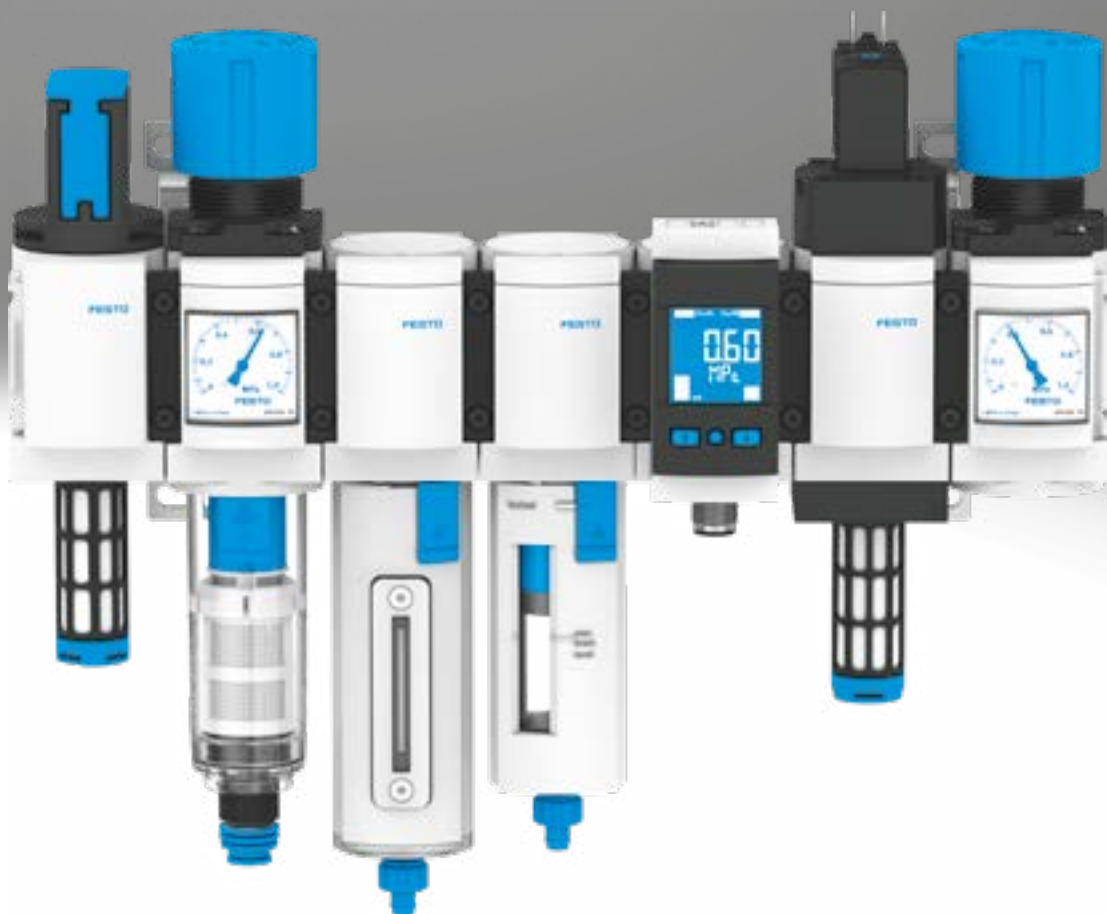


Service unit combinations MSB4/MSB6, MS series

FESTO



Festo Core Range
Solves the majority of your automation tasks

Worldwide:
Simply good:
Fast:

Quickest delivery – wherever, whenever
Expected high Festo quality
Easy and fast to select

With the Festo Core Range, we have selected the most important products and functions from our broad product catalogue, and added the quickest delivery.

The Core Range offers you the best value for your automation tasks.

Just look
for the
star!

Key features

Service unit components of the MS series

Solutions for every application

With its large product range, highly effective components and a wide choice of functions, the MS series from Festo offers a complete concept for compressed air preparation. It is suitable for simple standard applications as well as application-specific solutions with very high quality requirements. Available as individual components, pre-assembled combinations ex-stock,

application-specific combinations or complete turnkey solutions. The five sizes in the MS series achieve maximum flow rates with minimum space requirements.

Freely combinable function modules

Pressure regulators, on/off and soft-start valves with safety function, filters, pressure and flow sensors, dryers, sensors and lubricators can be assembled into a suitable solution for every task. Thanks to the modular structure the components can be combined as required. The simple connection system saves time because there is no need to disassemble the entire combi-

nation when replacing individual modules.

Many of the components are also UL and ATEX certified.

CAD models and configurator

Convenient tools for planning and selecting application-specific individual devices and combinations. The product configurator can be used to configure customised solutions quickly and to transfer the order data without any hassle.

Engineering tools

Selection tool for choosing the right combination of service unit components without oversizing, and with the right air purity class:

→ www.festo.com/engineering/service-unit



Integrated sensors

Pressure and flow sensors



- Maximum machine availability thanks to controlled processes
- Reliable air preparation and supply for systems
- Integrated or stand-alone
- Easy to connect with M8/M12 plug

Safety functions

Soft-start/quick exhaust valves

MS6-SV/MS9-SV



- Fast and reliable exhausting of systems up to Performance Level e, certified to EN ISO 13849-1
- Integrated soft-start function

Saving energy

Service unit combinations MSE6



- Fully automatic monitoring and regulation of the compressed air supply
- Automatic shut-off of the compressed air in stand-by mode
- Detection and notification of leaks
- Condition monitoring of relevant process data

Intelligent mix of sizes



- Optimum flow rate with a size that is up to 18% smaller
- Excellent energy efficiency
- Cost-optimised combinations – save up to 30%!

Size differences

Size	MS2	MS4	MS6	MS9	MS12
Grid dimension [mm]	25	40	62	90	124
Connection sizes	M5, QS-6	G1/8, G1/4, G3/8	G1/4, G3/8, G1/2, G3/4	G1/2, G3/4, G1, G1 1/4, G1 1/2	G1, G1 1/4, G1 1/2, G2
Standard nominal flow rate q_{N1} [l/min]	350	1800	6500	20000	22000

1) Using pressure regulator MS-LR as an example

Key features

Note

Information

The next few pages provide a brief overview of the product range for the MS series service unit components.

You can find detailed information and all the technical data in the documentation for the relevant service unit component.





Accessories such as connecting plates or mounting brackets can be ordered either via the configurator or separately.

Design of a service unit combination







The order of the individual service unit components within a combination is relevant for safety and functionality. The service unit components cannot be combined in any order in the flow direction. There are restrictions and rules.

The configurator for the service unit MSB is a reliable and convenient way of combining individual service unit components and ensures compliance with the applicable rules. As a result, you get a fully assembled combination with UL or ATEX certification, if necessary. When combining a unit from individually configured and ordered service unit components, the following points must be adhered to under all circumstances.







- Regulators MS-LFR/LR/LRP/LRE are only permissible in the flow direction with the same or decreasing pressure regulation range
- Filters MS-LFR/LF/LFM/LFX are only permissible in the flow direction with an increasing grade of filtration
- Lubricators MS-LOE are not permitted in the flow direction upstream of a filter MS-LFR/LFM/LF/LFX, water separator MS-LWS or membrane air dryer MS-LDM1
- A micro filter MS-LFM must be installed in the flow direction upstream of an activated carbon filter MS-LFX or membrane air dryer MS-LDM1
- A flow sensor SFAM cannot be installed directly downstream of a regulator MS-LFR/LR; a branching module MS-FRM must be positioned between them
- A soft-start/quick exhaust valve MS-SV must be the last service unit component in the flow direction

Product range for service unit components of the MS series								
Type	Description	Size	Pneumatic connection					
			Push-in connector	Female thread			Connecting plate with thread	
				M	G	NPT	G	NPT
Combinations								
Service unit combinations MSB-FRC								Datasheets → Internet: msb
	Combinations of filter regulator and lubricator	4	–	–	1/8, 1/4	–	–	–
		6	–	–	1/4, 3/8, 1/2	–	–	–
Service unit combinations MSB								
								Datasheets → Internet: msb
	Certain predefined combinations	4	–	–	1/4	–	–	–
		6	–	–	1/2	–	–	–
	Freely configurable combinations	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
Service unit combinations MSE6								
								Datasheets → Internet: mse6
	Combinations with fieldbus connection for measuring pressure, flow rate and consumption	6	–	–	–	–	1/2	–

Key features

Product range for service unit components of the MS series								
Type	Description	Size	Pneumatic connection					
			Push-in connector	Female thread			Connecting plate with thread	
				M	G	NPT	G	NPT
Individual devices								
Filter regulators MS-LFR Datasheets → Internet: ms2-lfr; ms4-lfr; ms6-lfr; ms9-lfr; ms12-lfr								
	Filter and pressure regulator in a single device, grade of filtration 5 or 40 µm	2	QS-6	M5	–	–	–	–
		4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
Filter regulators MS-LFR-B Datasheets → Internet: ms4-lfr-b; ms6-lfr-b								
	Filter and pressure regulator in a single device in polymer housing, grade of filtration 5 or 40 µm	4	–	–	1/4	–	–	–
		6	–	–	1/2	–	–	–
Filters MS-LF Datasheets → Internet: ms4-lf; ms6-lf; ms9-lf; ms12-lf								
	Grade of filtration 5 or 40 µm	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
Fine and micro filters MS-LFM Datasheets → Internet: ms4-lfm; ms6-lfm; ms9-lfm; ms12-lfm								
	Grade of filtration 0.01 or 1 µm	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
Activated carbon filters MS-LFX Datasheets → Internet: ms4-lfx; ms6-lfx; ms9-lfx; ms12-lfx								
	For removing liquid and gaseous oil particles	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
Water separators MS-LWS Datasheets → Internet: ms6-lws; ms9-lws; ms12-lws								
	Remove condensate from compressed air, maintenance-free	6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–





Key features

Product range for service unit components of the MS series								
Type	Description	Size	Pneumatic connection					
			Push-in connector	Female thread			Connecting plate with thread	
				M	G	NPT	G	NPT
Individual devices								
Pressure regulators MS-LR Datasheets → Internet: ms2-lr; ms4-lr; ms6-lr; ms9-lr; ms12-lr								
	For setting the required operating pressure, 4 pressure regulation ranges	2	QS-6	M5	–	–	–	–
		4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
Pressure regulators MS-LR-B Datasheets → Internet: ms4-lr-b; ms6-lr-b								
	For setting the required operating pressure, in polymer housing	4	–	–	1/4	–	–	–
		6	–	–	1/2	–	–	–
Pressure regulators MS-LRB Datasheets → Internet: ms4-lrb; ms6-lrb								
	For configuring a regulator manifold with independent pressure regulation ranges. Pressure output is at the front or rear.	4	–	–	1/4	–	1/8, 1/4, 3/8	–
		6	–	–	1/2	–	1/4, 3/8, 1/2, 3/4	–
Precision pressure regulators MS-LRP Datasheets → Internet: ms6-lrp								
	For precisely setting the required operating pressure, 4 pressure regulation ranges, pressure hysteresis 0.02 bar	6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
Precision pressure regulators MS-LRPB Datasheets → Internet: ms6-lrpb								
	For configuring a regulator manifold with independent pressure regulation ranges. Pressure output is at the front or rear.	6	–	–	1/2	–	1/4, 3/8, 1/2, 3/4	–
Lubricators MS-LOE Datasheets → Internet: ms4-loe; ms6-loe; ms9-loe; ms12-loe								
	Add a precisely adjustable amount of oil to the compressed air. The amount of oil mist is proportional to the compressed air flow rate.	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–

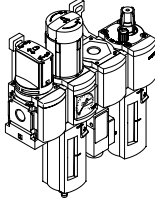
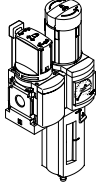
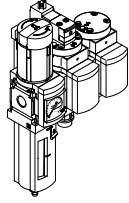
Key features

