with MHJ10)	
003	Cable length	
	Without integrated cable	
2,5	2.5 m	
0,35	0.35 m	

004	Pneumatic connection	
	Sub-base valves	
QS-4	Push-in connector 4 mm	
QS-6	Push-in connector 6 mm	
QS-1/4	Push-in connector 1/4	
005	Flow rate	
LF	50 l/min	
MF	100 l/min	
MF/LP	100 l/min, 0.5 4 bar	
HF	160 l/min	
HF/LP	160 l/min, 0.5 4 bar	
006	Country code	
	None	

Imperial connection

U

# Data sheet

Function









#### General technical data

Туре		MF	HF/LP	HF
Valve function		2/2-way valve, single solenoid	l, closed	
Design		Poppet valve without mechan	ical spring return	
Sealing principle		Hard		
Note on operation		Do not operate without flow		
Actuation type		Electrical		
Reset method		Pneumatic spring		
Type of control		Direct		
Flow direction		Non-reversible		
Mounting position		Any		
Width	[mm]	10 <sup>1)</sup>		
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) Min. permitted grid dimension 10.5 mm

#### Operating and environmental conditions

Туре			MF	HF/LP	HF	
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]			
Note on the operating/pilot medium			Lubricated operation not possible			
Operating pressure		[MPa]	+0.05 +0.6	+0.05 +0.4	+0.05 +0.6	
		[bar]	+0.5 +6	+0.5 +4	+0.5 +6	
Ambient temperature		[°C]	-5+60			
	With block mounting	[°C]	Max. +45	Max. +45	-	
Temperature of medium		[°C]	-5+60			
Restricted ambient temperature and temperature of medium			As a function of switching frequency (see graph)			
Storage temperature [°C]		[°C]	-20 +50			
Permissible solenoid surface temperature [°C]		+120				
Corrosion resistance class CRC <sup>1)</sup>			2			
CE marking (see declaration of conformity)		To EU EMC Directive <sup>2)</sup>				
KC mark		KC EMC				
Certification		RCM				
PWIS conformity		VDMA24364-B2-L				
Note on materials		RoHS-compliant				

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

2) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/... → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

### Data sheet

Electrical data							
Туре			MF	HF/LP	HF		
Operating voltage <sup>1)</sup>		[V DC]	24 ±10% = 21.6	26.4			
Trigger signal range		[V DC]	3 30				
Input resistance		[kΩ]	34				
Note on input current			Linear rise				
			0.09 0.44 mA with a trigger signal of 3 15 V DC				
			0.44 15.44 mA with a trigger signal of 15 30 V DC				
Power	Low-current phase	[W]	2	2	3.2		
	High-current phase	[W]	7	7	14.5		
Reverse polarity protection			For operating volt	For operating voltage			
Additional functions			Spark arresting				
				Holding current reduction with energy recovery			
			Safety shut-off				
Degree of protection to EN 60529			IP55				
Duty cycle <sup>2)</sup>		[%]	100	100	-		
Operating conditions to DIN VDE 0580 <sup>2)</sup>	With individual valve		-	-	S3 50% 20 min.		
	With block mounting		-	-	S3 25% 20 min.		
Electrical connection			Cable, 3-wire				

1) If there is a current limit during the switching operation, it must be set to at least 1.7 A.

2) Air must flow through the valve continuously

#### Switching times and frequencies

Туре		MF	HF/LP	HF			
Maximum switching frequency		1000	500	500			
Tolerance for switching time	On	±15	±15				
	Off	+15/-25					
Switching times for 24 V DC when new							
Pressure 0.05 MPa (0.5 bar, 7.25 psi)	Switching time on	0.8	0.8	1			
	Switching time off	0.5	0.6	0.8			
Pressure 0.4 MPa (4 bar, 58 psi)	Switching time on	0.8	1	1.2			
	Switching time off	0.4	0.5	0.6			
Pressure 0.6 MPa (6 bar, 87 psi)	Switching time on	0.9	-	1.3			
	Switching time off	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. L

# Data sheet





Current in the supply line at 24 V

----- Trigger signal

**\_\_\_** Coil current

#### Materials



10<sup>-</sup> 9<sup>-</sup> 2-1.8-8-7-6-5-4-3-2-1-0--1-1.6 1.4 Triggersignal 1.2 I[A] 1 0.8 0.6 0.4 0.2 0 -0.2 0 1 2 3 5 8 9 4 7 -1 6 t[ms]

[1]	Housing	Reinforced PA
		Reinforced PPS
-	Seals	HNBR
-	Screws	Steel
-	Cable sheath	PUR
-	Manifold rail	Anodised wrought aluminium alloy

Current in the supply line at 24 V

2/2-way solenoid valve

100 l/min

160 l/min

0.35 m

2.5 m

2.5 m

50 g

85 g

85 g

### Data sheet



+0.05 ... +0.6 MPa

+0.05 ... +0.6 MPa

+0.05 ... +0.4 MPa

+0.05 ... +0.6 MPa

562172

565517

567800

567504

MHJ10-S-0.35-QS-1/4-MF-U

MHJ10-S-2.5-QS-1/4-MF-U

MHJ10-S-2.5-QS-1/4-HF-U

MHJ10-S-2.5-QS-1/4-HF/LP-U