

Service units MSB4/MSB6, MS series

FESTO



Festo core product range
Covers 80% of your automation tasks

Worldwide:

Always in stock

Superb:

Festo quality at an attractive price

Easy:

Simplified procurement and warehousing

★ Generally ready for shipping ex works in 24 hours
In stock at 13 Service Centres worldwide
More than 2200 products

★ Generally ready for shipping ex works in 5 days
Assembled for you at 4 Service Centres worldwide
Up to 6×10^{12} variants per product family

Just look
for the
star!

Key features

MS series service unit components

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 to the highest quality standards. 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

All the individual components, such as 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. Their modular structure means that the components are freely combinable. The simple connection method saves time when replacing

individual modules without needing to dismantle the entire combination. Many of the components are also UL and ATEX certified.

CAD models and configurator

Convenient aids for planning and selecting application-specific individual components and combinations. The product configurator lets you configure customised solutions quickly and transfer the order data with no hassle.

Engineering tools

Selection tool for choosing the right service unit without oversizing, and with the right air quality class:
 → www.festo.com/engineering/wartungseinheit



Integrated sensors

Pressure and flow sensors

Safety functions

Soft-start/quick exhaust valves
 MS6-SV/MS9-SV

Energy savings

Service units MSE6

Intelligent mix of sizes



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



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



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



- Optimum flow rate with up to 18% smaller size
- 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 $q_{nN}^{1)}$ [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 complete product range for the MS series service unit components.

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

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

Structure of a service unit

The order of the individual components within a service unit is relevant for safety and functionality. It is not possible to assemble the service unit components 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 arranging individual service unit components and it ensures that the applicable rules are complied with. As a result, you get a completely assembled unit with UL or ATEX certification if you need it.

When arranging a combination of individually configured and ordered service unit components, the points on the right 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







Total product range for MS series service unit components

| Type | Description | Size | Pneumatic connection | | | | | |
|---|---|------|----------------------|---------------|---------------|--------|------------------------------|---------------------------|
| | | | Push-in connector | Female thread | | | Connecting plate with thread | |
| | | | | M | G | NPT | G | NPT |
| Combinations | | | | | | | | |
| Service units MSB-FRC Data sheets → Internet: msb | | | | | | | | |
|  | Combinations of filter regulator and lubricator | 4 | – | – | 1/8, 1/4 | – | – | – |
| | | 6 | – | – | 1/4, 3/8, 1/2 | – | – | – |
| Service units MSB Data sheets → Internet: msb | | | | | | | | |
|  | 7 combinations, predefined | 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 units MSE6 Data sheets → Internet: mse6 | | | | | | | | |
|  | Combinations with fieldbus connection for measuring pressure, flow rate and consumption | 6 | – | – | – | – | 1/2 | – |








Key features

| Total product range for MS series service unit components | | | | | | | | |
|---|---|------|----------------------|---------------|---------------|------------------------------|---------------------------|--------------------------------|
| Type | Description | Size | Pneumatic connection | | | Connecting plate with thread | | |
| | | | Push-in connector | Female thread | | G | | NPT |
| | | | M | G | NPT | G | NPT | |
| Individual components | | | | | | | | |
| Filter regulators MS-LFR | | | | | | | | Data sheets → Internet: ms-lfr |
|  | Filter and pressure regulator in a single device, filtration grade 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 MS-LF | | | | | | | | |
| | | | | | | | | Data sheets → Internet: ms-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 | | | | | | | | |
| | | | | | | | | Data sheets → Internet: ms-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 | | | | | | | | |
| | | | | | | | | Data sheets → Internet: ms-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 | | | | | | | | |
| | | | | | | | | Data sheets → Internet: ms-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

