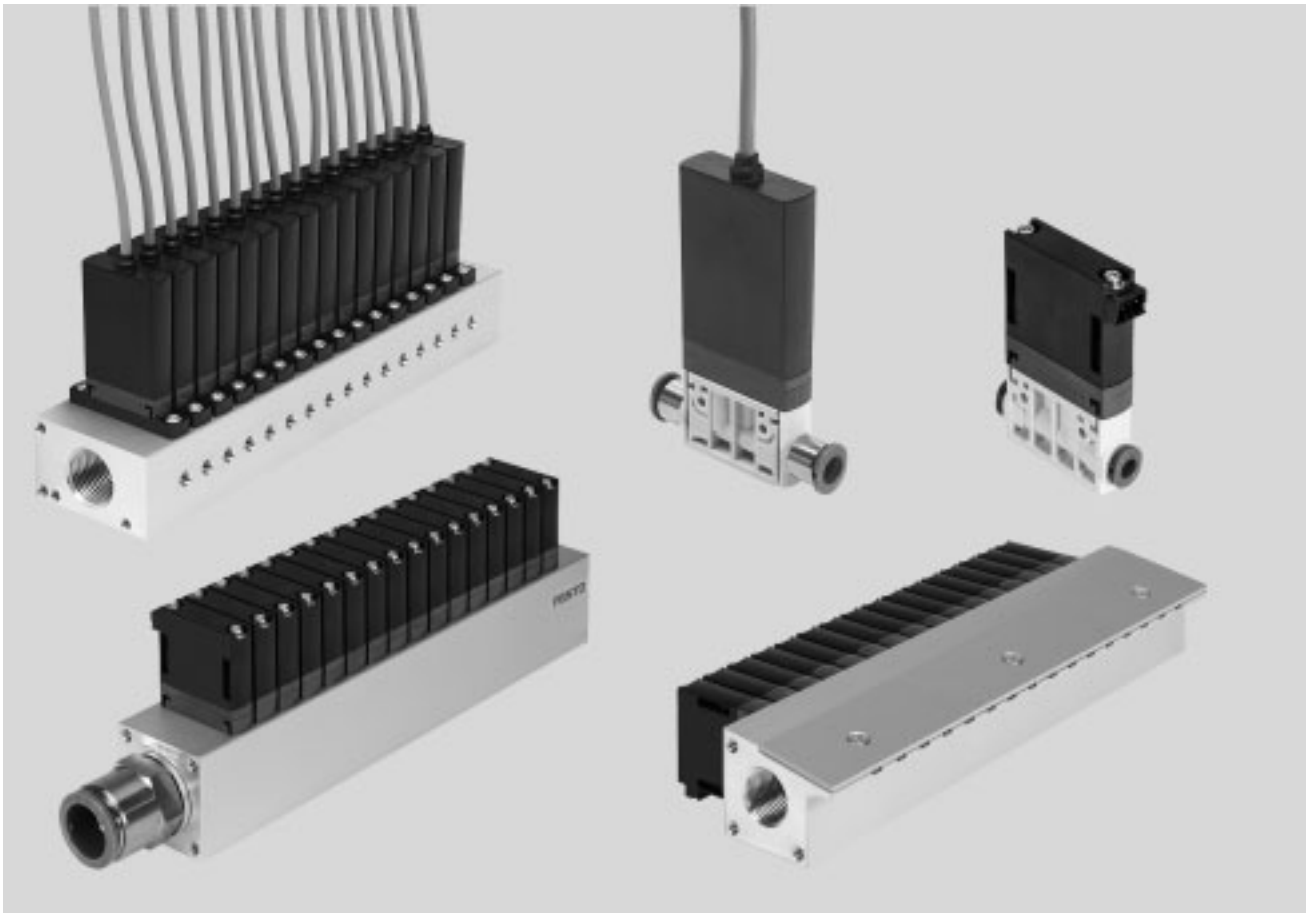
Solenoid valves MHJ, fast-switching valves

FESTO

Solenoid valves MHJ, fast-switching valves

Key features



Innovative

- Individual electrical connection via connecting cable and square plug sockets with integrated control electronics for MHJ9 or via moulded-in cable for MHJ10, control electronics are contained in the valve
- Manifold rail with air nozzle outlet for MHJ9
- Switching times of less than one millisecond
- Signal control range 3 ... 30 V DC

Versatile

- Modular system offering a range of configuration options
- Identical basic valves for individual valve and manifold assembly
- Flexible air supply with air connection at both ends on the manifold rails
- Control of the MHJ9 valves without plug socket with cable MHJ9-KMH subject to consultation with Festo

Reliable

- Reliable servicing thanks to valves that can be replaced quickly and easily
- No electrical plug connectors with MHJ10 thanks to integrated control electronics
- Up to 5 billion switching cycles

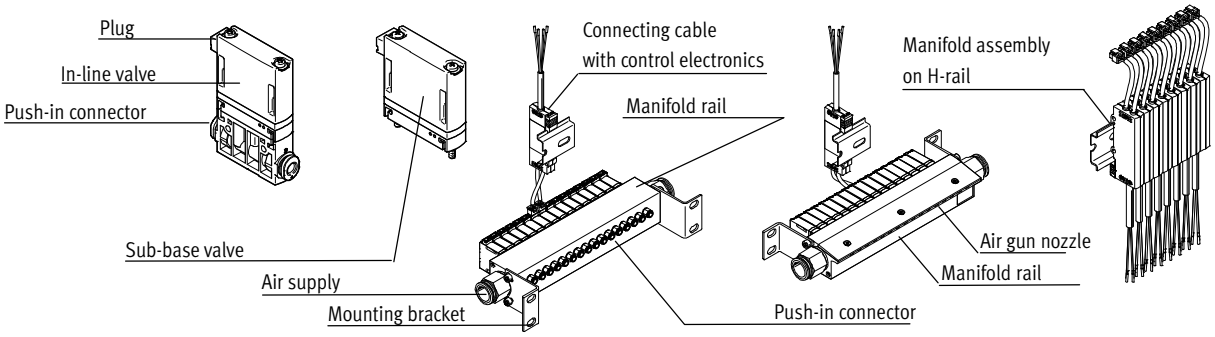
Easy to install

- Solid wall mounting or H-rail mounting of the connecting cables with MHJ9
- Manifold rail for MHJ9 with connecting cable block on H-rail can be mounted directly in the application

Solenoid valves MHJ, fast-switching valves

Key features

MHJ9



In-line valve

- Integrated push-in connector
- Electrical connection IP40
- Modular design

Valve manifold assembly with individual outputs

- Air supply at both ends
- Mounting bracket assembly in 4 directions
- Stable manifold rail

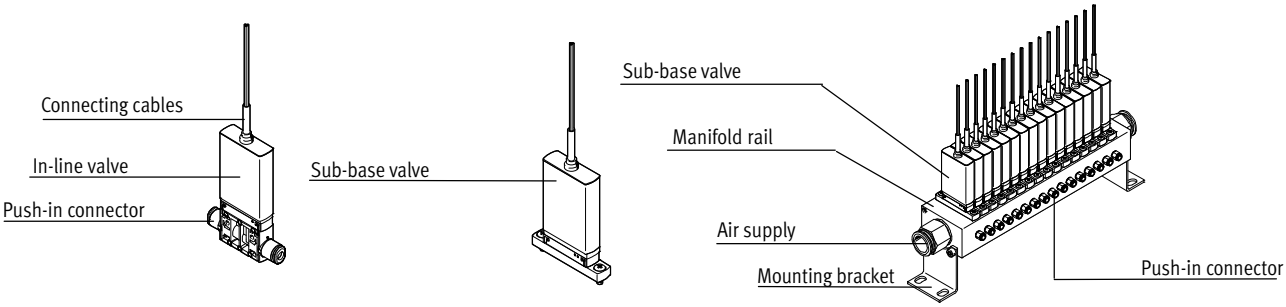
Valve manifold assembly with air gun nozzles

- Air supply at both ends
- Mounting bracket assembly in 2 directions
- Accessible air ducts

Connecting cable with control electronics for two valves

- Individual mounting or on H-rail

MHJ10



In-line valve

- Integrated push-in connector
- Electrical connection with moulded-in connecting cable, IP65
- Modular design

Valve manifold assembly with individual outputs

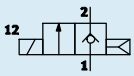
- Air supply at both ends
- Stable manifold rail
- Mounting bracket assembly in two directions

Integrated control electronics

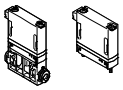
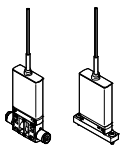
- Compact design
- Quick installation