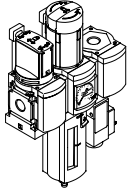
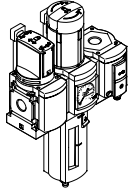
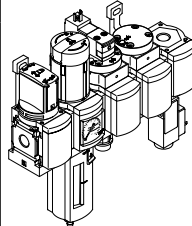
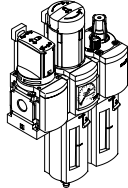
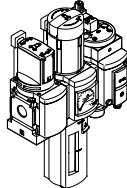
Product range for service unit components of the MS series								
Type	Description	Size	Pneumatic connection			Connecting plate with thread		
			Push-in connector	Female thread		G		NPT
			M	G	NPT	G	NPT	
Individual devices								
On/off valves MS-EM						Datasheets → Internet: ms4-em; ms6-em; ms9-em; ms12-em		
	Manually actuated on/off valve for pressurising and exhausting pneumatic systems.	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
On/off valves MS-EE								
On/off valves MS-EE						Datasheets → Internet: ms4-ee; ms6-ee; ms9-ee; ms12-ee		
	Electrically actuated on/off valve for pressurising and exhausting pneumatic systems.	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
On/off valves MS-EE-B								
On/off valves MS-EE-B						Datasheets → Internet: ms4-ee-b; ms6-ee-b		
	Electrically actuated on/off valve in polymer housing for pressurising and exhausting pneumatic systems.	4	–	–	1/4	–	–	–
		6	–	–	1/2	–	–	–
Soft-start valves MS-DL								
Soft-start valves MS-DL						Datasheets → Internet: ms4-dl; ms6-dl; ms12-dl		
	Pneumatically actuated soft-start valve for slowly pressurising and exhausting pneumatic systems.	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
Soft-start valves MS-DE								
Soft-start valves MS-DE						Datasheets → Internet: ms4-de; ms6-de; ms12-de		
	Electrically actuated soft-start valve for slowly pressurising and exhausting pneumatic systems.	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
On/off valves MS-EDE-B								
On/off valves MS-EDE-B						Datasheets → Internet: ms4-ed-e-b; ms6-ed-e-b		
	Electrically actuated soft-start valve in polymer housing for slowly pressurising and exhausting pneumatic systems.	4	–	–	1/4	–	–	–
		6	–	–	1/2	–	–	–
Soft-start/quick exhaust valves MS-SV								
Soft-start/quick exhaust valves MS-SV						Datasheets → Internet: ms6-sv; ms9-sv		
	For gradually increasing pressurisation and quick, safe pressure reduction in pneumatic piping systems. Up to category 1, PL c.	6	–	–	1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
	Up to category 3, PL d. Up to category 4, PL e in the case of optional extension.	6	–	–	1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
	Up to category 4, PL e.	6	–	–	1/2	–	1/4, 3/8, 1/2, 3/4	–

Key features

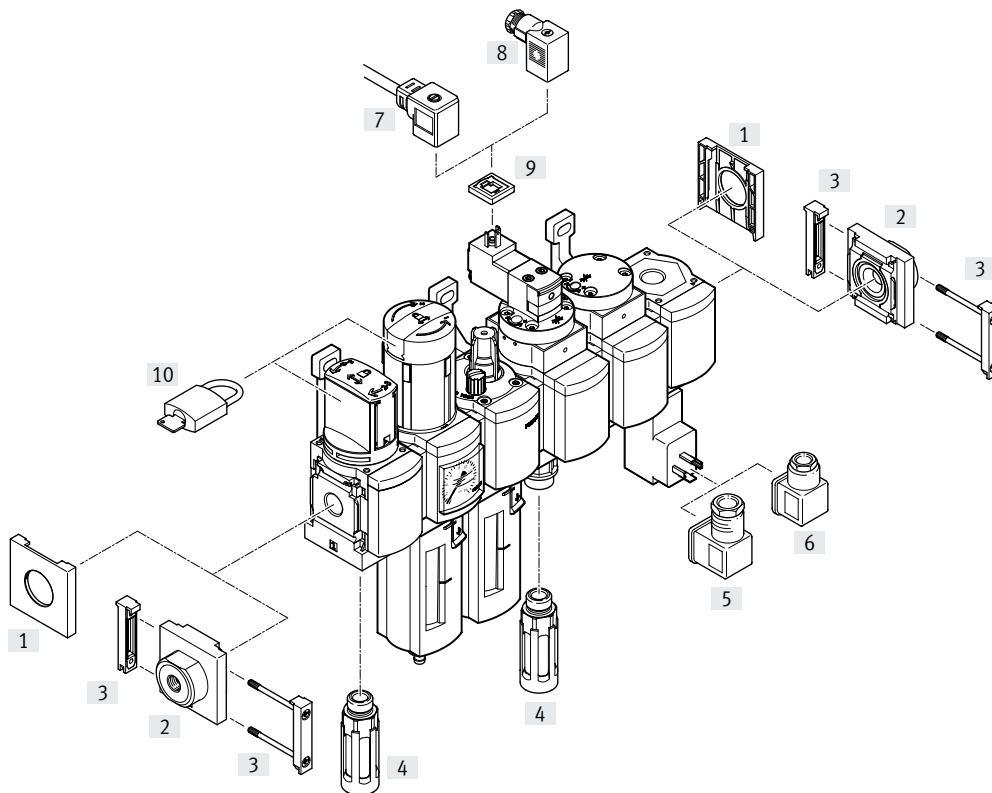
Product range for service unit components of the MS series								
Type	Description	Size	Pneumatic connection				Connecting plate with thread	
			Push-in connector	Female thread			G	NPT
				M	G	NPT		
Individual devices								
Membrane air dryers MS-LDM1							Datasheets → Internet: ms4-ldm; ms6-ldm	
	Wear-free membrane dryer with internal air consumption	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
Branching modules MS-FRM								
Compressed air distributors with 4 connections							Datasheets → Internet: ms4-frm; ms6-frm; ms9-frm; ms12-frm	
		4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	–
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	–
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
Distributor blocks MS-FRM-FRZ								
Compressed air distributors with 4 connections and half the grid width							Datasheets → Internet: ms4-frm-frz; ms6-frm-frz	
		4	–	–	–	–	–	–
		6	–	–	–	–	–	–
Flow sensors SFAM								
For absolute flow rate information and cumulative air consumption measurement							Datasheets → Internet: sfam	
		6	–	–	–	–	1/2	1/2
		9	–	–	–	–	1, 1 1/2	1, 1 1/2

Product range overview

Combinations		Combination 1	Combination 2	Combination 3
				
Comprising:				
Manually operated on/off valve	EM1	■	■	-
Filter regulator with pressure gauge	LFR/ LFR-B	■	■	■
Lubricators	LOE	■	-	-
Electrically actuated on/off valve	EE	-	-	■
Electrically actuated on/off valve, with pressure sensor	EE	-	-	-
Pneumatically actuated soft-start valve	DL	-	-	■
Branching module with pressure switch	FRM	■	-	-
Branching module with pressure sensor	FRM	-	-	-
Mounting bracket	WP	■	■	■
Datasheet → page		10	13	20

Combinations		Combination 4		Combination 5	Combination 6	Combination 7
						
Comprising:						
Manually operated on/off valve	EM1	■	■	■	■	■
Filter regulator with pressure gauge	LFR/ LFR-B	■	■	■	■	■
Lubricators	LOE	-	-	-	■	-
Electrically actuated on/off valve	EE	-	-	■	-	-
Electrically actuated on/off valve, with pressure sensor	EE	-	-	-	-	■
Pneumatically actuated soft-start valve	DL	-	-	■	-	-
Branching module with pressure switch	FRM	■	-	■	-	-
Branching module with pressure sensor	FRM	-	■	-	-	-
Mounting bracket	WP	■	■	■	■	■
Datasheet → page		23	23	28	31	34

Peripherals overview



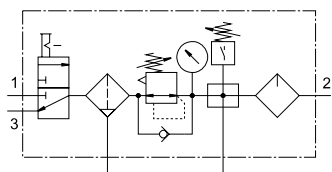
Note
 The range of accessories depends on the service unit selected.
 Range of accessories
 → Pages with peripherals for the individual devices

Mounting attachments and accessories		→ Page/ Internet
[1]	Cover cap MS4/6-END	ms4-end, ms6-end
[2]	Connecting plate set MS4/6-AG...	ms4-ag, ms6-ag
[3]	Module connector MS4/6-MV1	ms4-mv1, ms6-mv1
[4]	Silencer U	38
[5]	Angled plug socket PEV-1/4-WD-LED	38
[6]	Plug socket MSSD-C-4P	38
[7]	Plug socket with cable KMEB	38
[8]	Plug socket MSSD-EB	38
[9]	Illuminating seal MEB-LD	38
[10]	Padlock LRVS-D	38
-	Mounting bracket MS4/6-WP/WPB/WPE/ WPE-B ¹⁾ /WPM	ms4-wp, ms6-wp

1) Valid for EM1FR-B

Datasheet – Combination 1

Function
With manual condensate drain



- On/off valve MS...-EM1, manually operated
- Filter regulator MS...-LFR-D7 with pressure gauge
- Branching module MS...-FRM-Y with pressure switch without display
- Lubricator MS...-LOE-R
- Mounting bracket MS...-WP

- Flow rate
950 l/min
- Temperature range
-10 ... +60°C
- Pressure regulation range
1 ... 12 bar
- Spare parts service



- For filtered and lubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range
- The unit is exhausted when switched off
- Electrical pressure monitoring with adjustable switching pressure
- Removal of filtered and unlubricated compressed air at the ports of the branching module

General technical data

Size	MSB4
Pneumatic connection 1, 2, 3	G1/4
Regulator function	Output pressure constant, with primary pressure compensation, with return flow, with secondary exhausting
Type of mounting	Via accessories
Mounting position	Vertical ±5°
Grade of filtration [µm]	40
Air purity class at the output	Compressed air to ISO 8573-1:2010 [7:4:-]
Bowl guard	Plastic bowl guard
Condensate drain	Manual
Actuator lock	Rotary knob with latch, can be locked using accessories
Pressure regulation range [bar]	1 ... 12
Pressure indication	With pressure gauge

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Standard nominal flow rate qnN [l/min]

Size	MSB4
Grade of filtration 40 µm	950


Datasheet – Combination 1

Operating and environmental conditions	
Condensate drain	Manual
Size	MSB4
Operating pressure [bar]	1.5 ... 14
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature [°C]	-10 ... +60
Temperature of medium [°C]	-10 ... +60
Storage temperature [°C]	-10 ... +60
LABS (PWIS) conformity	VDMA24364-B1/B2-L
Corrosion resistance class CRC ¹⁾	2
Food-safe ²⁾	See supplementary material information

1) More information www.festo.com/x/topic/crc

2) More information: www.festo.com/catalogue/msb → Support/Downloads.