| Total product range for MS series service unit components | | | | | | | | |
|---|---|------|----------------------|---------------|---------------|------------------------------|---------------------------|---------------------------------|
| Type | Description | Size | Pneumatic connection | | | Connecting plate with thread | | |
| | | | Push-in connector | Female thread | | G | | NPT |
| | | | M | G | NPT | G | NPT | |
| Individual components | | | | | | | | |
| Pressure regulators MS-LR | | | | | | | | Data sheets → Internet: ms-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-LRB | | | | | | | | Data sheets → Internet: ms-lrb |
|  | For configuring a regulator manifold with independent pressure regulation ranges. Pressure output is to 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 | | | | | | | | Data sheets → Internet: ms-lrp |
|  | For precisely setting of 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 | | | | | | | | Data sheets → Internet: ms-lrpb |
|  | For configuring a regulator manifold with independent pressure regulation ranges. Pressure output is to the front or rear. | 6 | – | – | 1/2 | – | 1/4, 3/8, 1/2, 3/4 | – |
| | | | | | | | | |
| Electric pressure regulators MS-LRE | | | | | | | | Data sheets → Internet: ms-lre |
|  | Electrically adjustable pressure regulator, 4 pressure regulation ranges | 6 | – | – | 1/4, 3/8, 1/2 | – | 1/4, 3/8, 1/2, 3/4 | 1/4, 3/8, 1/2, 3/4 |
| | | | | | | | | |
| Lubricators MS-LOE | | | | | | | | Data sheets → Internet: ms-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 | – |

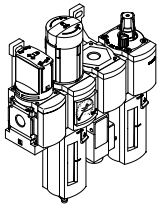
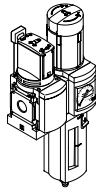
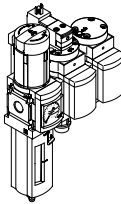
Key features

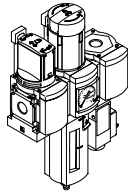
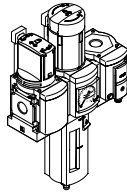
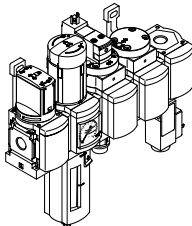
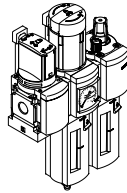
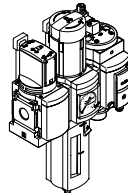
| Total product range for MS series service unit components | | | | | | | | |
|---|---|------|----------------------|---------------|---------------|------------------------------|---------------------------|-------------------------------|
| Type | Description | Size | Pneumatic connection | | | Connecting plate with thread | | |
| | | | Push-in connector | Female thread | | G | | NPT |
| | | | M | G | NPT | G | NPT | |
| Individual components | | | | | | | | |
| On/off valves MS-EM | | | | | | | | Data sheets → Internet: ms-em |
|  | Manually operated on/off valve for pressurising and exhausting pneumatic installations. | 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 | | | | | | | | Data sheets → Internet: ms-ee |
|  | Solenoid actuated on/off valve for pressurising and exhausting pneumatic installations. | 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 | – |
| Soft-start valves MS-DL | | | | | | | | |
| Soft-start valves MS-DL | | | | | | | | Data sheets → Internet: ms-dl |
|  | Pneumatically actuated soft-start valve for slowly pressurising and exhausting pneumatic installations. | 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 | | | | | | | | Data sheets → Internet: ms-de |
|  | Solenoid actuated soft-start valve for slowly pressurising and exhausting pneumatic installations. | 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/quick exhaust valves MS-SV | | | | | | | | |
| Soft-start/quick exhaust valves MS-SV | | | | | | | | Data sheets → Internet: ms-sv |
|  | For building up pressure gradually and reducing pressure quickly and safely 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