Solenoid valves MHJ, fast-switching valves

Product range overview

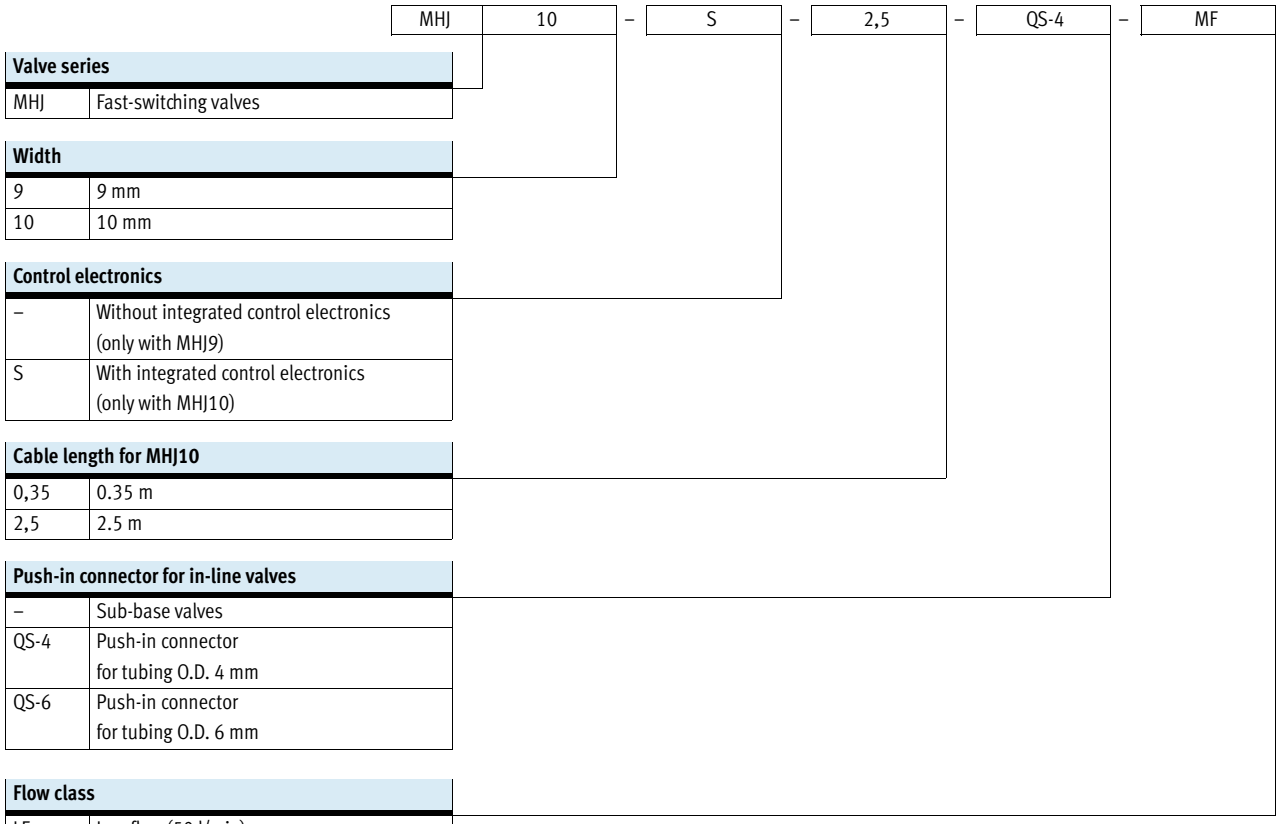
Function	Design	Operating voltage [V DC]	Type	Electrical connection	Switching time[1]		➔ Page/ Internet
					Off	On	
2/2-way valve 	**LF = Standard nominal flow rate 50 l/min**						
	In-line valve	12 … 53	MHJ9	Plug	0.9	0.7	8
		24	MHJ10	With moulded-in cable	1	0.8	17
	Sub-base valve	12 … 53	MHJ9	Plug	0.9	0.7	8
		24	MHJ10	With moulded-in cable	1	0.8	17
	MF = Standard nominal flow rate 100 l/min						
	In-line valve	12 … 53	MHJ9	Plug	0.4	0.8	8
		24	MHJ10	With moulded-in cable	0.4	0.8	17
	Sub-base valve	12 … 53	MHJ9	Plug	0.4	0.8	8
		24	MHJ10	With moulded-in cable	0.4	0.8	17
	HF/LP = Standard nominal flow rate 160 l/min						
	In-line valve	12 … 53	MHJ9	Plug	0.4	1	8
		24	MHJ10	With moulded-in cable	0.5	1	17
	Sub-base valve	12 … 53	MHJ9	Plug	0.4	1	8
		24	MHJ10	With moulded-in cable	0.5	1	17
	HF = Standard nominal flow rate 160 l/min						
	In-line valve	12 … 53	MHJ9	Plug	0.5	1	8
		24	MHJ10	With moulded-in cable	0.6	1.2	17
	Sub-base valve	12 … 53	MHJ9	Plug	0.5	1	8
		24	MHJ10	With moulded-in cable	0.6	1.2	17

1) Switching time at 24 V DC and 4 bar

Mounting options			
Design		In-line valve	Sub-base valve
MHJ9 with plug			
	Direct mounting	■	–
	Manifold assembly	–	■
MHJ10 with moulded-in cable			
	Direct mounting	■	–
	Manifold assembly	–	■

Solenoid valves MHJ, fast-switching valves

Type codes



Valve series	
MHJ	Fast-switching valves

Width	
9	9 mm
10	10 mm

Control electronics	
–	Without integrated control electronics (only with MHJ9)
S	With integrated control electronics (only with MHJ10)

Cable length for MHJ10	
0,35	0.35 m
2,5	2.5 m

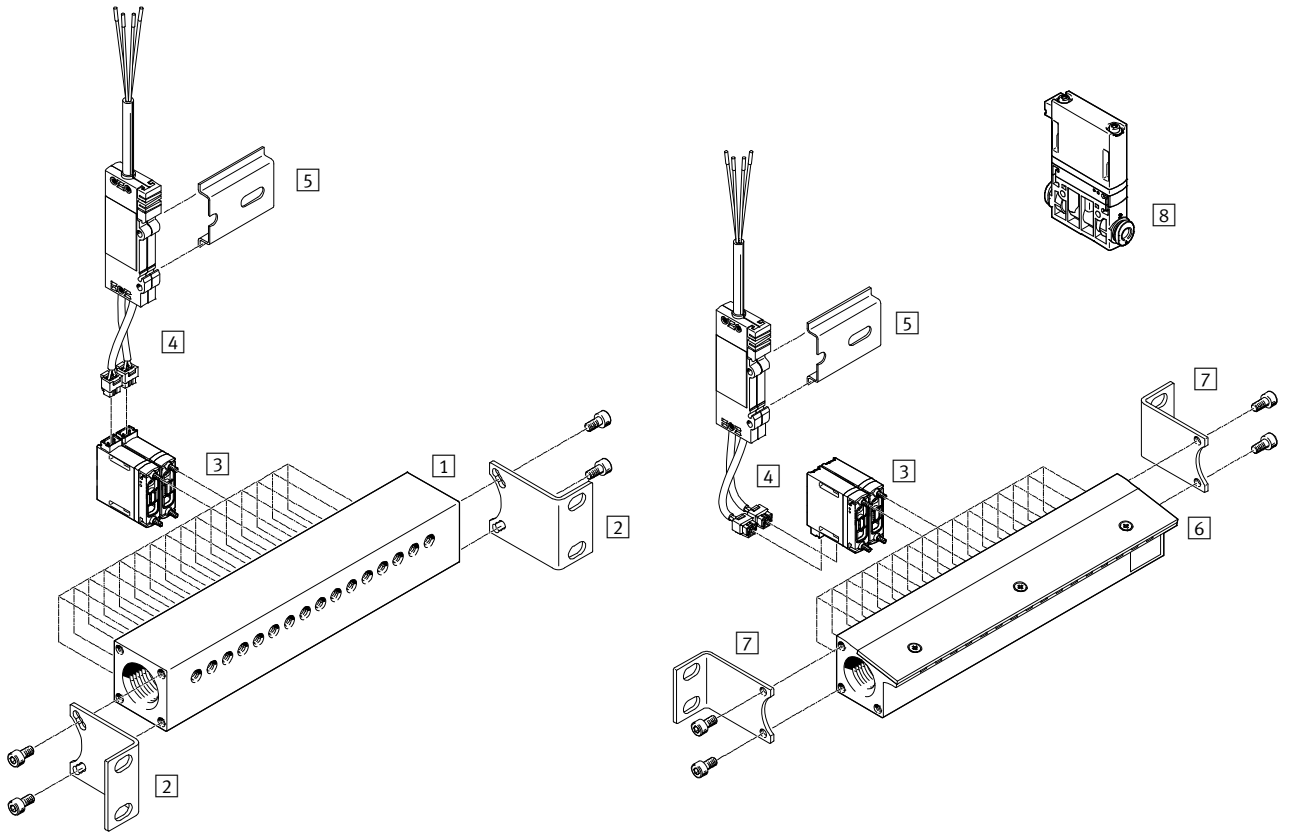
Push-in connector for in-line valves	
–	Sub-base valves
QS-4	Push-in connector for tubing O.D. 4 mm
QS-6	Push-in connector for tubing O.D. 6 mm

Flow class	
LF	Low flow (50 l/min)
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)