Weight [g]	
Size	MSB4
Service unit combination	1700
Mounting bracket	40

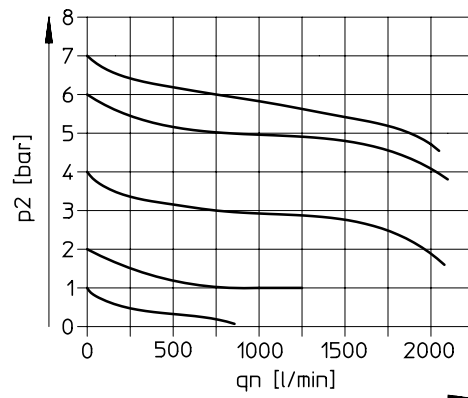
 **Note**

Materials → Datasheet for the individual devices

Standard flow rate q_n as a function of output pressure p_2

Pressure regulation range 1 ... 12 bar Grade of filtration 40 μm
MSB4-1/4

Input pressure $p_1 = 10$ bar

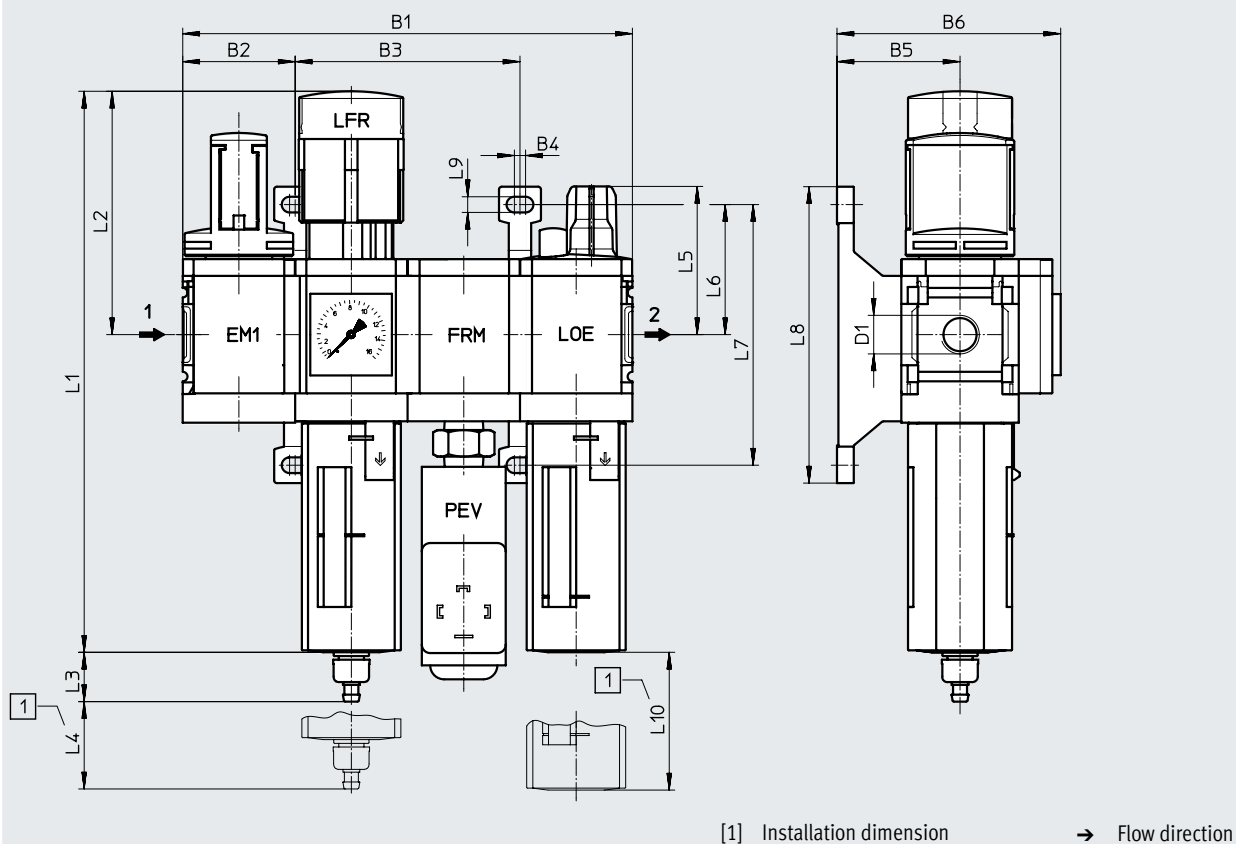


Datasheet – Combination 1

Dimensions

Download CAD data → www.festo.com

Manually operated on/off valve, filter regulator with pressure gauge, branching module with pressure switch, lubricator



Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	160.8	40.2	80.4	4	44	80	G1/4	201	87

Type	L3	L4	L5	L6	L7	L8	L9	L10
MSB4	17.7	25	53	46.5	93.2	106	5.6	80

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

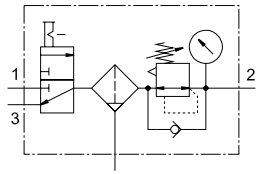
Ordering data

Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
Pressure regulation range 1 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G1/4	Manual	40	542295	MSB4-1/4:C3J1F3M1-WP

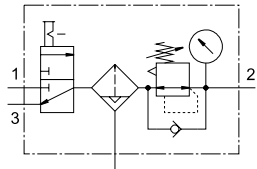
Datasheet – Combination 2

Function

With manual condensate drain



Fully automatic condensate drain



- On/off valve MS...-EM1, manually operated
- Filter regulator MS...-LFR with pressure gauge
- Mounting bracket MS...-WP

- Flow rate
950 ... 5500 l/min
- Temperature range
-10 ... +60°C
- Pressure regulation range
0.5 ... 12 bar
- Spare parts service



- For filtered and unlubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range

General technical data – MS4/6-EM1FR...-B

Type of mounting (select one)	In-line installation
	With mounting bracket
	Via accessories
Mounting position	Vertical ±5°
Pressure indication	Prepared for G1/8"
	With pressure gauge

General technical data – MSB4/6

Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G1/4	G1/2
Regulator function	Output pressure constant, with primary pressure compensation, with return flow, with secondary exhausting	
Type of mounting	Via accessories	
Mounting position	Vertical ±5°	
Grade of filtration [µm]	5	
	40	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual	
	Fully automatic	
Actuator lock	Rotary knob with latch, can be locked using accessories	
Pressure regulation range [bar]	0.5 ... 7	
	0.5 ... 12	
Pressure indication	With pressure gauge	

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet – Combination 2

Characteristic flow rate values – MS4/6-EM1FR...-B [l/min]			
Size	MS4-EM1FR...-B	MS6-EM1FR...-B	
Standard flow rate qn (exhaust) ¹⁾			
Grade of filtration	40 µm	1400	3600
Standard nominal flow rate qnN			
Grade of filtration	5 µm	1500	4750
	40 µm	1700	5300

1) 0.6 → 0 MPa (6 → 0 bar, 87 → 0 psi)

‡ 125 l/min must be available for the fully automatic condensate drain to close correctly.

Characteristic flow rate values – MSB4/6 [l/min]					
Condensate drain		Manual		Fully automatic	
Size	MSB4	MSB6	MSB4	MSB6	
Standard nominal flow rate qnN (pressure regulation range 0.5 ... 7 bar)					
Grade of filtration	40 µm	1150	5500	–	–
Standard nominal flow rate qnN (pressure regulation range 0.5 ... 12 bar)					
Grade of filtration	5 µm	950	4800	950	4800
	40 µm	1700	5100	1000	5100

‡ 125 l/min must be available for the fully automatic condensate drain to close correctly.

Operating and environmental conditions – MS4/6-EM1FR...-B				
Condensate drain		Manual		Fully automatic
Size	MS4-EM1FR...-B	MS6-EM1FR...-B	MS4-EM1FR...-B	MS6-EM1FR...-B
Operating pressure	[MPa]	0.1 ... 1		
	[bar]	1 ... 10		
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]			
Note on the operating/pilot medium	Compatibility with ester oil not guaranteed			
Ambient temperature	[°C]	–5 ... +50		+5 ... +50
Temperature of medium	[°C]	–5 ... +50		+5 ... +50
Storage temperature	[°C]	–5 ... +50		
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress			

1) More information www.festo.com/x/topic/crc

Operating and environmental conditions – MSB4/6									
Grade of filtration	5			40					
Condensate drain		Manual		Fully automatic		Manual		Fully automatic	
Size	MSB4	MSB6	MSB4	MSB6	MSB4	MSB6	MSB4	MSB6	
Operating pressure	[bar]	0.8 ... 14 (1.5 ... 14) ¹⁾	0.8 ... 18	2 ... 12		0.8 ... 14 (1.5 ... 14) ¹⁾	0.8 ... 18	2 ... 12	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4], inert gases								
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)								
Air purity class at the output	Compressed air to ISO 8573-1:2010 [6:4:4]				Compressed air to ISO 8573-1:2010 [7:4:4]				
Ambient temperature	[°C]	–10 ... +60		+5 ... +60		–10 ... +60		+5 ... +60	
Temperature of medium	[°C]	–10 ... +60		+5 ... +60		–10 ... +60		+5 ... +60	
Storage temperature	[°C]	–10 ... +60							
Corrosion resistance class CRC ²⁾	2 - Moderate corrosion stress								
Food-safe ³⁾	See supplementary material information								

1) For pressure regulation range 0.5 ... 7 bar

2) More information www.festo.com/x/topic/crc


3) More information: www.festo.com/catalogue/msb → Support/Downloads.

Datasheet – Combination 2

Weight [g]				
Size	MS4-EM1FR...-B	MSB4	MS6-EM1FR...-B	MSB6
Service unit combination	450	1300	1250	1100
Mounting bracket	40		76	

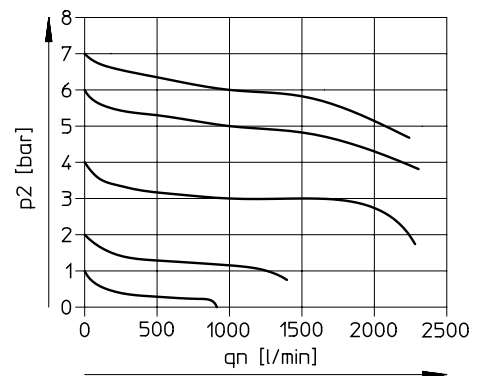
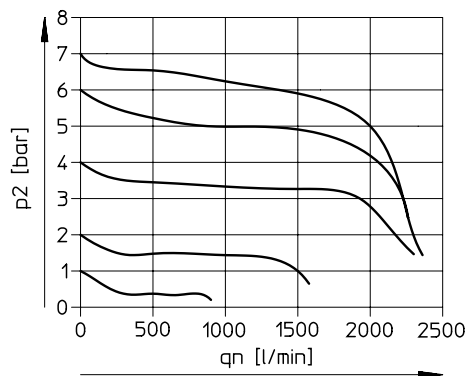
Materials				
Size	MS4-EM1FR...-B	MSB4	MS6-EM1FR...-B	MSB6
Housing material	–	Die-cast aluminium	–	Die-cast aluminium
Bowl material	–	PC	–	PC, PE
Note on materials	RoHS-compliant	–	RoHS-compliant	–
LABS (PWIS) conformity	VDMA24364-B1/B2-L			

Special material properties – Products for battery production		
Size	MS4-EM1FR...-F1A-B	MS6-EM1FR...-F1A-B
Suitability for the production of Li-ion batteries	Metals with more than 1% by mass of copper, zinc or nickel are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils	

 **Note**
 Materials → Datasheet for the individual devices

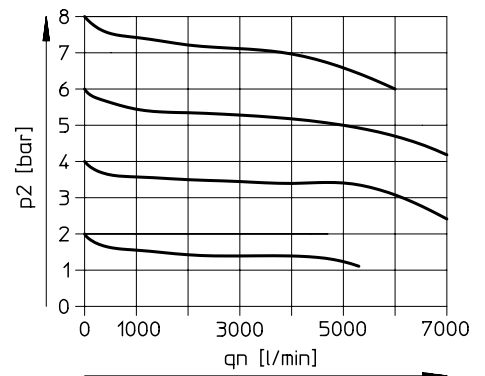
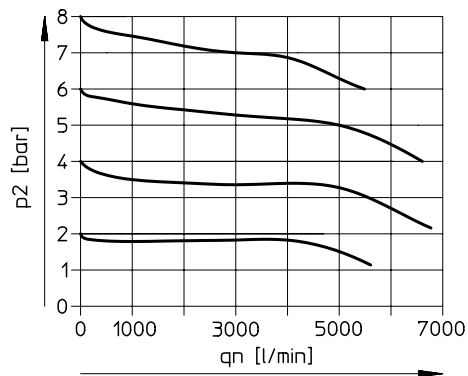
Standard flow rate q_n as a function of output pressure p_2
 Pressure regulation range 0.5 ... 12 bar
 MSB4-1/4

Input pressure $p_1 = 10$ bar



MSB6-1/2

Input pressure $p_1 = 10$ bar

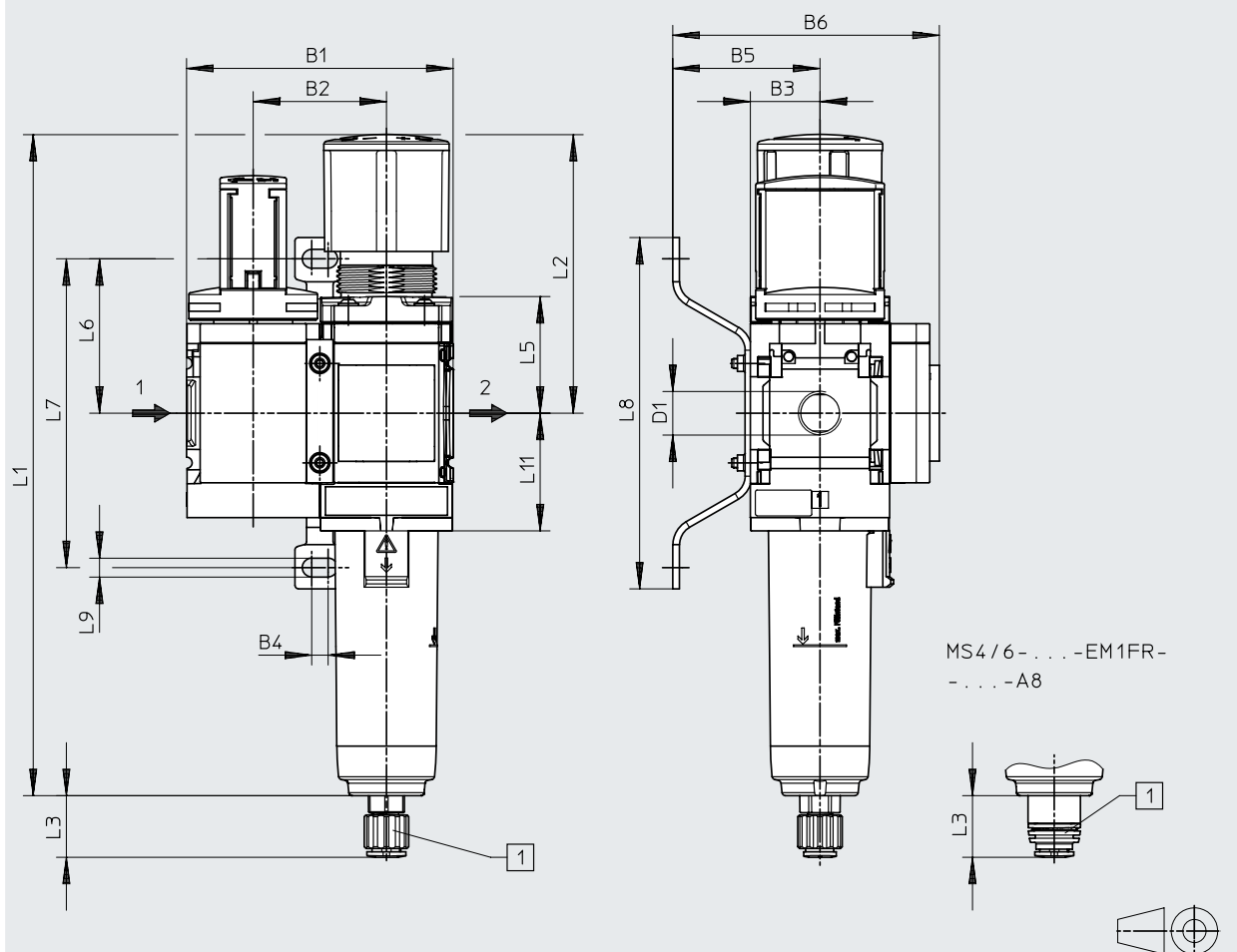


Datasheet – Combination 2

Dimensions

Download CAD data → www.festo.com

MS4/6-EM1FR – Manually operated on/off valve, filter regulator with pressure gauge