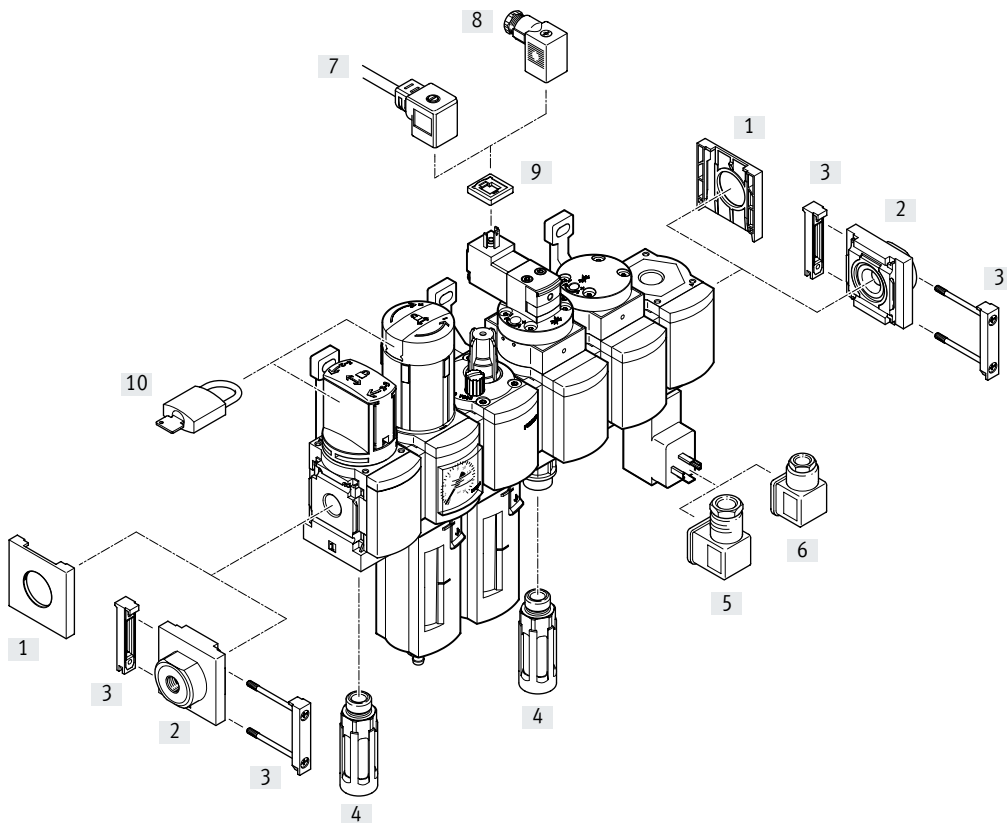
| Total product range for MS series service unit components | | | | | | | | |
|---|--|------|----------------------|---------------|---------------|--------|------------------------------------|---------------------------|
| Type | Description | Size | Pneumatic connection | | | | Connecting plate with thread | |
| | | | Push-in connector | Female thread | | | | |
| | | | M | G | NPT | G | NPT | |
| Individual components | | | | | | | | |
| Membrane air dryer MS-LDM1 | | | | | | | Data sheets → Internet: ms-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 | | | | | | | | |
| | | | | | | | Data sheets → Internet: ms-frm | |
|  | Compressed air distributors with 4 connections | 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 | | | | | | | | |
| | | | | | | | Data sheets → Internet: ms-frm-frz | |
|  | Compressed air distributors with 4 connections and half the grid width | 4 | - | - | - | - | - | - |
| | | 6 | - | - | - | - | - | - |
| Flow sensors SFAM | | | | | | | | |
| | | | | | | | Data sheets → Internet: sfam | |
|  | For absolute flow rate information and accumulated air consumption measurement | 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, lockable | LFR | ■ | ■ | ■ |
| Lubricator | LOE | ■ | - | - |
| Solenoid actuated on/off valve | EE | - | - | ■ |
| Solenoid 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 | ■ | ■ | ■ |
| Data sheet → page | | 10 | 13 | 17 |

| Combinations | | Combination 4 | | Combination 5 | Combination 6 | Combination 7 |
|--|-----|---|---|--|---|---|
| | |  |  |  |  |  |
| Comprising: | | | | | | |
| Manually operated on/off valve | EM1 | ■ | ■ | ■ | ■ | ■ |
| Filter regulator with pressure gauge, lockable | LFR | ■ | ■ | ■ | ■ | ■ |
| Lubricator | LOE | - | - | - | ■ | - |
| Solenoid actuated on/off valve | EE | - | - | ■ | - | - |
| Solenoid 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 | ■ | ■ | ■ | ■ | ■ |
| Data sheet → page | | 20 | 20 | 25 | 28 | 31 |