Solenoid valves MHJ9, fast-switching valves

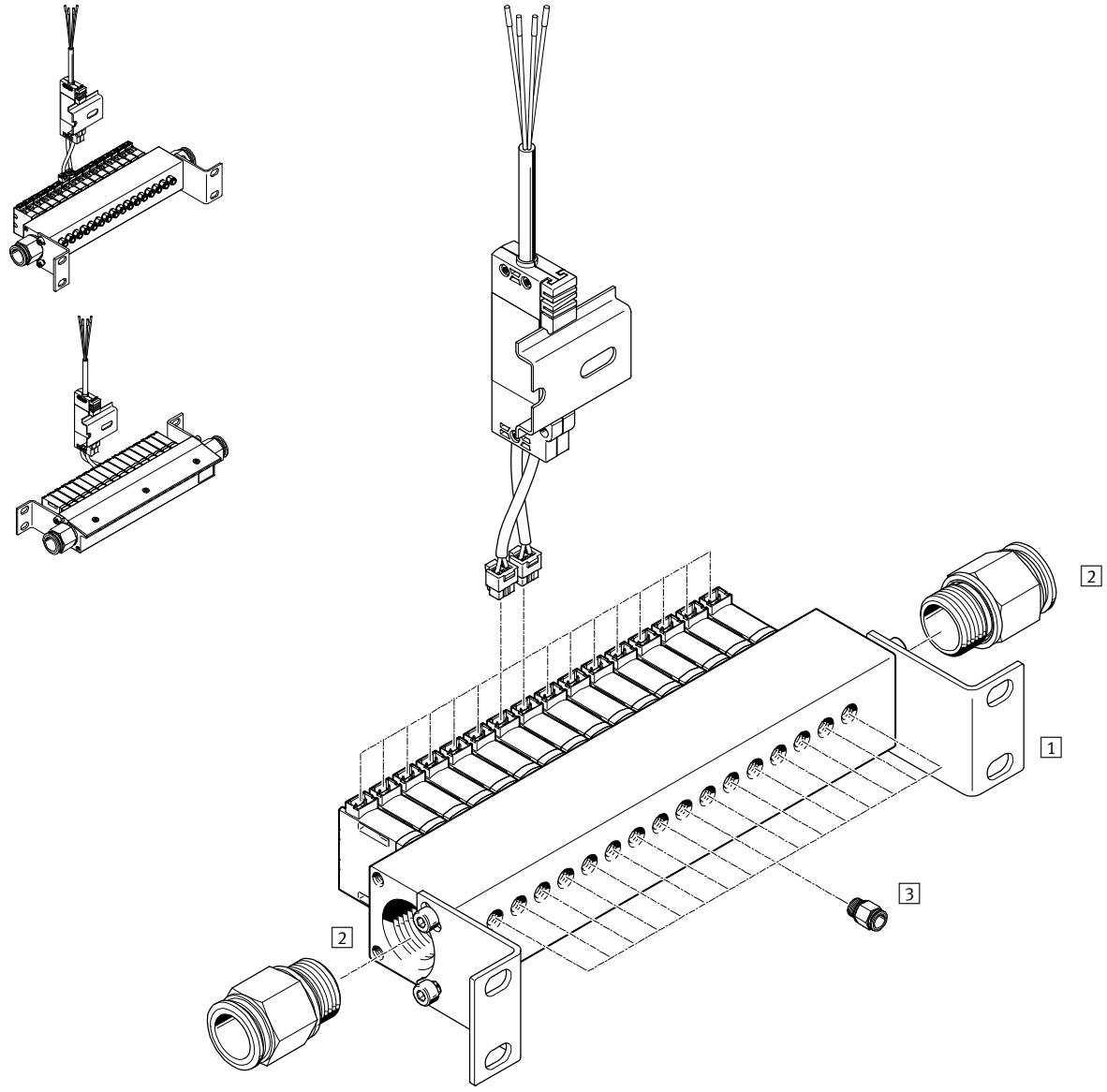
Peripherals overview

Valve manifold assembly



		Type	Brief description	➔ Page/Internet
1	Manifold rail	MHJ9-P16	With 16 valve positions	24
2	Mounting kit	MHJ-HW1	Consisting of 2 mounting brackets and 4 socket head screws	24
3	Sub-base valve	MHJ9	2/2-way solenoid valve	23
4	Connecting cable	MHJ9-KMH	With control electronics for 2 solenoid valves	23
5	H-rail	NRH-35-2000	2 m long	23
6	Manifold rail	MHJ9-PN16	With 16 valve positions	24
7	Mounting kit	MHJ-HW2	Consisting of 2 mounting brackets and 4 socket head screws	24
8	In-line valve	MHJ9	2/2-way solenoid valve	23

Valve manifold assembly with accessories



		Type	Brief description	➔ Page/Internet
1	Manifold rail	MHJ9-P16	With mounting kit MHJ-HW1	24
2	Push-in fitting	QS	For air supply port 1	24
3	Push-in fitting	QS	For valve output 2	24

Solenoid valves MHJ9, fast-switching valves

Data sheet

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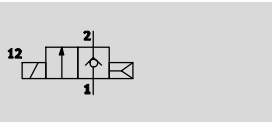
Function



Width
9 mm

Temperature range
–5 … +60 °C

General technical data									
Type		In-line valve MHJ9-QS				Sub-base valve MHJ9			
		LF	MF	HF/LP	HF	LF	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							
Actuation type		Electrical							
Reset method		Pneumatic spring							
Type of control		Direct							
Flow direction		Non-reversible							
Mounting position		Any							
Width	[mm]	9[1]							
Grid dimension	[mm]	9.5							
Standard nominal flow rate[2]	[l/min]	50	100	160	160	50	100	160	160
C value	[l/sbar]	0.2	0.4	0.66	0.66	0.2	0.4	0.66	0.66
b value		0.5	0.38	0.36	0.36	0.5	0.38	0.36	0.36
Type of mounting		In-line installation or via through-holes				On sub-base			
Pneumatic connection 1 and 2		QS4	QS4	QS6	QS6	Sub-base M7			
Product weight	[g]	30				25			
Max. tightening torque for valve mounting	[Nm]	–				0.28			

1) Min. permitted grid dimension 9.5 mm
2) The specified flow rate refers to the valve without sub-base. The maximum flow rate that can be achieved may deviate from the specified value when the valve is mounted on a sub-base.

Operating and environmental conditions						
Type			LF	MF	HF/LP	HF
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]			
Note on the operating/pilot medium			Operation with lubricated medium not possible			
Operating pressure		[bar]	+0.5 … +8	+0.5 … +6	+0.5 … +4	+0.5 … +6
Ambient temperature		[°C]	–5 … +60			
	With manifold assembly	[°C]	Max. +45	Max. +45	Max. +45	–
Temperature of medium		[°C]	–5 … +60			
Restricted ambient and temperature of medium			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			
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.

Electrical data in combination with connecting cable MHJ9-KMH						
Type			LF	MF	HF/LP	HF
Operating voltage range[1]		[V DC]	12 ... 53			
Note regarding operating voltage			Operation only with connecting cable MHJ9-KMH			
Coil resistance		[Ohm]	2.5			
Duty cycle[2]		[%]	100	100	100	–
Operating conditions in accordance with DIN VDE 0580[2]	With individual valve		–	–	–	S3 50% 20 min
	With manifold assembly		–	–	–	S3 15% 20 min
Electrical connection			2-pin, plug KMH			
Degree of protection to EN 60529			IP40			

1) Any current limit must be set to at least 1.7 A for LF, MF and HF/LP valves and to at least 1.85 A for HF valves for the switching operation.
2) Air must flow through the valve continuously

- Note

The specified values only apply when using the connecting cable MHJ9-KMH.

Ask your technical consultant about other actuation options for the MHJ valves.

Switching times and frequencies						
Type			LF	MF	HF/LP	HF
Maximum switching frequency		[Hz]	500	1000	500	500
Tolerance for switching time	On	[%]	±15			
	Off	[%]	+15/–25			
Switching times for 12 V DC when new						
Pressure 4 bar	Switching time on	[ms]	1	1.1	1.3	1.4
	Switching time off	[ms]	0.9	0.4	0.5	0.6
Switching times for 24 V DC when new						
Pressure 0.5 bar	Switching time on	[ms]	0.7	0.7	0.8	0.9
	Switching time off	[ms]	0.9	0.5	0.5	0.7
Pressure 4 bar	Switching time on	[ms]	0.7	0.8	1	1
	Switching time off	[ms]	0.9	0.4	0.4	0.5
Pressure 6 bar	Switching time on	[ms]	–	0.9	–	1.3
	Switching time off	[ms]	–	0.4	–	0.5
Pressure 8 bar	Switching time on	[ms]	0.8	–	–	–
	Switching time off	[ms]	0.9	–	–	–
Switching times for 48 V DC when new						
Pressure 4 bar	Switching time on	[ms]	0.6	0.6	0.8	0.8
	Switching time off	[ms]	0.8	0.4	0.4	0.4

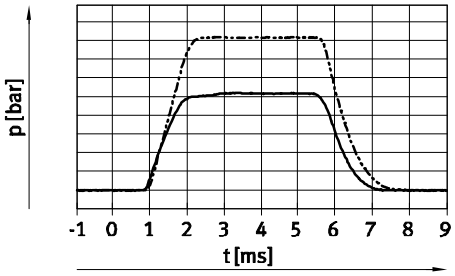
- Note

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.