MS4/6-...-EM1FR-
-...-A8

[1] MS4-EM1FR-...: Condensate drain manual
MS4-EM1FR-...-A8: Condensate drain, automatic

→ Flow direction

Type	B1	B2	B3	B4	B5	B6	D1	L1
MS4-EM1FR	80.4	40.2	21	5	44.4	80.4	G1/4	199.8
MS4-EM1FR-...-A8								
MS6-EM1FR	124	62	31	4.3	53.9	99.9	G1/2	288.9
MS6-EM1FR-...-A8								

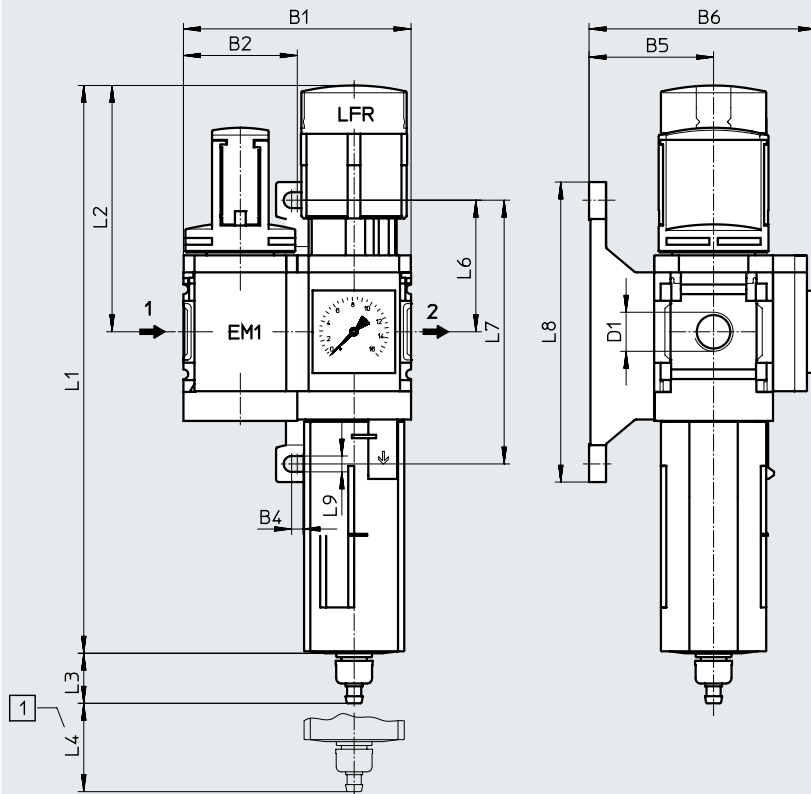
Type	L2	L3	L5	L6	L7	L8	L9	L11
MS4-EM1FR	84.4	18.6	35.2	46.6	93.2	106	5.7	35.5
MS4-EM1FR-...-A8		20.8						
MS6-EM1FR	141.3	20.8	49.4	72	142	158	6.6	53.5
MS6-EM1FR-...-A8		22.4						

Datasheet – Combination 2

Dimensions

Download CAD data → www.festo.com

MSB4/6 – Manually operated on/off valve, filter regulator with pressure gauge



[1] Installation dimension

→ Flow direction

Type	B1	B2	B4	B5	B6	D1	L1	L2
MSB4	80.4	40.2	4	44	80	G1/4	201	87
MSB6	124	62	4.5	54	100	G1/2	285	134.5

Type	L3 Condensate drain		L4	L6	L7	L8	L9
	Manual	Fully automatic					
MSB4	17.7	20.4	25	46.5	93.2	106	5.6
MSB6	15.8	18.5	68	71	142	158	6.6

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet – Combination 2

★ Core Range

Ordering data – MSB4/6-EM1FR...-B					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
Pressure indication: G1/8" prepared					
MS4-EM1FR...-B	G1/4	Manual	5	★ 8130947	MS4-EM1FR-1/4-D6-C-P-M-A8-WPE-B
		Fully automatic	5	★ 8130949	MS4-EM1FR-1/4-D6-C-P-VC-A8-WPE-B
		Manual	40	★ 8130950	MS4-EM1FR-1/4-D6-E-P-M-A8-WPE-B
		Fully automatic	40	★ 8130948	MS4-EM1FR-1/4-D6-E-P-VC-A8-WPE-B
MS6-EM1FR...-B	G1/2	Manual	5	★ 8130912	MS6-EM1FR-1/2-D6-C-P-M-A8-WPE-B
		Fully automatic	5	★ 8130911	MS6-EM1FR-1/2-D6-C-P-VC-A8-WPE-B
		Manual	40	★ 8130913	MS6-EM1FR-1/2-D6-E-P-M-A8-WPE-B
		Fully automatic	40	★ 8130914	MS6-EM1FR-1/2-D6-E-P-VC-A8-WPE-B
Pressure gauge with outer scale in MPa					
MS4-EM1FR...-B	G1/4	Manual	5	★ 8098378	MS4-EM1FR-1/4-D6-C-P-M-AG-MPA-WPE-B
		Fully automatic	5	★ 8098377	MS4-EM1FR-1/4-D6-C-P-VC-AG-MPA-WPE-B
		Manual	40	★ 8098374	MS4-EM1FR-1/4-D6-E-P-M-AG-MPA-WPE-B
		Fully automatic	40	★ 8098380	MS4-EM1FR-1/4-D6-E-P-VC-AG-MPA-WPE-B
MS6-EM1FR...-B	G1/2	Manual	5	★ 8098371	MS6-EM1FR-1/2-D6-C-P-M-AG-MPA-WPE-B
		Fully automatic	5	★ 8098368	MS6-EM1FR-1/2-D6-C-P-VC-AG-MPA-WPE-B
		Manual	40	★ 8098369	MS6-EM1FR-1/2-D6-E-P-M-AG-MPA-WPE-B
		Fully automatic	40	★ 8098364	MS6-EM1FR-1/2-D6-E-P-VC-AG-MPA-WPE-B
Pressure gauge with outer scale in bar and inner scale in psi					
MS4-EM1FR...-B	G1/4	Manual	5	★ 8098373	MS4-EM1FR-1/4-D6-C-P-M-AG-BAR-WPE-B
		Fully automatic	5	★ 8098372	MS4-EM1FR-1/4-D6-C-P-VC-AG-BAR-WPE-B
		Manual	40	★ 8098376	MS4-EM1FR-1/4-D6-E-P-M-AG-BAR-WPE-B
		Fully automatic	40	★ 8098379	MS4-EM1FR-1/4-D6-E-P-VC-AG-BAR-WPE-B
MS6-EM1FR...-B	G1/2	Manual	5	★ 8098363	MS6-EM1FR-1/2-D6-C-P-M-AG-BAR-WPE-B
		Fully automatic	5	★ 8098370	MS6-EM1FR-1/2-D6-C-P-VC-AG-BAR-WPE-B
		Manual	40	★ 8098365	MS6-EM1FR-1/2-D6-E-P-M-AG-BAR-WPE-B
		Fully automatic	40	★ 8098367	MS6-EM1FR-1/2-D6-E-P-VC-AG-BAR-WPE-B
Ordering data – MSB4-EM1FR...-F1A-B¹⁾					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
MS4-EM1FR...-B	G1/4	Manual	5	8176521	MS4-EM1FR-1/4-D6-C-P-M-AG-BAR-WP-F1A-B
			5	8176522	MS4-EM1FR-1/4-D6-C-P-M-AG-MPA-WP-F1A-B
			40	8176523	MS4-EM1FR-1/4-D6-E-P-M-AG-BAR-WP-F1A-B
			40	8176524	MS4-EM1FR-1/4-D6-E-P-M-AG-MPA-WP-F1A-B
			5	8176525	MS4-EM1FR-1/4-D6-C-P-M-A8-WP-F1A-B
			40	8176526	MS4-EM1FR-1/4-D6-E-P-M-A8-WP-F1A-B
MS6-EM1FR...-B	G1/2	Manual	5	8176527	MS6-EM1FR-1/2-D6-C-P-M-AG-BAR-WP-F1A-B
			5	8176528	MS6-EM1FR-1/2-D6-C-P-M-AG-MPA-WP-F1A-B
			40	8176529	MS6-EM1FR-1/2-D6-E-P-M-AG-BAR-WP-F1A-B
			40	8176530	MS6-EM1FR-1/2-D6-E-P-M-AG-MPA-WP-F1A-B
			5	8176531	MS6-EM1FR-1/2-D6-C-P-M-A8-WP-F1A-B
			40	8176532	MS6-EM1FR-1/2-D6-E-P-M-A8-WP-F1A-B

1) F1A: Products for battery production

Datasheet – Combination 2

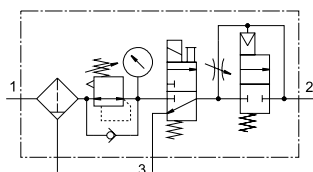
Ordering data – MSB4/6					
Size	Connection	Condensate drain	Grade of filtration [μm]	Part no.	Type
Pressure regulation range 0.5 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G1/4	Manual	40	★ 8025354	MSB4-1/4:C3:J1-WP
MSB6	G1/2	Manual	40	★ 8025355	MSB6-1/2:C3:J1-WP

Ordering data – MSB4/6					
Size	Connection	Condensate drain	Grade of filtration [μm]	Part no.	Type
Pressure regulation range 0.5 ... 7 bar, pressure gauge with outer scale in MPa					
MSB4	G1/4	Manual	40	8042668	MSB4-1/4:C3:J120-WP
MSB6	G1/2	Manual	40	8042672	MSB6-1/2:C3:J120-WP
Pressure regulation range 0.5 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G1/4	Manual	5	542304	MSB4-1/4:C3J3-WP
		Fully automatic	40	542298	MSB4-1/4:C3J2-WP
			5	542310	MSB4-1/4:C3J4-WP
MSB6	G1/2	Manual	5	542280	MSB6-1/2:C3J3-WP
		Fully automatic	40	542274	MSB6-1/2:C3J2-WP
			5	542286	MSB6-1/2:C3J4-WP

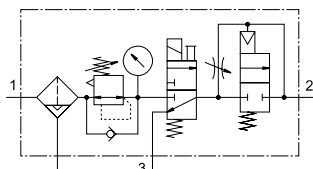
Datasheet – Combination 3

Function

With manual condensate drain



Fully automatic condensate drain



- Filter regulator MS...-LFR-D7 with pressure gauge
- On/off valve MS...-EE-V24, electrically actuated
- Soft-start valve MS...-DL, pneumatically actuated
- Mounting bracket MS...-WP

- - Flow rate
750 ... 3100 l/min
- - Temperature range
-10 ... +60°C
- - Pressure regulation range
4 ... 12 bar
- - Spare parts service



- For filtered and unlubricated compressed air
- Output pressure is infinitely adjustable within the pressure regulation range
- Gradual pressure build-up prevents sudden, unpredictable movements
- When the unit is switched off, quick exhausting ensures rapid pressure reduction

General technical data		
Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G1/4	G1/2
Regulator function	Output pressure constant, with primary pressure compensation, with return flow, with secondary exhausting	
Type of mounting	Via accessories	
Mounting position	Vertical ±5°	
Grade of filtration [µm]	40	
Air purity class at the output	Compressed air to ISO 8573-1:2010 [7:4:4] (grade of filtration 40 µm)	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual	
	-	Fully automatic
Actuator lock	Rotary knob with latch, can be locked using accessories	
Pressure regulation range [bar]	4 ... 12	
Pressure indication	With pressure gauge	
Characteristic coil data	24 V DC: 1.5 W	24 V DC: 1.5 W

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Standard nominal flow rate qnN [l/min]		
Size	MSB4	MSB6
Grade of filtration 40 µm	750	3100

† 125 l/min must be available for the fully automatic condensate drain to close correctly.