Peripherals overview



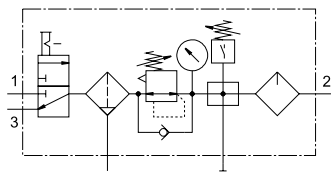
Note
 The range of accessories depends on the service unit selected.
 Range of accessories
 → Peripherals pages of the individual components

| Mounting components 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-MV | ms4-mv, ms6-mv |
| [4] | Silencer U | 35 |
| [5] | Angled plug socket PEV-1/4-WD-LED | 35 |
| [6] | Plug socket MSSD-C-4P | 35 |
| [7] | Plug socket with cable KMEB | 35 |
| [8] | Plug socket MSSD-EB | 35 |
| [9] | Illuminating seal MEB-LD | 35 |
| [10] | Padlock LRVS-D | 35 |
| - | Mounting bracket MS4/6-WP/WPB/WPE/WPM | ms4-wp, ms6-wp |

Data sheet – Combination 1

Function

With manual rotary condensate drain



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

- 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



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

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 venting |
| Type of mounting | With accessories |
| Mounting position | Vertical ±5° |
| Grade of filtration [µm] | 40 |
| Air quality class at the output | Compressed air to ISO 8573-1:2010 [7:4:-] |
| Bowl guard | Plastic bowl guard |
| Condensate drain | Manual rotary |
| Actuator lock | Rotary knob with detent, can be locked using accessories |
| Pressure regulation range [bar] | 1 ... 12 |
| Pressure indication | Via 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 |

Data sheet – Combination 1

| Operating and environmental conditions | |
|--|--|
| Condensate drain | Manual rotary |
| 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 |
| Corrosion resistance class CRC ¹⁾ | 2 |
| Food-safe ²⁾ | See supplementary information on materials |

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

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

2) Additional information is available at www.festo.com/sp → Certificates.

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

**Note**

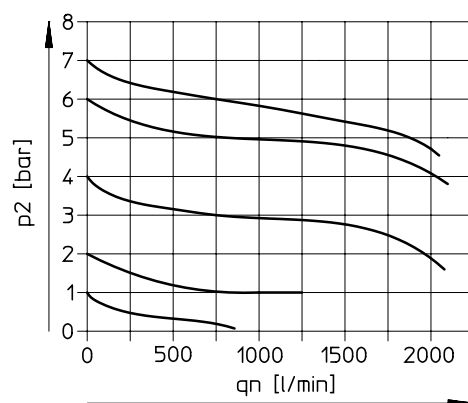
Materials → Data sheet for the individual components