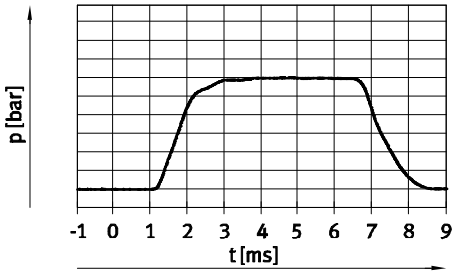
Switching behaviour – Operating pressure

Type LF, MF and HF/LP



4 bar
6 bar

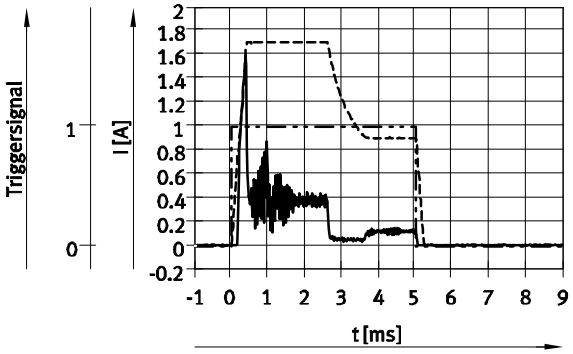
Type HF



4 bar

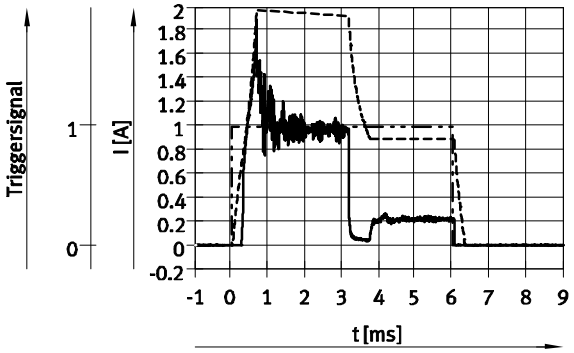
Switching behaviour – Current/voltage curve

Type LF, MF and HF/LP



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

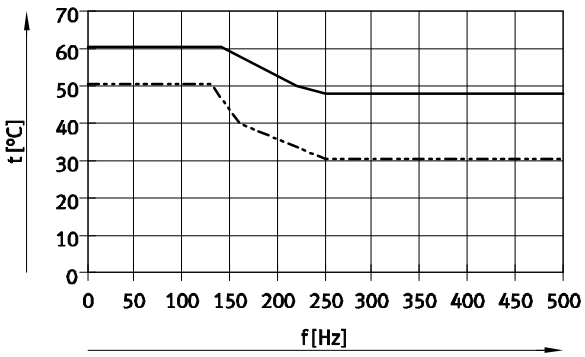
Type HF



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

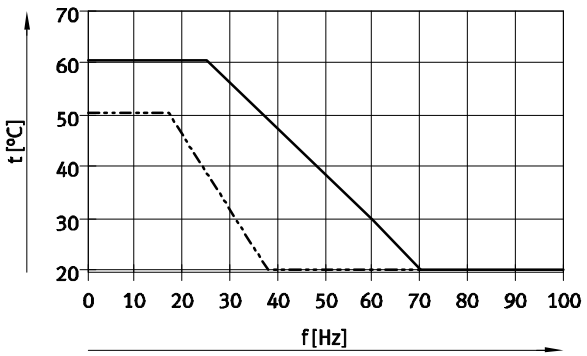
Maximum permissible ambient temperature as a function of switching frequency

Type LF, MF and HF/LP



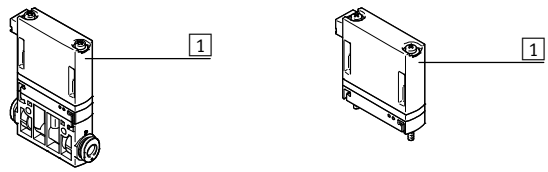
Individual valve, 4 bar
Manifold assembly/sub-base valve, 4 bar

Type HF



Individual valve, 4 bar
Manifold assembly/sub-base valve, 4 bar

Materials

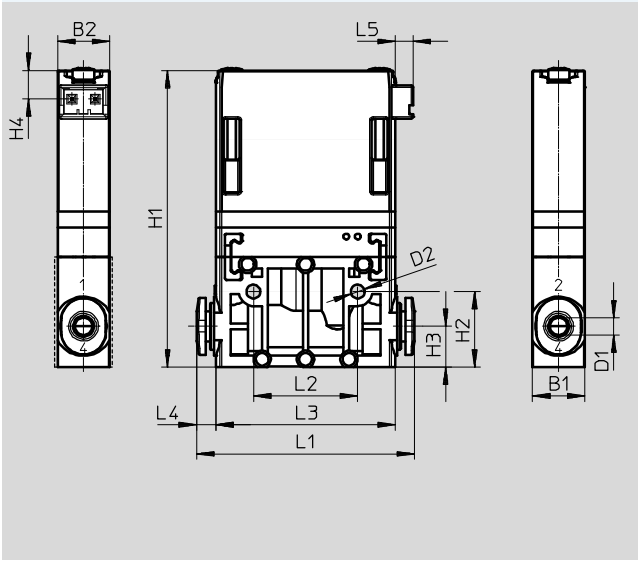


1	Housing	Reinforced PA
–	Seals	HNBR
–	Screws	Steel
–	Manifold rail	Anodised wrought aluminium alloy

Dimensions

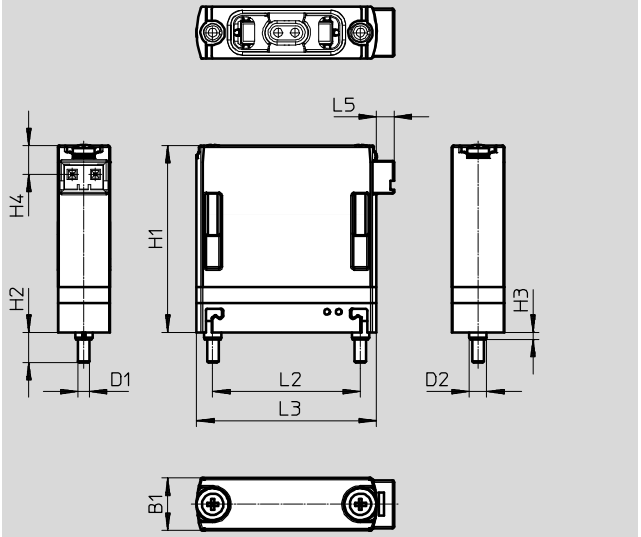
Download CAD data ➔ **www.festo.com**

Semi in-line valve



Type	B1	B2	D1	D2	H1	H2	H3	H4	L1	L2	L3	L4	L5
MHJ9-QS-4	9	9	4	2.4	51	13	7	5	38	18	32	3.2	3
MHJ9-QS-6	10	9	6						51			9.5	

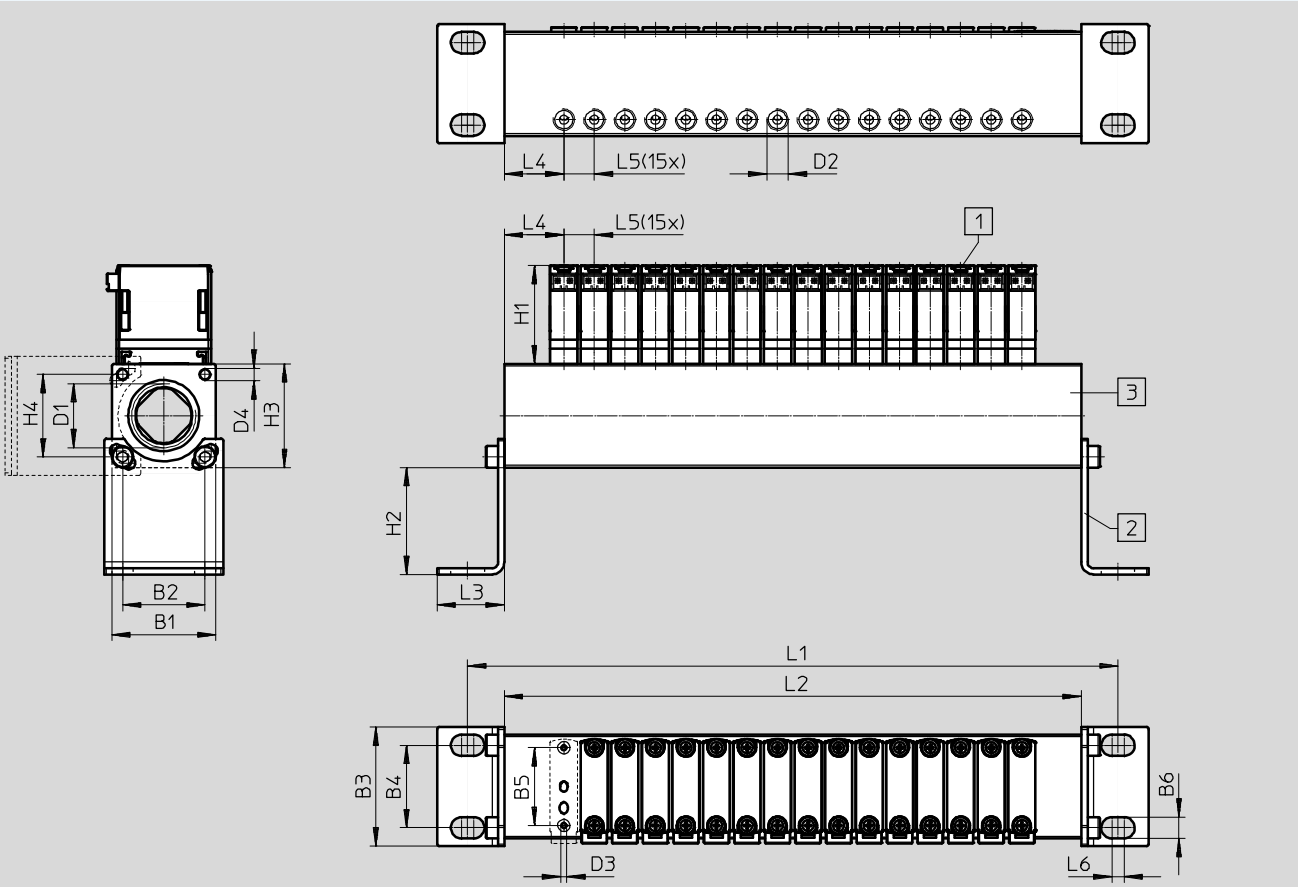
Sub-base valve



Type	B1	D1	D2	H1	H2	H3	H4	L2	L3	L5
MHJ9	9	M2	3	32	5.3	1.2	5	25.5	31	3

Dimensions Download CAD data ➔ **www.festo.com**

Manifold assembly on MHJ9-P16 (with pneumatic connection M7)