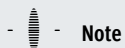
Datasheet – Combination 3

Operating and environmental conditions			
Condensate drain	Manual		Fully automatic
Size	MSB4	MSB6	MSB6
Operating pressure [bar]	4.5 ... 14	4.5 ... 18	4.5 ... 12
Operating medium	Compressed air to ISO 8573-1:2010 [-:4:-]		Compressed air to ISO 8573-1:2010 [7:4:-]
	Inert gases		
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Ambient temperature [°C]	-10 ... +60		+5 ... +60
Temperature of medium [°C]	-10 ... +60		+5 ... +60
Storage temperature [°C]	-10 ... +60		-10 ... +60
LABS (PWIS) conformity	VDMA24364-B1/B2-L		
Corrosion resistance class CRC ¹⁾	2		
Food-safe ²⁾	See supplementary material information		

1) More information www.festo.com/x/topic/crc

2) More information: www.festo.com/catalogue/msb → Support/Downloads.

Weight [g]		
Size	MSB4	MSB6
Service unit combination	1600	2400
Mounting bracket	40	76



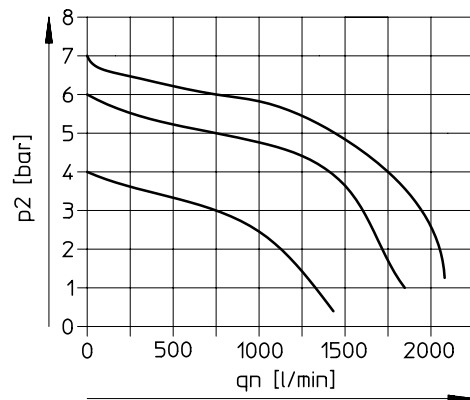
Note

Materials → Datasheet for the individual devices

Standard flow rate q_n as a function of output pressure p_2

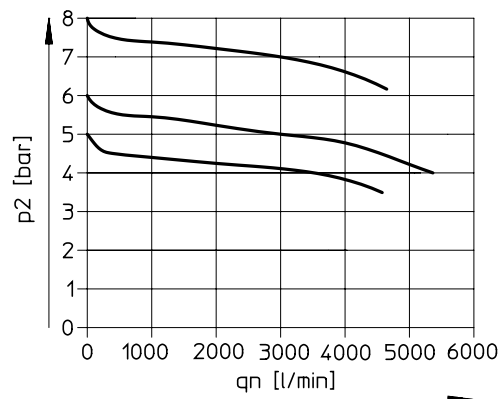
Pressure regulation range 4 ... 12 bar Grade of filtration 40 μm
MSB4-1/4

Input pressure $p_1 = 10$ bar



MSB6-1/2

Input pressure $p_1 = 10$ bar

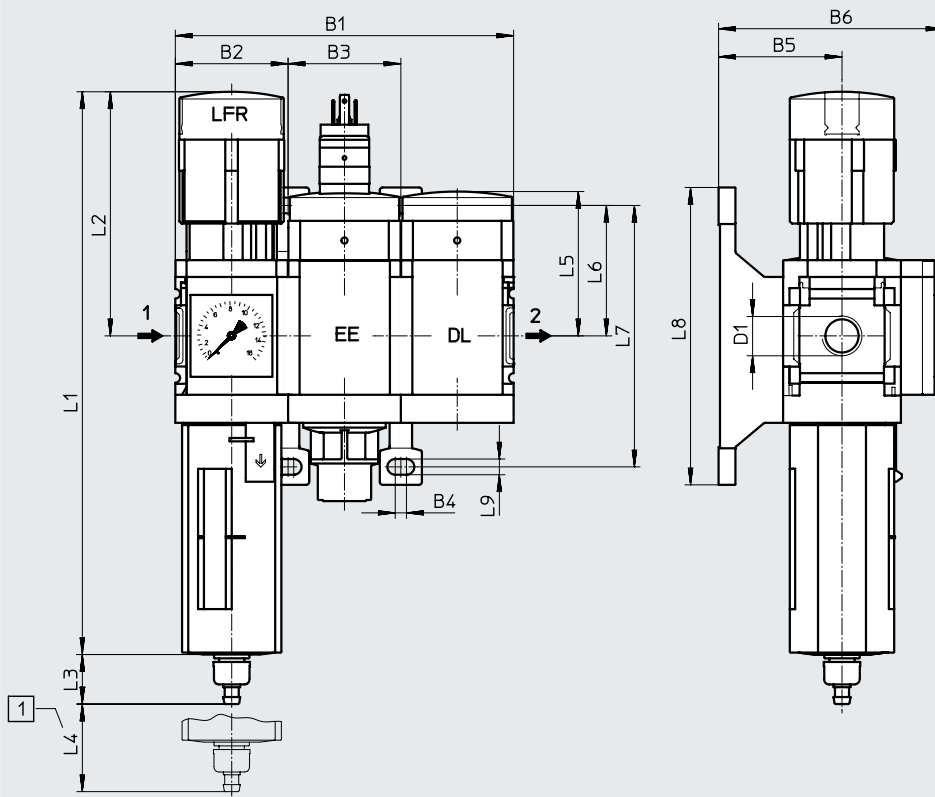


Datasheet – Combination 3

Dimensions

Download CAD data → www.festo.com

Filter regulator with pressure gauge, electrically actuated on/off valve, pneumatically actuated soft-start valve



[1] Installation dimension

→ Flow direction

Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	120.6	40.2	40.2	4	44	80	G1/4	201	87
MSB6	186	62	62	4.5	54	100	G1/2	285	134.5

Type	L3 Condensate drain		L4	L5	L6	L7	L8	L9
	Manual	Fully automatic						
MSB4	17.7	–	25	51.7	46.5	93.2	106	5.6
MSB6	15.8	18.5	68	71	71	142	158	6.6

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

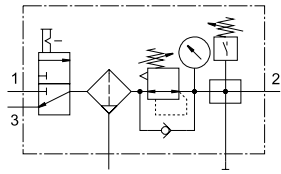
Ordering data

Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
Pressure regulation range 4 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G1/4	Manual	40	531101	MSB4-1/4;J1D1A1-WP
MSB6	G1/2	Manual	40	530222	MSB6-1/2;J1D1A1-WP
		Fully automatic	40	530224	MSB6-1/2;J2D1A1-WP

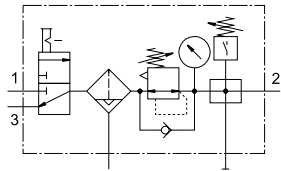
Datasheet – Combination 4

Function

With manual condensate drain



Fully automatic condensate drain



- Flow rate
1300 ... 5300 l/min
- Temperature range
-10 ... +60°C
- Pressure regulation range
0.5 ... 12 bar
- Spare parts service



- On/off valve MS...-EM1, manually operated
- Filter regulator MS...-LFR with pressure gauge
- Branching module MS...-FRM-Y with pressure switch or MS...-FRM-AD7 with pressure sensor for status indication
- Mounting bracket MS...-WP
- For filtered and unlubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range
- Electrical pressure monitoring with adjustable switching pressure

General technical data

Size	MSB4		MSB6	
	Branching module with	Pressure switch	Pressure sensor	Pressure switch
Pneumatic connection 1, 2, 3	G1/4		G1/2	
Regulator function	Output pressure constant, with primary pressure compensation, with return flow, with secondary exhausting			
Type of mounting	Via accessories			
Mounting position	Vertical ±5°			
Grade of filtration [µm]	40			
Air purity class at the output	Compressed air to ISO 8573-1:2010 [7:4:4] (grade of filtration 40 µm)			
Bowl guard	Plastic bowl guard			
Condensate drain	Manual	Manual	Manual	Manual
	Fully automatic	–	Fully automatic	–
Actuator lock	Rotary knob with latch, can be locked using accessories			
Pressure regulation range [bar]	–	0.5 ... 7	–	0.5 ... 7
	0.5 ... 12	0.5 ... 10	0.5 ... 12	0.5 ... 10
Pressure indication	Via pressure gauge for displaying the output pressure			

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Standard nominal flow rate q_N [l/min]

Size	MSB4		MSB6	
	Branching module with	Pressure switch	Pressure sensor	Pressure switch
Pressure regulation range 0.5 ... 7 bar				
Grade of filtration 40 µm	–	1750	–	5300
Pressure regulation range 0.5 ... 10 bar				
Grade of filtration 40 µm	–	1600	–	4500
Pressure regulation range 0.5 ... 12 bar				
Grade of filtration 40 µm	1300	–	4500	–

† 125 l/min must be available for the fully automatic condensate drain to close correctly.

Datasheet – Combination 4

Operating and environmental conditions						
Condensate drain	Manual				Fully automatic	
Size	MSB4		MSB6		MSB4	MSB6
Branching module with	Pressure switch	Pressure sensor	Pressure switch	Pressure sensor	Pressure switch	Pressure switch
Operating pressure [bar]	0.8 ... 14		0.8 ... 18		2 ... 12	2 ... 12
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
	Inert gases					
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)					
Ambient temperature [°C]	-10 ... +60	0 ... +50	-10 ... +60	0 ... +50	+5 ... +60	
Temperature of medium [°C]	-10 ... +60	0 ... +50	-10 ... +60	0 ... +50	+5 ... +60	
Storage temperature [°C]	-10 ... +60				-10 ... +60	
LABS (PWIS) conformity	VDMA24364-B1/B2-L					
Corrosion resistance class CRC ¹⁾	2					
Food-safe ²⁾	See supplementary material information					

1) More information www.festo.com/x/topic/crc

2) More information: www.festo.com/catalogue/msb → Support/Downloads.

Weight [g]		
Size	MSB4	MSB6
Service unit combination	1500	2000
Mounting bracket	40	76

Note

Materials → Datasheet for the individual devices

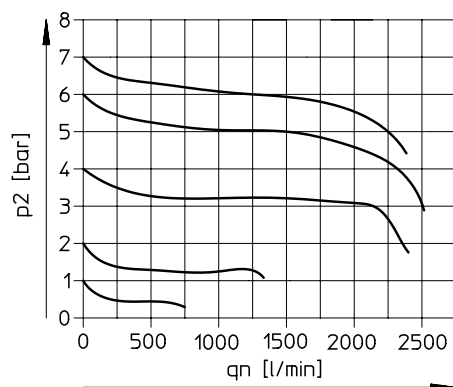
Standard flow rate q_n as a function of output pressure p_2