Standard flow rate q_n as a function of output pressure p_2

Pressure regulation range 1 ... 12 bar Degree of filtration 40 μm

MSB4-1/4

Primary pressure $p_1 = 10$ bar

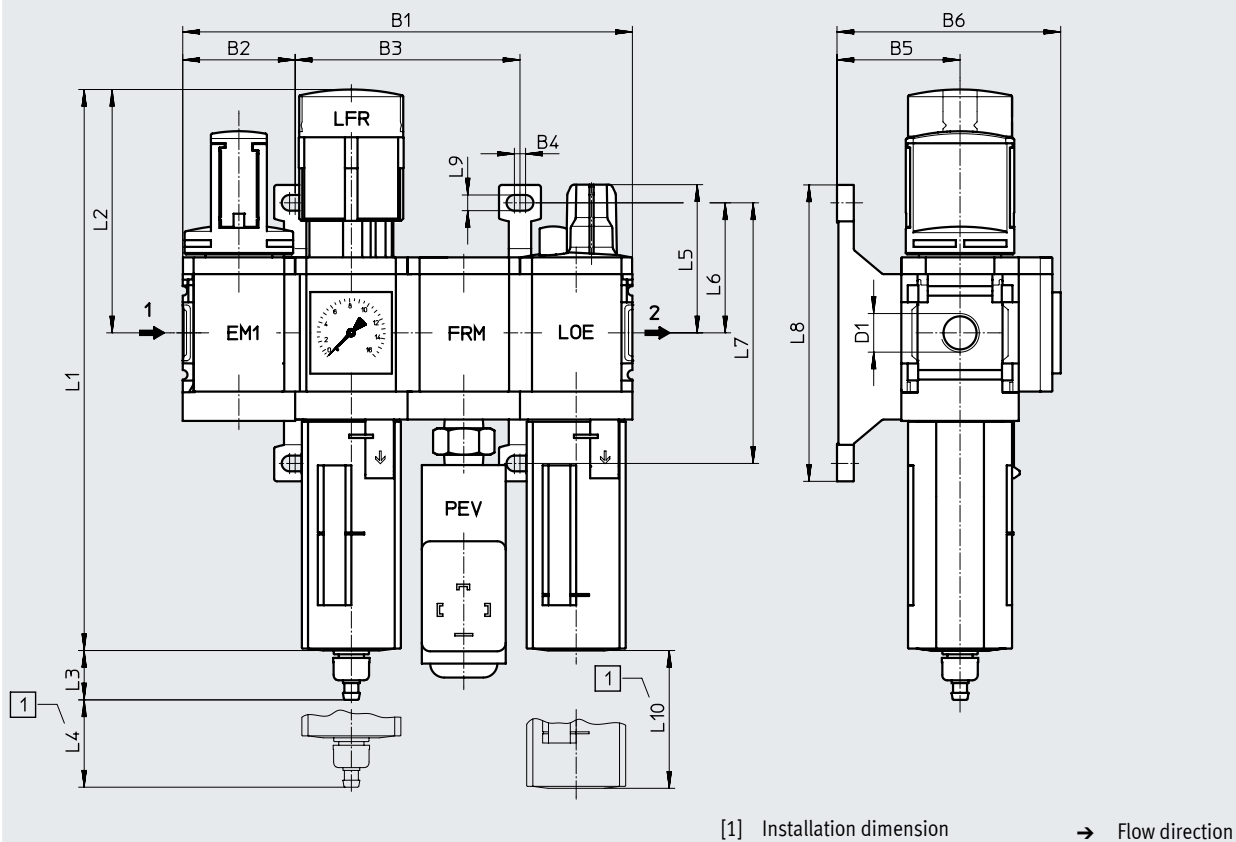


Data sheet – Combination 1

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.

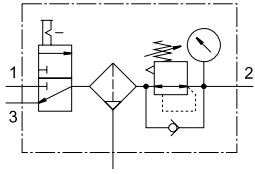
Ordering data

| Size | Connection | Condensate drain | Degree 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 rotary | 40 | 542295 | MSB4-1/4:C3J1F3M1-WP |

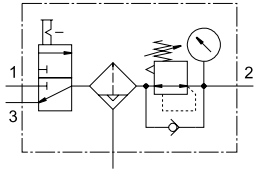
Data sheet – Combination 2

Function

With manual rotary 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 switched on or off
- 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 venting | |
| Type of mounting | With accessories | |
| Mounting position | Vertical ±5° | |
| Grade of filtration [µm] | 5 40 | |
| Air quality 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 rotary Fully automatic | |
| Actuator lock | Rotary knob with detent, can be locked using accessories | |
| Pressure regulation range [bar] | 0.5 ... 7 0.5 ... 12 | |
| Pressure indication | Via pressure gauge | |

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

Standard nominal flow rate qn [l/min]

| Condensate drain | Manual rotary | | Fully automatic | |
|---|---------------|------|-----------------|------|
| | MSB4 | MSB6 | MSB4 | MSB6 |
| Pressure regulation range 0.5 ... 7 bar | | | | |
| Grade of filtration 40 µm | 1150 | 5500 | - | - |
| Pressure regulation range 0.5 ... 12 bar | | | | |
| Grade of filtration 5 µm | 950 | 4800 | 950 | 4800 |
| Grade of filtration 40 µm | 1700 | 5100 | 1000 | 5100 |