1 Sub-base valve MHJ9

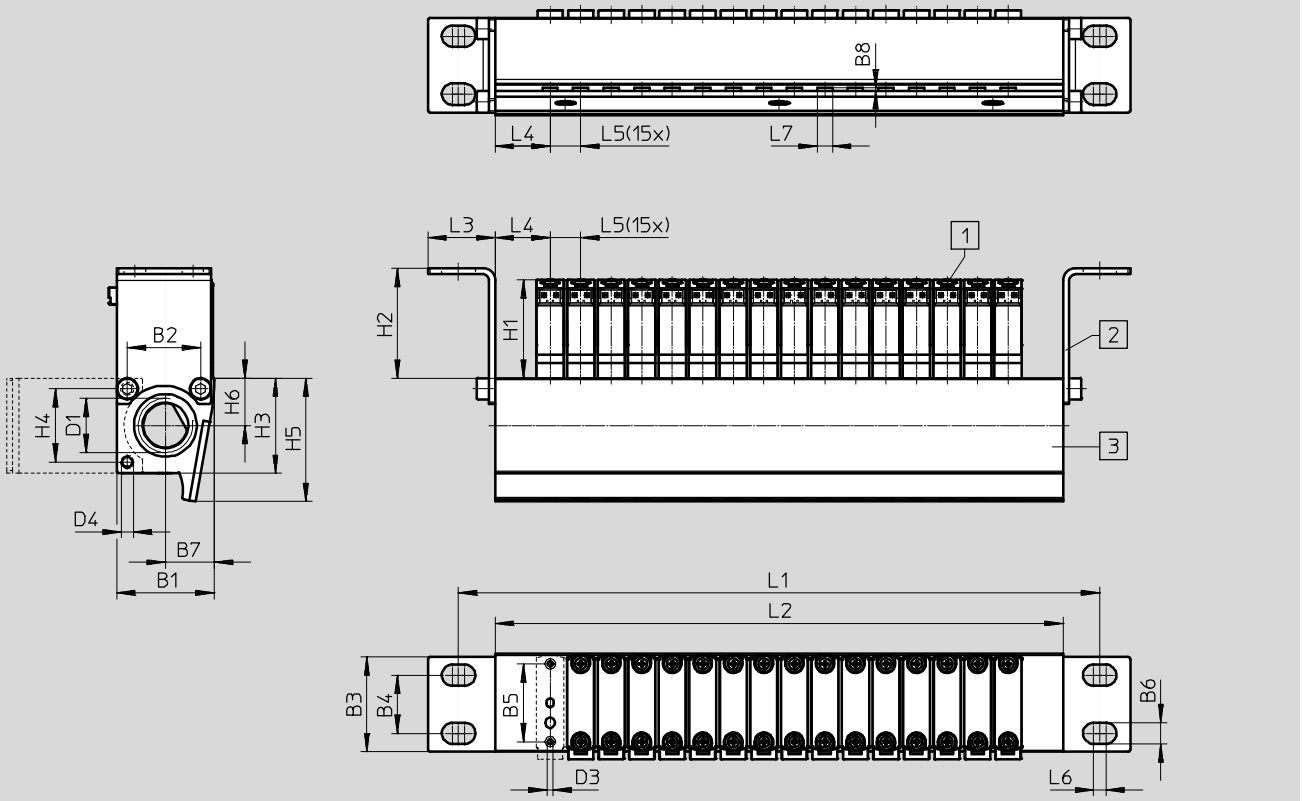
2 Mounting bracket, rotatable in steps of 90°

3 Manifold rail MHJ9-P16 with pneumatic connection M7

Type	B1	B2	B3	B4	B5	B6	D1	D2	D3	D4	H1	H2	H3	H4	L1	L2	L3	L4	L5	L6
MHJ9-P16	34	27	39	27	26	7	G1/2	M7	M2	M4	32	35	34	27	213	189	22	20	10	4

Dimensions Download CAD data ➔ **www.festo.com**

Manifold assembly on MHJ9-PN16 (with air gun nozzles)



1 Sub-base valve MHJ9

2 Mounting bracket, can be fitted in 2 positions

3 Manifold rail MHJ9-PN16 with air gun nozzles

Type	B1	B2	B3	B4	B5	B6	B7	B8	D1	D3	D4	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6	L7
MHJ9-PN16	32	24	31	19	26	7	16	1	G3/8	M2	M4	32	36	31	24	40	16	210	186	22	18	10	4	5

Solenoid valves MHJ9, fast-switching valves

Data sheet

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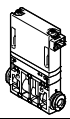
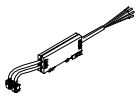
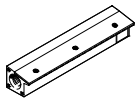
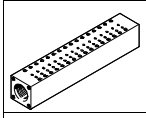
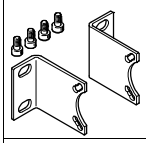
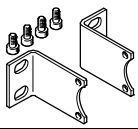
Ordering data

	Description	Standard nominal flow rate	Operating pressure	Part no.	Type
In-line valve without connecting cable					
	2/2-way solenoid valve	50 l/min	+0.5 ... +8 bar	**572079**	**MHJ9-QS-4-LF**
		100 l/min	+0,5 ... +6 bar	**553118**	**MHJ9-QS-4-MF**
		160 l/min	+0.5 ... +4 bar	**567793**	**MHJ9-QS-6-HF/LP**
		160 l/min	+0.5 ... +6 bar	**567790**	**MHJ9-QS-6-HF**
Sub-base valve without connecting cable					
	2/2-way solenoid valve	50 l/min	+0.5 ... +8 bar	**572078**	**MHJ9-LF**
		100 l/min	+0,5 ... +6 bar	**553115**	**MHJ9-MF**
		160 l/min	+0.5 ... +4 bar	**567792**	**MHJ9-HF/LP**
		160 l/min	+0.5 ... +6 bar	**553117**	**MHJ9-HF**