Pressure regulation range Grade of filtration 40 μm

0.5 ... 12 bar

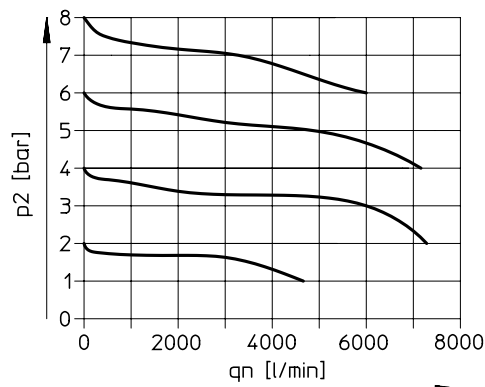
MSB4-1/4

Input pressure $p_1 = 10$ bar



MSB6-1/2

Input pressure $p_1 = 10$ bar

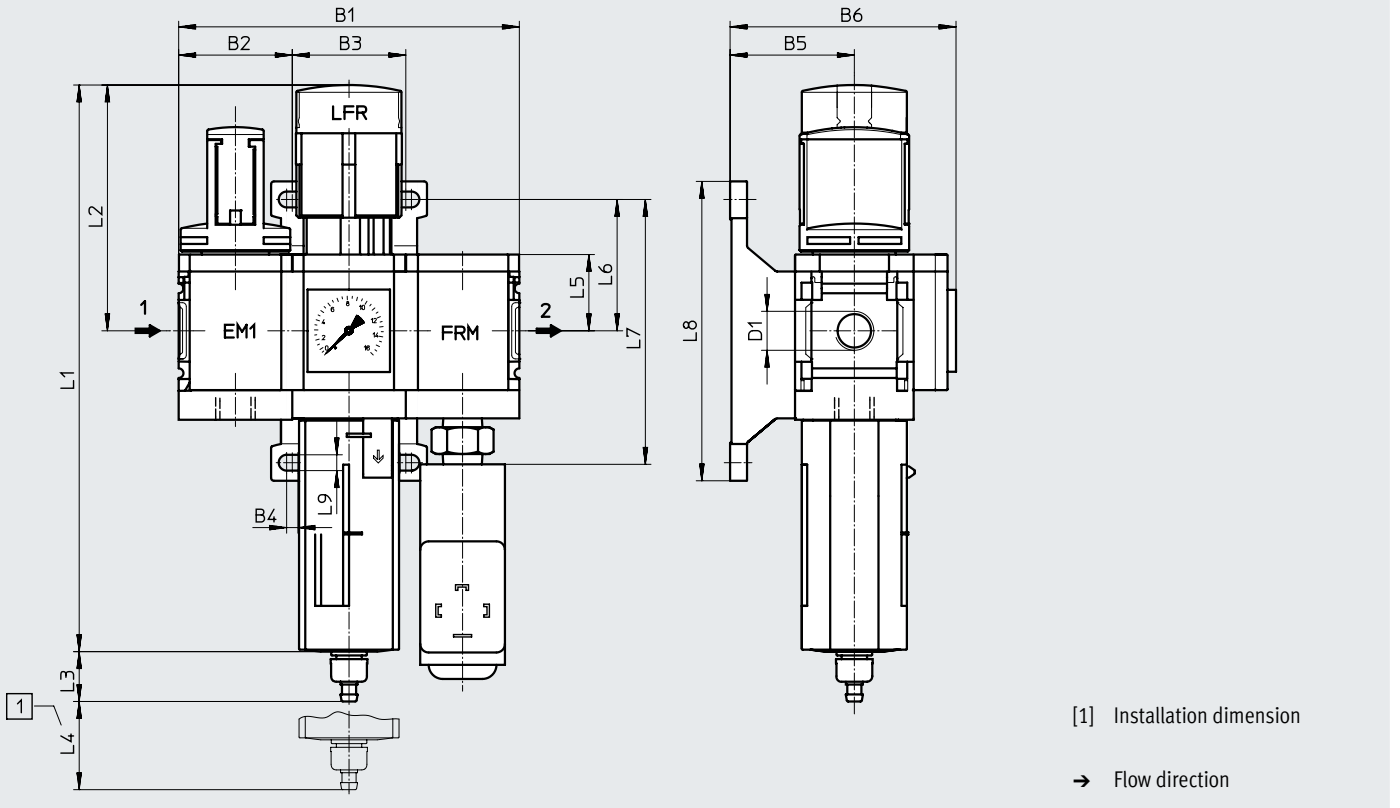


Datasheet – Combination 4

Dimensions

Download CAD data → www.festo.com

Manually operated on/off valve, filter regulator with pressure gauge, branching module with pressure switch



Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	120.6	40.2	40.2	4	44	80	G1/4	201	87
MSB6	186	62	62	4.5	54	100	G1/2	285	134.5

Type	L3 Condensate drain		L4	L5	L6	L7	L8	L9
	Manual	Fully automatic						
MSB4	17.7	20.4	25	27	46.5	93.2	106	5.6
MSB6	15.8	18.5	68	39	71	142	158	6.6

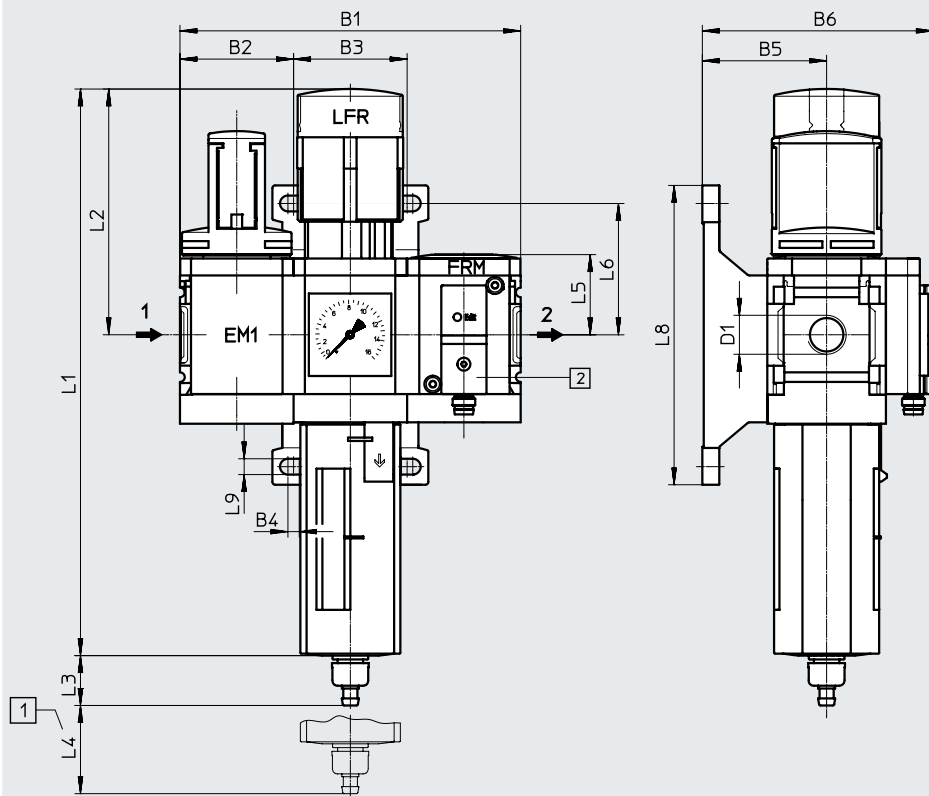
† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet – Combination 4

Dimensions

Download CAD data → www.festo.com

Manually operated on/off valve, filter regulator with pressure gauge, branching module with pressure sensor



- [1] Installation dimension
- [2] Pressure sensor SDE5-D10-0-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/O contact
→ Internet: sde5

→ Flow direction

Type	B1	B2	B3	B4	B5	B6	D1
MSB4	120.6	40.2	40.2	4	44	82	G1/4
MSB6	186	62	62	4.5	54	102	G1/2

Type	L1	L2	L3	L4	L5	L6	L8	L9
MSB4	201	87	17.7	25	29.4	46.5	106	5.6
MSB6	285	134.5	15.8	68	41.7	71	158	6.6

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet – Combination 4

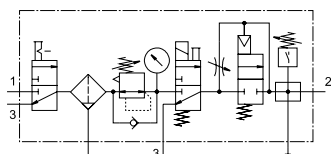
★ Core Range

Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
Pressure regulation range 0.5 ... 10 bar, pressure gauge with outer scale in bar and inner scale in psi, branching module with pressure sensor					
MSB4	G1/4	Manual	40	★ 8025356	MSB4-1/4:C3:J1:F12-WP
MSB6	G1/2	Manual	40	★ 8025357	MSB6-1/2:C3:J1:F12-WP
Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
Pressure regulation range 0.5 ... 7 bar, pressure gauge with outer scale in MPa, branching module with pressure sensor					
MSB4	G1/4	Manual	40	8042667	MSB4-1/4:C3:J120:F12-WP
MSB6	G1/2	Manual	40	8042671	MSB6-1/2:C3:J120:F12-WP
Pressure regulation range 0.5 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi, branching module with pressure switch					
MSB4	G1/4	Manual	40	542294	MSB4-1/4:C3:J1F3-WP
		Fully automatic	40	542300	MSB4-1/4:C3:J2F3-WP
MSB6	G1/2	Manual	40	542270	MSB6-1/2:C3:J1F3-WP
		Fully automatic	40	542276	MSB6-1/2:C3:J2F3-WP

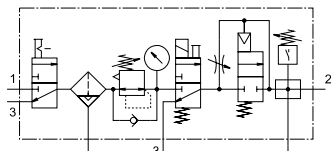
Datasheet – Combination 5





Function

With manual condensate drain



Fully automatic condensate drain



-  Flow rate
750 ... 3100 l/min
-  Temperature range
-10 ... +60°C
-  Pressure regulation range
4 ... 12 bar
-  Spare parts service



- On/off valve MS...-EM1, manually operated
- Filter regulator MS...-LFR-D7 with pressure gauge
- On/off valve MS...-EE-V24, electrically actuated
- Soft-start valve MS...-DL, pneumatically actuated
- Branching module MS...-FRM-Y with pressure switch without display
- Mounting bracket MS...-WP
- For filtered and unlubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range
- Gradual pressure build-up prevents sudden, unpredictable movements
- To shut-off and exhaust the following device or the system
- Electrical pressure monitoring with adjustable switching pressure

General technical data

Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G1/4	G1/2
Regulator function	Output pressure constant, with primary pressure compensation, with return flow, with secondary exhausting	
Type of mounting	Via accessories	
Mounting position	Vertical ±5°	
Grade of filtration [µm]	- 40	5
Air purity class at the output	Compressed air to ISO 8573-1:2010 [6:4:4] (grade of filtration 5 µm) Compressed air to ISO 8573-1:2010 [7:4:4] (grade of filtration 40 µm)	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual Fully automatic	
Actuator lock	Rotary knob with latch, can be locked using accessories	
Pressure regulation range [bar]	4 ... 12	
Pressure indication	With pressure gauge	
Characteristic coil data	24 V DC: 1.5 W	24 V DC: 1.5 W

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Standard nominal flow rate qnN [l/min]

Size	MSB4	MSB6
Grade of filtration 5 µm	-	3000
Grade of filtration 40 µm	750	3100

† 125 l/min must be available for the fully automatic condensate drain to close correctly.

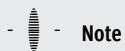
Datasheet – Combination 5

Operating and environmental conditions				
Condensate drain		Manual		Fully automatic
Size	MSB4	MSB6	MSB4	MSB6
Operating pressure [bar]	4.5 ... 14	4.5 ... 18	4.5 ... 12	4.5 ... 12
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases			
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)			
Ambient temperature [°C]	-10 ... +60		+5 ... +60	
Temperature of medium [°C]	-10 ... +60		+5 ... +60	
Storage temperature [°C]	-10 ... +60		-10 ... +60	
LABS (PWIS) conformity	VDMA24364-B1/B2-L			
Corrosion resistance class CRC ¹⁾	2			
Food-safe ²⁾	See supplementary material information			

1) More information www.festo.com/x/topic/crc

2) More information: www.festo.com/catalogue/msb → Support/Downloads.