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

Data sheet – Combination 2

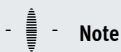
| Operating and environmental conditions | | | | |
|--|--|------------|-----------------|----------|
| Condensate drain | Manual rotary | | Fully automatic | |
| Size | MSB4 | MSB6 | MSB4 | MSB6 |
| Operating pressure [bar] | 0.8 ... 14 | 0.8 ... 18 | 2 ... 12 | 2 ... 12 |
| Operating medium | Compressed 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 | | +5 ... +60 | |
| Temperature of medium [°C] | -10 ... +60 | | +5 ... +60 | |
| Storage temperature [°C] | -10 ... +60 | | -10 ... +60 | |
| Corrosion resistance class CRC ¹⁾ | 2 | | | |
| Food-safe ²⁾ | See supplementary information on materials | | | |

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

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

2) Additional information is available at www.festo.com/sp → Certificates.

| Weight [g] | | |
|------------------|------|------|
| Size | MSB4 | MSB6 |
| Service unit | 1300 | 1100 |
| Mounting bracket | 40 | 76 |



Note

Materials → Data sheet for the individual components

Standard flow rate q_n as a function of output pressure p_2

Pressure regulation range

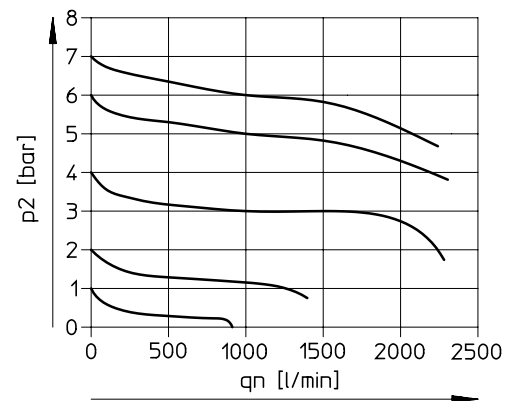
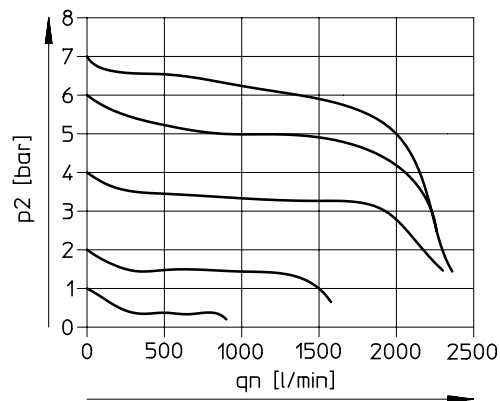
0.5 ... 12 bar

MSB4-1/4

Degree of filtration 5 μm

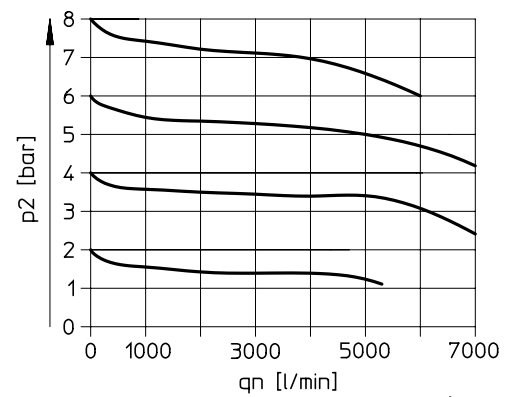
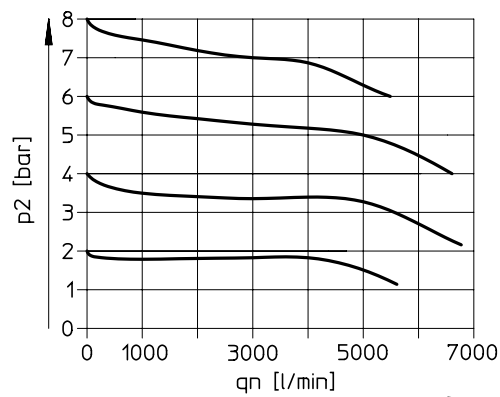
Degree of filtration 40 μm