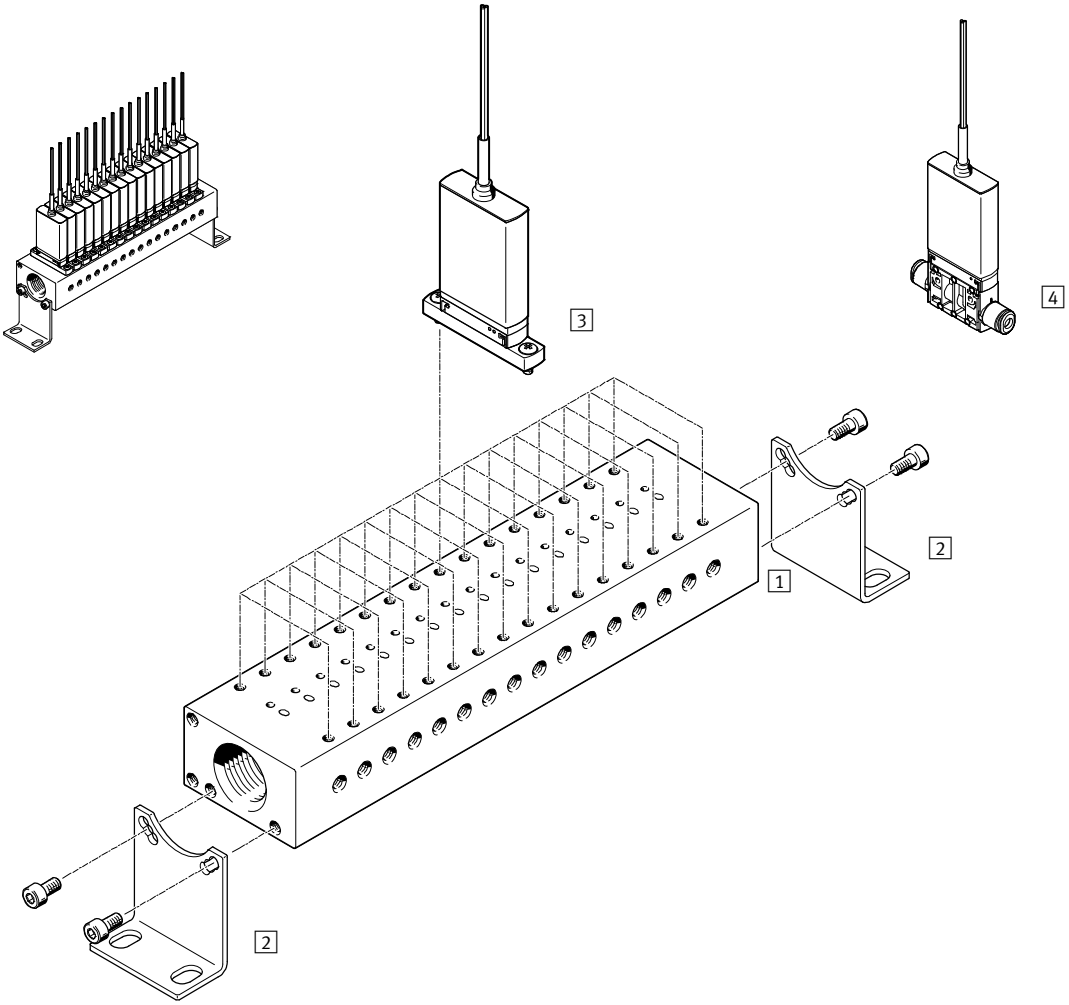
Ordering data – Accessories

	Description			Part no.	Type
Connecting cable with control electronics for 2 valves					
	Mounting on H-rail, for static applications	For LF, MF and HF/LP valves	0.5 m	**553121**	**MHJ9-KMH-0,5-MF**
			2.5 m	**565519**	**MHJ9-KMH-2,5-MF**
		For HF valves	0.5 m	**562170**	**MHJ9-KMH-0,5-HF**
			2.5 m	**567505**	**MHJ9-KMH-2,5-HF**
Manifold rail					
	For 16 valves MHJ9, without mounting bracket, with air gun nozzles			**553123**	**MHJ9-PN16**
	For 16 valves MHJ9, without mounting bracket, with pneumatic connection M7			**553125**	**MHJ9-P16**
Mounting kit					
	For manifold rail MHJ9-P16, consisting of 2 mounting brackets and 4 socket head screws M4x8 DIN912			**565455**	**MHJ-HW1**
	For manifold rail MHJ9-PN16, consisting of 2 mounting brackets and 4 socket head screws M4x8 DIN912			**565456**	**MHJ-HW2**
Push-in fitting for valve output, port 2					
	Connecting thread M7 for tubing O.D.	For manifold rail with LF or MF valves	4 mm (10 pieces)	**153319**	**QSM-M7-4-I**
		For manifold rail with HF or HF/LP valves	6 mm (10 pieces)	**153321**	**QSM-M7-6-I**
Push-in fitting for air supply, port 1					
	Connecting thread G1/2 for tubing O.D.		12 mm (1 piece)	**186104**	**QS-G1/2-12**
			16 mm (1 piece)	**186105**	**QS-G1/2-16**
	Connecting thread G3/8 for tubing O.D.		12 mm (10 pieces)	**186103**	**QS-G3/8-12**
			16 mm (10 pieces)	**186347**	**QS-G3/8-16**

Solenoid valves MHJ10, fast-switching valves

Peripherals overview

Individual valve, valve manifold assembly

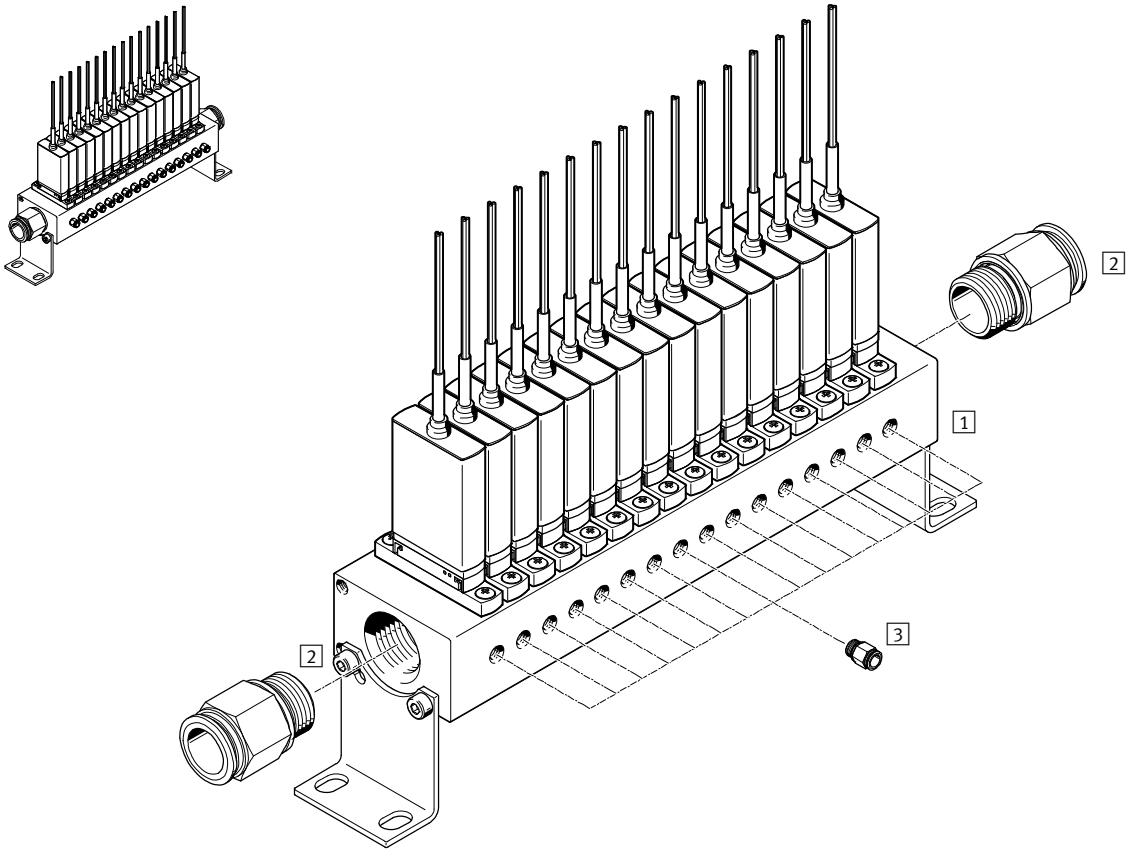


	Type	Brief description	➔ Page/Internet
1 Manifold rail	MHJ10-P16	With 16 valve positions	24
2 Mounting kit	MHJ-HW1	Consisting of 2 mounting brackets and 4 socket head screws	24
3 Sub-base valve	MHJ10	2/2-way solenoid valve	23
4 In-line valve	MHJ10	2/2-way solenoid valve	23

Solenoid valves MHJ10, fast-switching valves

Peripherals overview

Valve manifold assembly with accessories



		Type	Brief description	➔ Page/Internet
1	Manifold rail	MHJ10-P16	With mounting kit MHJ-HW1	24
2	Push-in fitting	QS	For air supply port 1	24
3	Push-in fitting	QS	For valve output 2	24

Solenoid valves MHJ10, fast-switching valves

Data sheet

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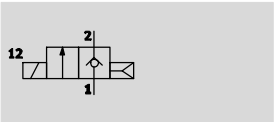
Function



- Width 10 mm
- Flow rate Max. 160 l/min
- Voltage 24 V DC

General technical data									
Type		In-line valve MHJ10-S...QS				Sub-base valve MHJ10-S			
		LF	MF	HF/LP	HF	LF	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							
Actuation type		Electrical							
Reset method		Pneumatic spring							
Type of control		Direct							
Flow direction		Non-reversible							
Mounting position		Any							
Width	[mm]	10[1]							
Grid dimension	[mm]	10.5							
Standard nominal flow rate	[l/min]	50	100	160	160	50	100	160	160
C value	[l/sbar]	0.2	0.4	0.66	0.66	0.2	0.4	0.66	0.66
b value		0.5	0.38	0.36	0.36	0.5	0.38	0.36	0.36
Type of mounting		In-line installation or via through-holes				On sub-base			
Pneumatic connection 1 and 2		QS4	QS4	QS6	QS6	Sub-base M7			
Max. tightening torque for valve mounting	[Nm]	–				0.7			

1) Min. permitted grid dimension 10.5 mm

Operating and environmental conditions						
Type			LF	MF	HF/LP	HF
Operating medium			Compressed air to ISO 8573-1:2010 [7:4:4]			
Note on the operating/pilot medium			Operation with lubricated medium not possible			
Operating pressure		[bar]	+0.5 ... +8	+0.5 ... +6	+0.5 ... +4	+0.5 ... +6
Ambient temperature		[°C]	–5 ... +60			
	With manifold assembly	[°C]	Max. +45	Max. +45	Max. +45	–
Temperature of medium		[°C]	–5 ... +60			
Restricted ambient and media temperature			As a function of the 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.

Electrical data						
Type			LF	MF	HF/LP	HF
Operating voltage[1]		[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 at a trigger signal of 3 … 15 V DC			
			0.44 … 15.44 mA at a trigger signal of 15 … 30 V DC			
Power	Low-current phase	[W]	2	2	2	3.2
	High-current phase	[W]	7	7	7	14.5
Reverse polarity protection			For operating voltage			
Additional functions			Spark arresting			
			Holding current reduction with energy recovery			
			Safety shut-off			
Degree of protection to EN 60529			IP65			
Duty cycle[2]		[%]	100	100	100	–
Operating conditions in accordance with DIN VDE 0580[2]	With individual valve		–	–	–	S3 50% 20 min
	With manifold assembly		–	–	–	S3 15% 20 min
Electrical 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			LF	MF	HF/LP	HF
Maximum switching frequency		[Hz]	500	1000	500	500
Tolerance for switching time	On	[%]	±15			
	Off	[%]	+15/–25			
Switching times for 24 V DC when new						
Pressure 0.5 bar	Switching time on	[ms]	0.7	0.8	0.8	1
	Switching time off	[ms]	0.9	0.5	0.6	0.8
Pressure 4 bar	Switching time on	[ms]	0.8	0.8	1	1.2
	Switching time off	[ms]	1	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
Pressure 8 bar	Switching time on	[ms]	0.9	–	–	–
	Switching time off	[ms]	0.9	–	–	–

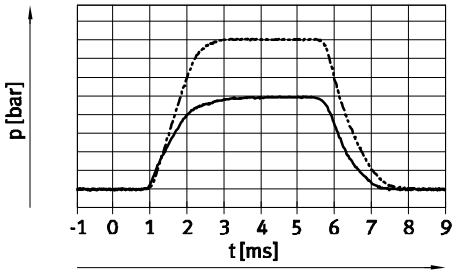
Note

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.