Weight [g]		
Size	MSB4	MSB6
Service unit combination	2200	3500
Mounting bracket	40	76



Note

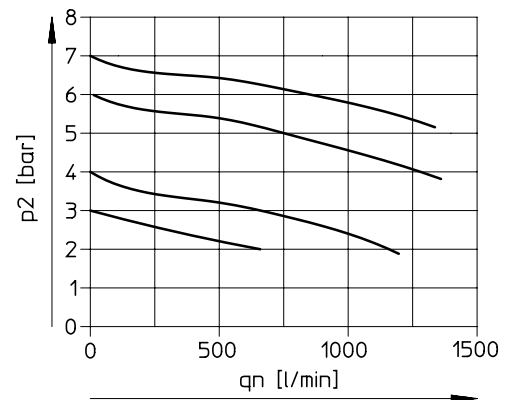
Materials → Datasheet for the individual devices

Standard flow rate q_n as a function of output pressure p_2

Pressure regulation range 4 ... 12 bar Grade of filtration 5 μm
MSB4-1/4

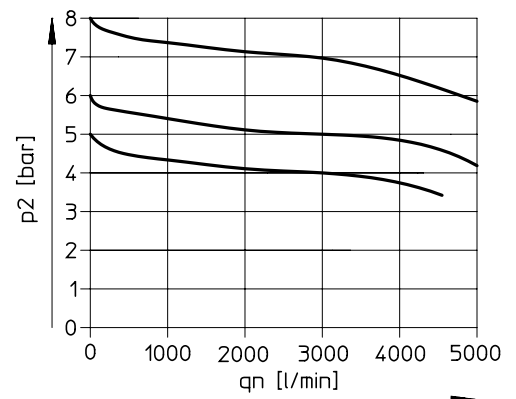
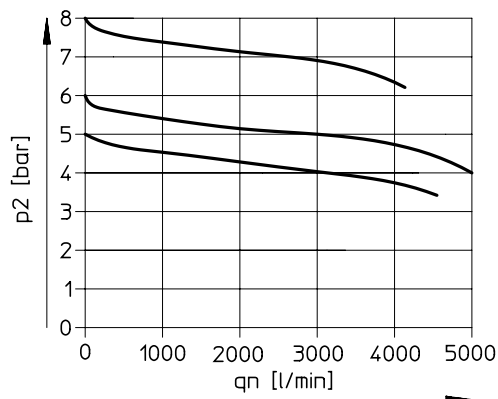
Grade of filtration 40 μm

Input pressure $p_1 = 10$ bar



MSB6-1/2

Input pressure $p_1 = 10$ bar

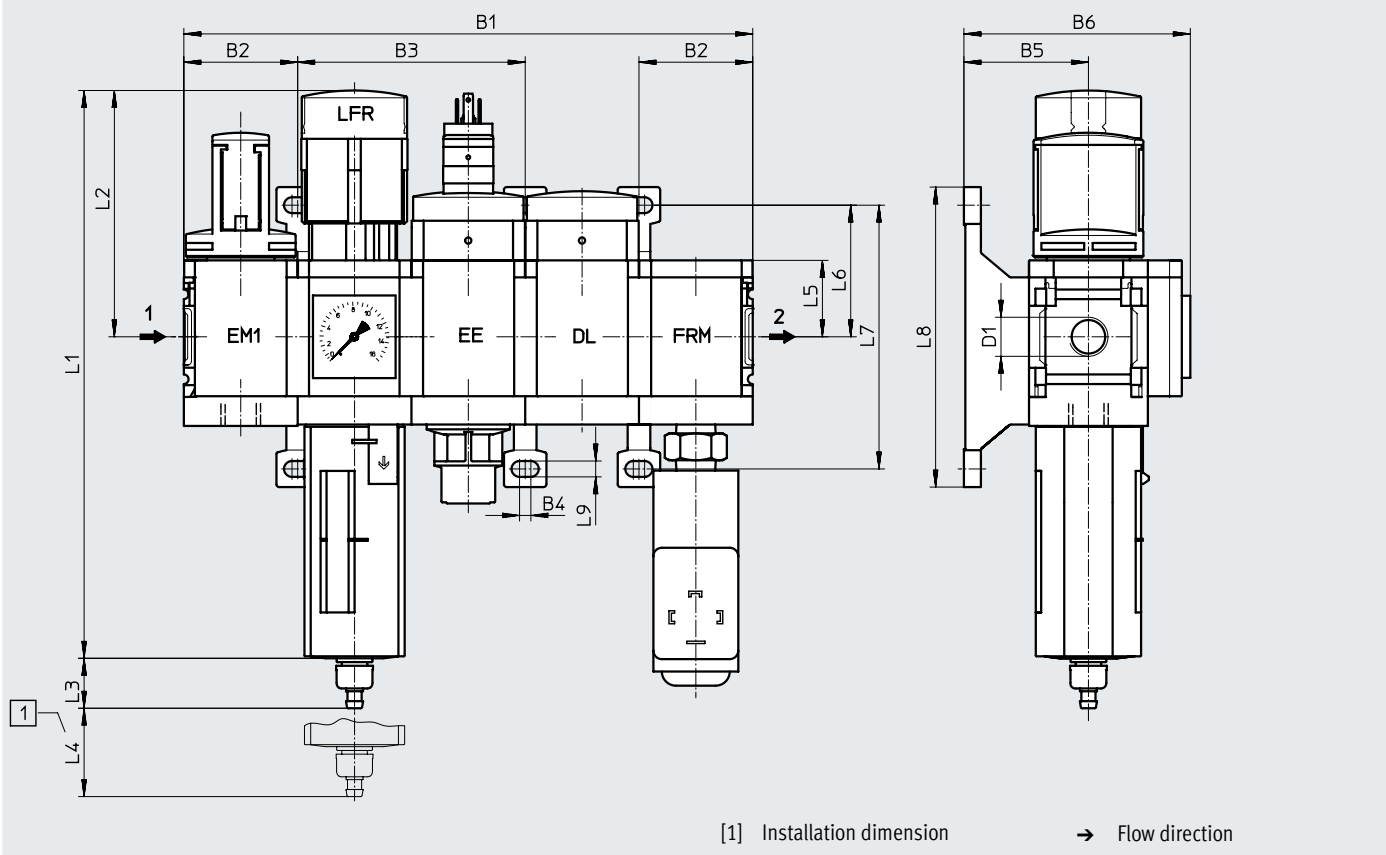


Datasheet – Combination 5

Dimensions

Download CAD data → www.festo.com

Manually operated on/off valve, filter regulator with pressure gauge, electrically actuated on/off valve, pneumatically actuated soft-start valve, branching module with pressure switch



Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	201	40.2	80.4	4	44	80	G1/4	201	87
MSB6	310	62	124	4.5	54	100	G1/2	285	134.5

Type	L3 Condensate drain		L4	L5	L6	L7	L8	L9
	Manual	Fully automatic						
MSB4	17.7	20.4	25	27	46.5	93.2	106	5.6
MSB6	15.8	18.5	68	39	71	142	158	6.6

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

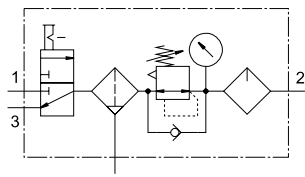
Ordering data

Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
Pressure regulation range 4 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G1/4	Manual	40	542293	MSB4-1/4:C3J1D1A1F3-WP
		Fully automatic	40	542299	MSB4-1/4:C3J2D1A1F3-WP
MSB6	G1/2	Manual	40	542269	MSB6-1/2:C3J1D1A1F3-WP
			5	542281	MSB6-1/2:C3J3D1A1F3-WP
		Fully automatic	40	542275	MSB6-1/2:C3J2D1A1F3-WP
			5	542287	MSB6-1/2:C3J4D1A1F3-WP

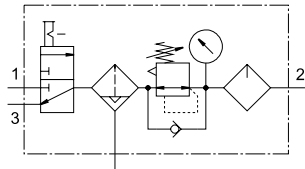
Datasheet – Combination 6

Function

With manual condensate drain



Fully automatic condensate drain



- On/off valve MS...-EM1, manually operated
- Filter regulator MS...-LFR-D7 with pressure gauge
- Lubricator MS...-LOE-R
- Mounting bracket MS...-WP

- Flow rate
750 ... 3100 l/min
- Temperature range
-10 ... +60°C
- Pressure regulation range
1 ... 12 bar
- Spare parts service



- For filtered and lubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range

General technical data		
Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G1/4	G1/2
Regulator function	Output pressure constant, with primary pressure compensation, with return flow, with secondary exhausting	
Type of mounting	Via accessories	
Mounting position	Vertical ±5°	
Grade of filtration [µm]	40	
Air purity class at the output	Compressed air to ISO 8573-1:2010 [7:4:-] (grade of filtration 40 µm)	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual	
	-	Fully automatic
Actuator lock	Rotary knob with latch, can be locked using accessories	
Pressure regulation range [bar]	1 ... 12	
Pressure indication	With pressure gauge	

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Standard nominal flow rate qnN [l/min]		
Size	MSB4	MSB6
Grade of filtration	40 µm	3100

† 125 l/min must be available for the fully automatic condensate drain to close correctly.


Datasheet – Combination 6

Operating and environmental conditions			
Condensate drain	Manual		Fully automatic
Size	MSB4	MSB6	MSB6
Operating pressure [bar]	1.5 ... 14	1.5 ... 18	2 ... 12
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
	Inert gases		
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Ambient temperature [°C]	-10 ... +60		+5 ... +60
Temperature of medium [°C]	-10 ... +60		+5 ... +60
Storage temperature [°C]	-10 ... +60		-10 ... +60
LABS (PWIS) conformity	VDMA24364-B1/B2-L		
Corrosion resistance class CRC ¹⁾	2		
Food-safe ²⁾	See supplementary material information		

1) More information www.festo.com/x/topic/crc

2) More information: www.festo.com/catalogue/msb → Support/Downloads.

Weight [g]		
Size	MSB4	MSB6
Service unit combination	1500	1750
Mounting bracket	40	76

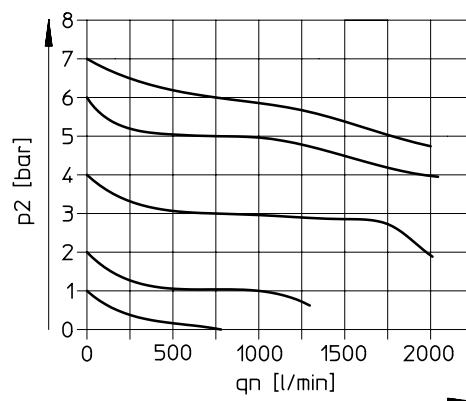
 **Note**

Materials → Datasheet for the individual devices

Standard flow rate q_n as a function of output pressure p_2

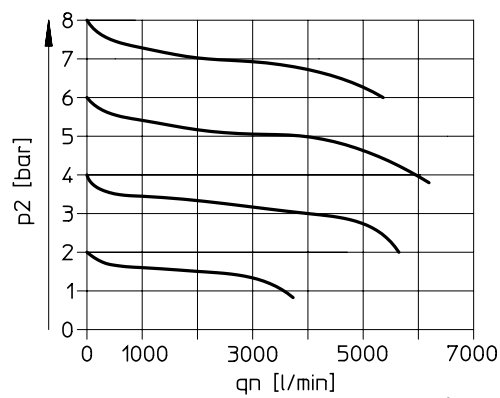
Pressure regulation range 1 ... 12 bar Grade of filtration 40 μm
MSB4-1/4

Input pressure $p_1 = 10$ bar



MSB6-1/2

Input pressure $p_1 = 10$ bar

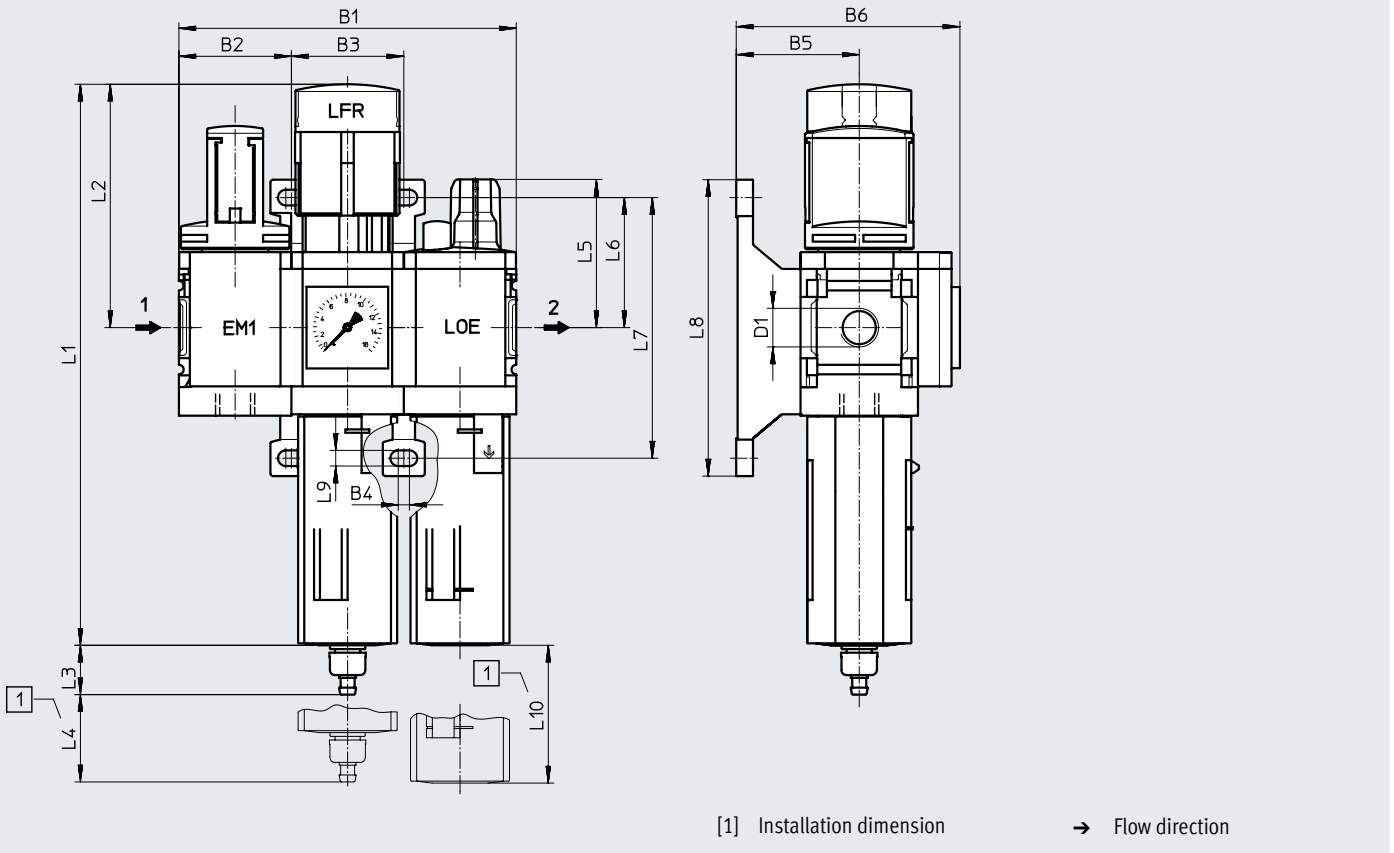


Datasheet – Combination 6

Dimensions

Download CAD data → www.festo.com

Manually operated on/off valve, filter regulator with pressure gauge, lubricator



Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	120.6	40.2	40.2	4	44	80	G1/4	201	87
MSB6	186	62	62	4.5	54	100	G1/2	285	134.5