Primary pressure $p_1 = 10$ bar



MSB6-1/2

Primary pressure $p_1 = 10$ bar

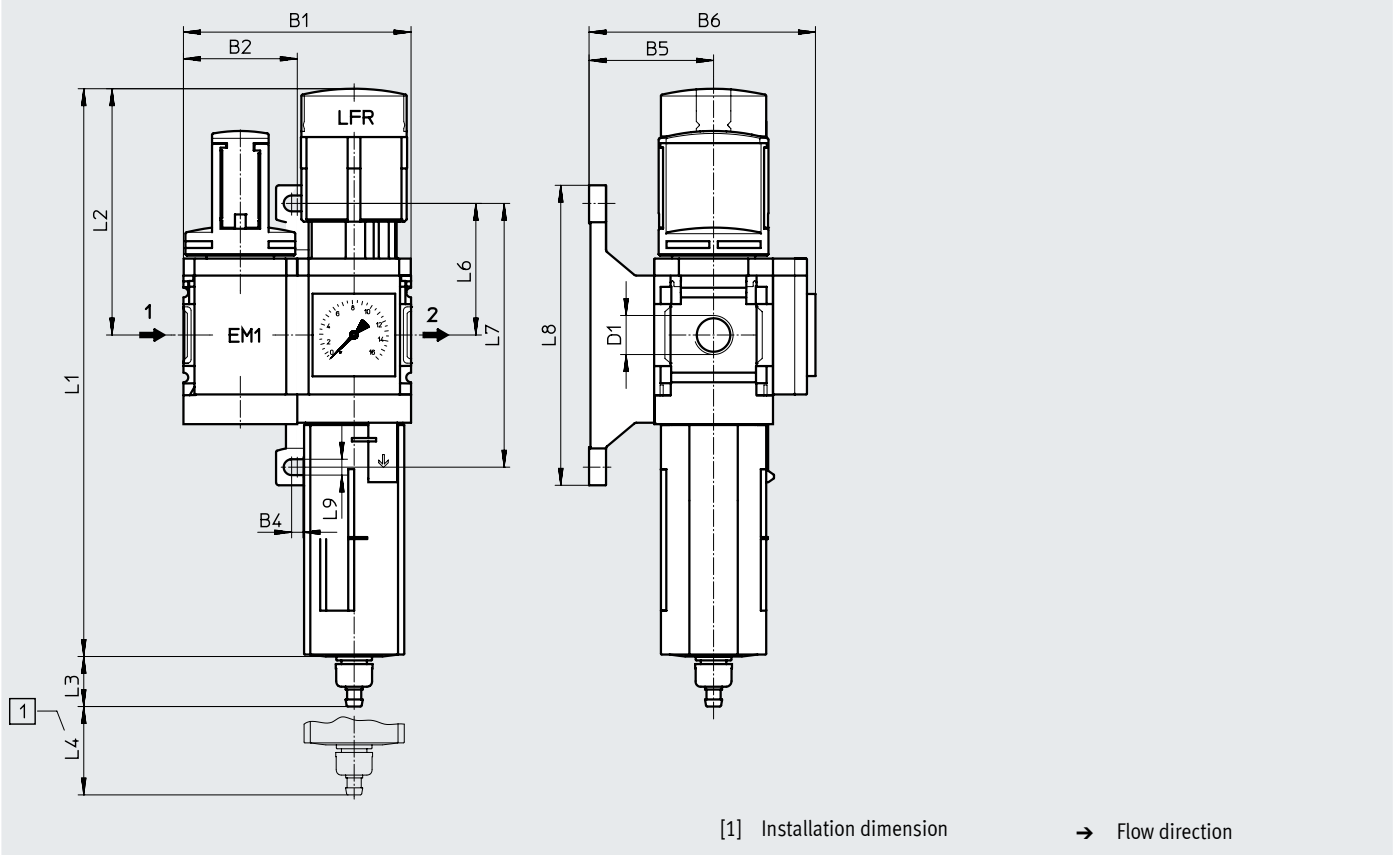


Data sheet – Combination 2

Dimensions

Download CAD data → www.festo.com

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



| 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 rotary | 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.