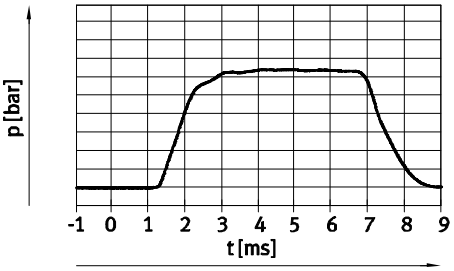
Switching behaviour – Operating pressure

Type LF, MF and HF/LP



4 bar
6 bar

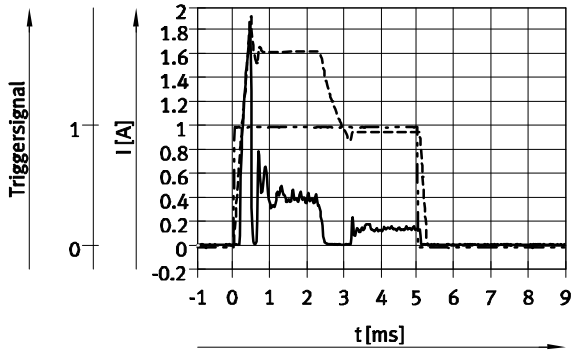
Type HF



4 bar

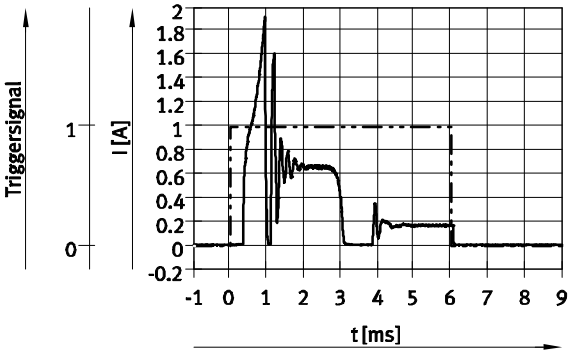
Switching behaviour – Current/voltage curve

Type LF, MF and HF/LP



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

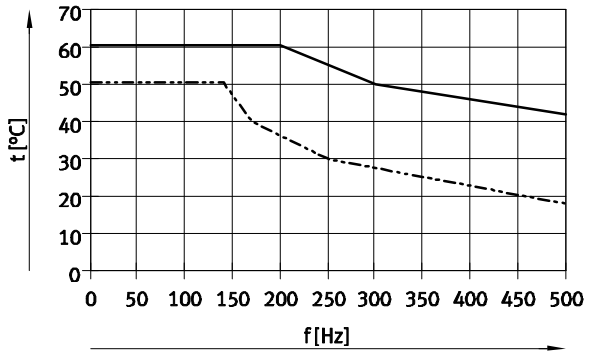
Type HF



Current in the supply line at 24 V
Trigger signal

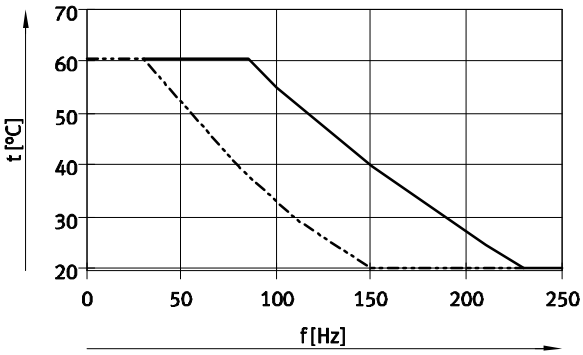
Maximum permissible ambient temperature as a function of switching frequency

Type LF, MF and HF/LP



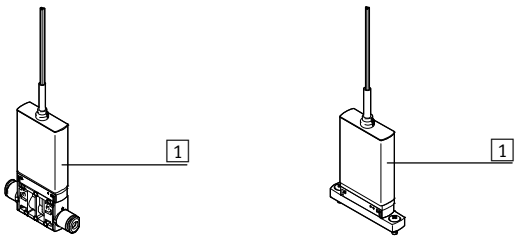
Individual valve, 4 bar
Manifold assembly/sub-base valve, 4 bar

Type HF



Individual valve, 4 bar
Manifold assembly/sub-base valve, 4 bar

Materials

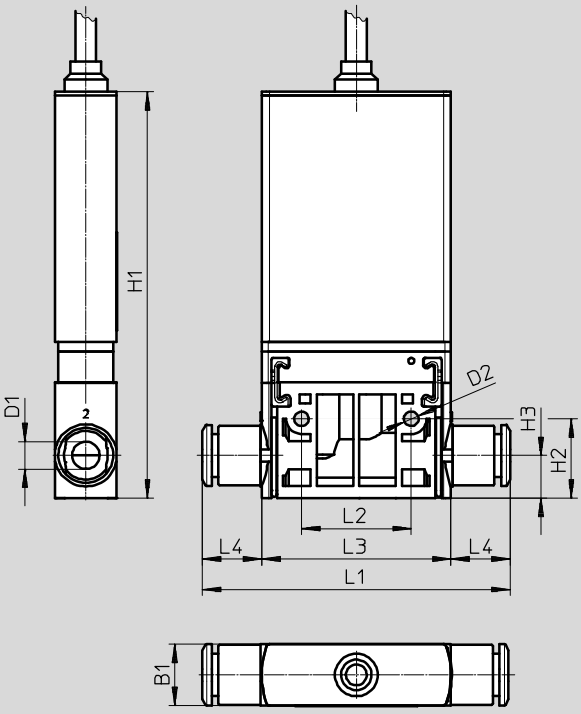


1	Housing	Reinforced PA
		Reinforced PPS
–	Seals	HNBR
–	Screws	Steel
–	Cable sheath	PUR
–	Manifold rail	Anodised wrought aluminium alloy