Type	L3 Condensate drain		L4	L5	L6	L7	L8	L9	L10
	Manual	Fully automatic							
MSB4	17.7	–	25	53	46.5	93.2	106	5.6	80
MSB6	15.8	18.5	68	66	71	142	158	6.6	130

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

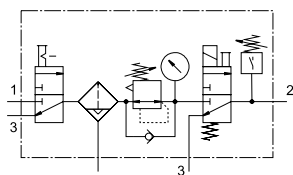
Ordering data

Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
Pressure regulation range 1 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G1/4	Manual	40	542296	MSB4-1/4:C3J1M1-WP
MSB6	G1/2	Manual	40	542272	MSB6-1/2:C3J1M1-WP
		Fully automatic	40	542278	MSB6-1/2:C3J2M1-WP

Datasheet – Combination 7

Function

With manual condensate drain



- On/off valve MS...-EM1, manually operated
- Filter regulator MS...-LFR with pressure gauge
- On/off valve MS...-EE-10V24P-AD7, electrically actuated, with pressure sensor for status indication
- Mounting bracket MS...-WP

- Flow rate
1400 ... 4400 l/min
- Temperature range
0 ... +50°C
- Pressure regulation range
4 ... 10 bar
- Spare parts service



- For filtered and unlubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range
- When the unit is switched off, quick exhausting ensures rapid pressure reduction
- Electrical pressure monitoring with adjustable switching pressure

General technical data		
Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G1/4	G1/2
Regulator function	Output pressure constant, with primary pressure compensation, with return flow, with secondary exhausting	
Type of mounting	Via accessories	
Mounting position	Vertical ±5°	
Grade of filtration [µm]	40	
Air purity class at the output	Compressed air to ISO 8573-1:2010 [7:4:4]	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual	
Actuator lock	Rotary knob with latch, can be locked using accessories	
Pressure regulation range [bar]	4 ... 7	
	4 ... 10	
Pressure indication	Via pressure sensor for indicating the output pressure via status indicator and electrical output	
	Via pressure gauge for displaying the output pressure	

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Electrical data – On/off valve MS...-EE-10V24P-AD7	
Characteristic coil data	24 V DC: 1.8 W; permissible voltage fluctuations –15%/+10%
Electrical connection	M12x1 to IEC 61076-2-101
Degree of protection for solenoid coil	IP65
Duty cycle [%]	100


Datasheet – Combination 7

Standard nominal flow rate qnN [l/min]		
Size	MSB4	MSB6
Pressure regulation range 4 ... 7 bar		
Grade of filtration	40 µm	1600
		4400
Pressure regulation range 4 ... 10 bar		
Grade of filtration	40 µm	1400
		4000
Operating and environmental conditions		
Condensate drain	Manual	
Size	MSB4	MSB6
Operating pressure [bar]	4 ... 14	4 ... 18
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
	Inert gases	
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)	
Ambient temperature [°C]	0 ... +50	
Temperature of medium [°C]	0 ... +50	
Storage temperature [°C]	-10 ... +60	
LABS (PWIS) conformity	VDMA24364-B1/B2-L	
Corrosion resistance class CRC ¹⁾	2	
Food-safe ²⁾	See supplementary material information	

1) More information www.festo.com/x/topic/crc

2) More information: www.festo.com/catalogue/msb → Support/Downloads.

Weight [g]		
Size	MSB4	MSB6
Service unit combination	1600	2000
Mounting bracket	40	76

 **Note**

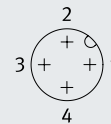
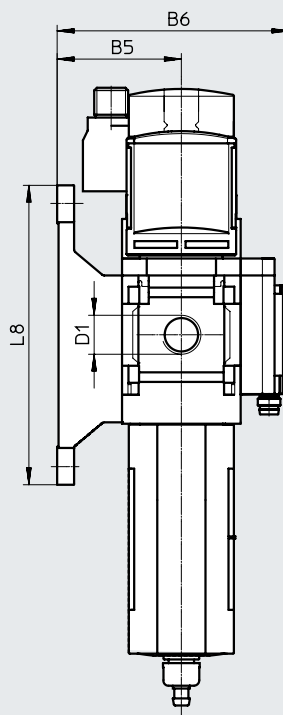
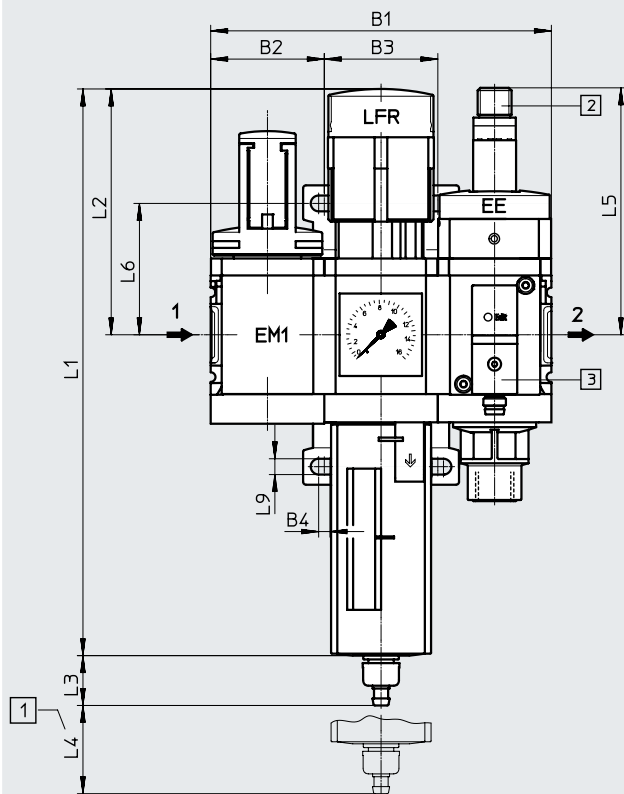
Materials → Datasheet for the individual devices

Datasheet – Combination 7

Dimensions

Download CAD data → www.festo.com

Manually operated on/off valve, filter regulator with pressure gauge, electrically actuated on/off valve with pressure sensor



- 1 = not assigned
- 2 = not assigned
- 3 = com (-)
- 4 = Signal (+) solenoid 14

- [1] Installation dimension
- [2] Electrical connection to IEC 61076-2-101, M12x1 plug, 2-pin, for NEBU-M12

- [3] Pressure sensor SDE5-D10-0-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/O contact
→ Internet: sde5

→ Flow direction

Type	B1	B2	B3	B4	B5	B6	D1
MSB4	120.6	40.2	40.2	4	44	82	G1/4
MSB6	186	62	62	4.5	54	102	G1/2

Type	L1	L2	L3	L4	L5	L6	L8	L9
MSB4	201	87	17.7	25	86.3	46.5	106	5.6
MSB6	285	134.5	15.8	68	104	71	158	6.6

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

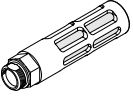
Datasheet – Combination 7


★ Core Range


Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
Pressure regulation range 4 ... 10 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G1/4	Manual	40	★ 8025358	MSB4-1/4:C3:j1:D14-WP
MSB6	G1/2	Manual	40	★ 8025359	MSB6-1/2:C3:j1:D14-WP
Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part no.	Type
Pressure regulation range 4 ... 7 bar, pressure gauge with outer scale in MPa					
MSB4	G1/4	Manual	40	8042666	MSB4-1/4:C3:j120:D14-WP
MSB6	G1/2	Manual	40	8042670	MSB6-1/2:C3:j120:D14-WP

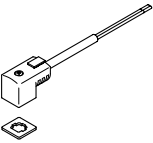
Accessories


★ Core Range

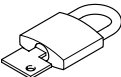
Ordering data – Silencer U				Datasheets → Internet: u	
	Description	Pneumatic connection	Part no.	Type	
	For MS4-EM1/EE	G1/4	6842	U-1/4-B	
	For MS6-EM1/EE	G1/2	6844	U-1/2-B	
	For MS4-EE-B/EDE-B/EM1FR-B	G1/4	2316	U-1/4	
	For MS6-EE-B/EDE-B/EM1FR-B	G1/2	2310	U-1/2	

Ordering data – Angled plug socket PEV					Datasheets → Internet: pev	
	Description	Operating voltage range	Electrical connection	Switching status indication	Part no.	Type
	For PEV-1/4-...-OD	15 ... 30 V DC	4-pin	Yellow LED	164274	PEV-1/4-WD-LED-24
		≤ 230 V AC	4-pin	Yellow LED	164275	PEV-1/4-WD-LED-230
		≤ 180 V DC				

Ordering data – Plug socket MSSD					Datasheets → Internet: mssd	
	Description	Operating voltage range	Electrical connection	Type of mounting for cable connection	Part no.	Type
	For PEV-1/4-...-OD	≤ 250 V AC/DC	3-pin	Clamping screws	171157	MSSD-C-4P
	For MS4/6-EE/DE		3-pin	Clamping screws	★ 151687	MSSD-EB
		≤ 250 V AC/DC	4-pin	Insulation displacement technology	192745	MSSD-EB-S-M14

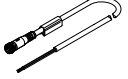
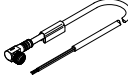
Ordering data – Plug socket with cable KMEB						Datasheets → Internet: kmeb	
	Description	Operating voltage	Electrical connection	Switching status indication	Cable length [m]	Part no.	Type
	For MS4/6-EE/DE	24 V DC	2-pin	LED	2.5	547268	KMEB-3-24-2.5-LED
				–	5	547269	KMEB-3-24-5-LED
				–	2.5	547270	KMEB-3-24-2.5
			3-pin	LED	5	547271	KMEB-3-24-5
				LED	2.5	★ 151688	KMEB-1-24-2.5-LED
				–	5	151689	KMEB-1-24-5-LED
		230 V AC	3-pin	–	10	193457	KMEB-1-24-10-LED
				–	2.5	151690	KMEB-1-230AC-2.5
				–	5	151691	KMEB-1-230AC-5
				–			

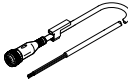
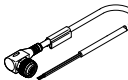
Ordering data – Illuminating seal MEB-LD				Datasheets → Internet: meb	
	Description	Operating voltage range	Part no.	Type	
	For plug socket with cable KMEB and plug socket MSSD-EB	12 ... 24 V DC	151717	MEB-LD-12-24DC	
		230 V DC/AC ±10%	151718	MEB-LD-230AC	

Ordering data – Padlock LRVS-D			
	Description	Weight [g]	Part no. / Type
	For filter and pressure regulators	120	193786 / LRVS-D

Accessories

★ Core Range

Ordering data – Connecting cable NEBU-M8					Datasheets → Internet: nebu
	Electrical connection	Number of cores	Cable length [m]	Part no.	Type
	M8x1, straight socket	3	2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
			5	★ 541334	NEBU-M8G3-K-5-LE3
	M8x1, angled socket	3	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
			5	★ 541341	NEBU-M8W3-K-5-LE3

Ordering data – Connecting cable NEBU-M12					Datasheets → Internet: nebu
	Electrical connection	Number of cores	Cable length [m]	Part no.	Type
	M12x1, straight socket	4	2.5	★ 550326	NEBU-M12G5-K-2.5-LE4
			5	★ 541328	NEBU-M12G5-K-5-LE4
	M12x1, angled socket	4	2.5	550325	NEBU-M12W5-K-2.5-LE4
			5	541329	NEBU-M12W5-K-5-LE4