Dimensions

Download CAD data ➔ **www.festo.com**

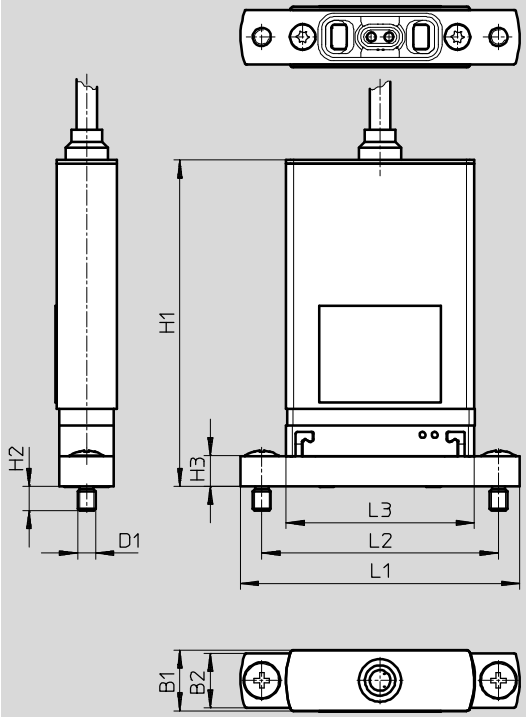
Semi in-line valve



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

Type	B1	D1	D2	H1	H2	H3	L1	L2	L3	L4
MHJ10-S...QS4	10	4	2.4	68	13	7	50.5	18	32	9.5
MHJ10-S...QS6		6								

Sub-base valve

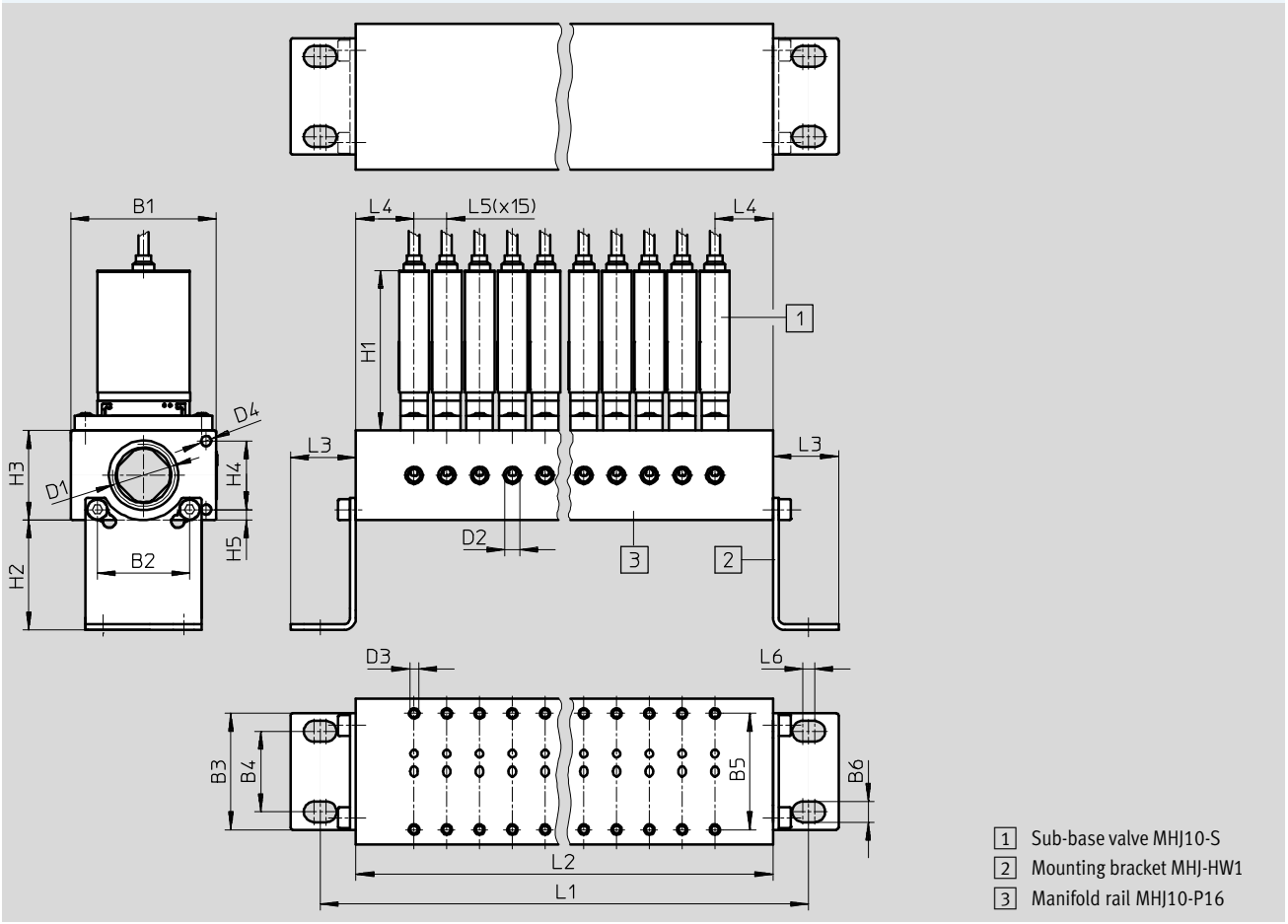


Wiring allocation:
BU = GND
BN = Operating voltage positive
BK = Trigger signal

Type	B1	B2	D1	H1	H2	H3	L1	L2	L3
MHJ10-S	10	9	M3	54	4	5	46	39	31

Dimensions Download CAD data ➔ **www.festo.com**

Manifold assembly



Type	B1	B2	B3	B4	B5	B6	D1	D2	D3	D4	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6
MHJ10-P16	49	31	39	27	39	7	G1/2	M7	M3	M4	54	37	30	23	3.5	228	204	22	20	11	4

Solenoid valves MHJ10, fast-switching valves

Data sheet

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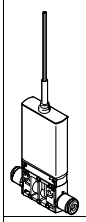
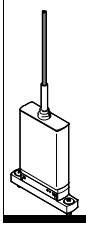
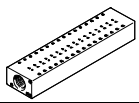
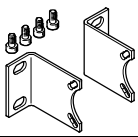
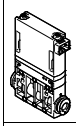
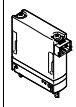
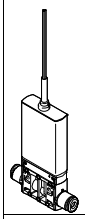
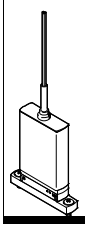
Ordering data

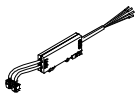
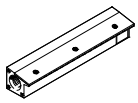
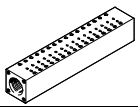
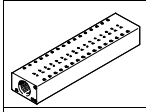
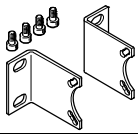
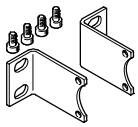
	Description	Standard nominal flow rate	Cable length	Product weight	Operating pressure	Part no.	Type
In-line valve with connecting cable							
	2/2-way solenoid valve	50 l/min	2.5 m	85 g	+0.5 ... +8 bar	**572081**	**MHJ10-S-2,5-QS-4-LF**
		100 l/min	0.35 m	50 g	+0,5 ... +6 bar	**557604**	**MHJ10-S-0,35-QS-4-MF**
			2.5 m	85 g	+0.5 ... +6 bar	**565515**	**MHJ10-S-2,5-QS-4-MF**
		160 l/min	2.5 m	85 g	+0.5 ... +6 bar	**567503**	**MHJ10-S-2,5-QS-6-HF**
					+0.5 ... +4 bar	**567798**	**MHJ10-S-2,5-QS-6-HF/LP**
Sub-base valve with connecting cable							
	2/2-way solenoid valve	50 l/min	2.5 m	75 g	+0.5 ... +8 bar	**572080**	**MHJ10-S-2,5-LF**
		100 l/min	0.35 m	40 g	+0,5 ... +6 bar	**557601**	**MHJ10-S-0,35-MF**
			2.5 m	75 g	+0.5 ... +6 bar	**565513**	**MHJ10-S-2,5-MF**
		160 l/min	2.5 m	75 g	+0.5 ... +6 bar	**567502**	**MHJ10-S-2,5-HF**
					+0.5 ... +4 bar	**567796**	**MHJ10-S-2,5-HF/LP**

Ordering data – Accessories

	Description			Part no.	Type
Manifold rail					
	For 16 valves MHJ10, without mounting bracket, with pneumatic connection M7			**557608**	**MHJ10-P16**
Mounting kit					
	For manifold rail MHJ10-P16, consisting of 2 mounting brackets and 4 socket head screws M4x8 DIN912			**565455**	**MHJ-HW1**
Push-in fitting for valve output, port 2					
	Connecting thread M7 for tubing O.D.	For manifold rail with LF or MF valves	4 mm (10 pieces)	**153319**	**QSM-M7-4-I**
		For manifold rail with HF or HF/LP valves	6 mm (10 pieces)	**153321**	**QSM-M7-6-I**
Push-in fitting for air supply, port 1					
	Connecting thread G1/2 for tubing O.D.		12 mm (1 piece)	**186104**	**QS-G1/2-12**
			16 mm (1 piece)	**186105**	**QS-G1/2-16**
	Connecting thread G3/8 for tubing O.D.		12 mm (10 pieces)	**186103**	**QS-G3/8-12**
			16 mm (10 pieces)	**186347**	**QS-G3/8-16**

Ordering data

	Description	Standard nominal flow rate	Cable length	Operating pressure	Part no.	Type
In-line valve without connecting cable						
	2/2-way solenoid valve	50 l/min	–	+0.5 … +8 bar	**572079**	**MHJ9-QS-4-LF**
		100 l/min	–	+0,5 … +6 bar	**553118**	**MHJ9-QS-4-MF**
		160 l/min	–	+0.5 … +4 bar	**567793**	**MHJ9-QS-6-HF/LP**
			–	+0.5 … +6 bar	**567790**	**MHJ9-QS-6-HF**
Sub-base valve without connecting cable						
	2/2-way solenoid valve	50 l/min	–	+0.5 … +8 bar	**572078**	**MHJ9-LF**
		100 l/min	–	+0,5 … +6 bar	**553115**	**MHJ9-MF**
		160 l/min	–	+0.5 … +4 bar	**567792**	**MHJ9-HF/LP**
			–	+0.5 … +6 bar	**553117**	**MHJ9-HF**
In-line valve with connecting cable						
	2/2-way solenoid valve	50 l/min	2.5 m	+0.5 … +8 bar	**572081**	**MHJ10-S-2,5-QS-4-LF**
		100 l/min	0.35 m	+0,5 … +6 bar	**557604**	**MHJ10-S-0,35-QS-4-MF**
			2.5 m	+0.5 … +6 bar	**565515**	**MHJ10-S-2,5-QS-4-MF**
		160 l/min	2.5 m	+0.5 … +4 bar	**567798**	**MHJ10-S-2,5-QS-6-HF/LP**
				+0.5 … +6 bar	**567503**	**MHJ10-S-2,5-QS-6-HF**
Sub-base valve with connecting cable						
	2/2-way solenoid valve	50 l/min	2.5 m	+0.5 … +8 bar	**572080**	**MHJ10-S-2,5-LF**
		100 l/min	0.35 m	+0,5 … +6 bar	**557601**	**MHJ10-S-0,35-MF**
			2.5 m	+0.5 … +6 bar	**565513**	**MHJ10-S-2,5-MF**
		160 l/min	2.5 m	+0.5 … +4 bar	**567796**	**MHJ10-S-2,5-HF/LP**
				+0.5 … +6 bar	**567502**	**MHJ10-S-2,5-HF**

Ordering data					
	Description			Part no.	Type
Connecting cable					
	With control electronics for 2 valves, mounting on H-rail, for static applications	For LF, MF and HF/LP valves	0.5 m	**553121**	**MHJ9-KMH-0,5-MF**
			2.5 m	**565519**	**MHJ9-KMH-2,5-MF**
		For HF valves	0.5 m	**562170**	**MHJ9-KMH-0,5-HF**
			2.5 m	**567505**	**MHJ9-KMH-2,5-HF**
Manifold rail[1)]					
	For 16 valves MHJ9, without mounting bracket, with air gun nozzles			**553123**	**MHJ9-PN16**
	For 16 valves MHJ9, without mounting bracket, with pneumatic connection M7			**553125**	**MHJ9-P16**
	For 16 valves MHJ10, without mounting bracket, with pneumatic connection M7			**557608**	**MHJ10-P16**
Mounting kit					
	For manifold rail MHJ...-P16, consisting of 2 mounting brackets and 4 socket head screws M4x8 DIN912			**565455**	**MHJ-HW1**
	For manifold rail MHJ9-PN16, consisting of 2 mounting brackets and 4 socket head screws M4x8 DIN912			**565456**	**MHJ-HW2**
Push-in fitting for valve output, port 2					
	Connecting thread M7 for tubing O.D.	4 mm (10 pieces)	For manifold rail with LF or MF valves	**153319**	**QSM-M7-4-I**
		6 mm (10 pieces)	For manifold rail with HF or HF/LP valves	**153321**	**QSM-M7-6-I**
Push-in fitting for air supply, port 1					
	Connecting thread G1/2 for tubing O.D.		12 mm (1 piece)	**186104**	**QS-G1/2-12**
			16 mm (1 piece)	**186105**	**QS-G1/2-16**
	Connecting thread G3/8 for tubing O.D.		12 mm (10 pieces)	**186103**	**QS-G3/8-12**
			16 mm (10 pieces)	**186347**	**QS-G3/8-16**

1) Further versions/lengths available on request