Data sheet – Combination 2

★ Core product range

| Ordering data | | | | | |
|--|------------|------------------|---------------------------|-----------|-------------------|
| Size | Connection | Condensate drain | Degree 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 rotary | 40 | ★ 8025354 | MSB4-1/4:C3:J1-WP |
| MSB6 | G1/2 | Manual rotary | 40 | ★ 8025355 | MSB6-1/2:C3:J1-WP |

| Ordering data | | | | | |
|--|------------|------------------|---------------------------|----------|---------------------|
| Size | Connection | Condensate drain | Degree of filtration [µm] | Part no. | Type |
| Pressure regulation range 0.5 ... 7 bar, pressure gauge with outer scale in MPa | | | | | |
| MSB4 | G1/4 | Manual rotary | 40 | 8042668 | MSB4-1/4:C3:J120-WP |
| MSB6 | G1/2 | Manual rotary | 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 rotary | 5 | 542304 | MSB4-1/4:C3:J3-WP |
| | | Fully automatic | 40 | 542298 | MSB4-1/4:C3:J2-WP |
| | | | 5 | 542310 | MSB4-1/4:C3:J4-WP |
| MSB6 | G1/2 | Manual rotary | 5 | 542280 | MSB6-1/2:C3:J3-WP |
| | | Fully automatic | 40 | 542274 | MSB6-1/2:C3:J2-WP |
| | | | 5 | 542286 | MSB6-1/2:C3:J4-WP |

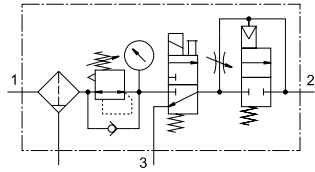
Festo core product range

- ★ Generally ready for shipping ex works in 24 hours
- ★ Generally ready for shipping ex works in 5 days

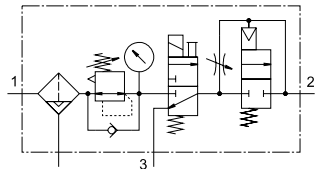
Data sheet – Combination 3

Function

With manual rotary condensate drain



Fully automatic condensate drain



- Filter regulator MS...-LFR-D7 with pressure gauge
- On/off valve MS...-EE-V24, solenoid 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 venting 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 venting | |
| Type of mounting | With accessories | |
| Mounting position | Vertical ±5° | |
| Grade of filtration [µm] | 40 | |
| Air quality 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 rotary | |
| | - | Fully automatic |
| Actuator lock | Rotary knob with detent, can be locked using accessories | |
| Pressure regulation range [bar] | 4 ... 12 | |
| Pressure indication | Via 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.

Data sheet – Combination 3


| Operating and environmental conditions | | | |
|--|--|------------|---|
| Condensate drain | Manual rotary | | 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 |
| Corrosion resistance class CRC ¹⁾ | 2 | | |
| Food-safe ²⁾ | See supplementary information on materials | | |

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

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

2) Additional information is available at www.festo.com/sp → Certificates.

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

 **Note**

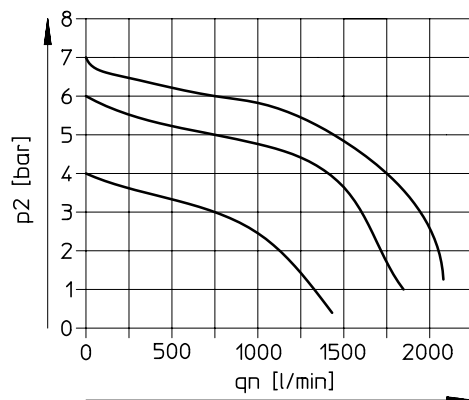
Materials → Data sheet for the individual components

Standard flow rate q_n as a function of output pressure p_2

Pressure regulation range 4 ... 12 bar Degree of filtration 40 μm

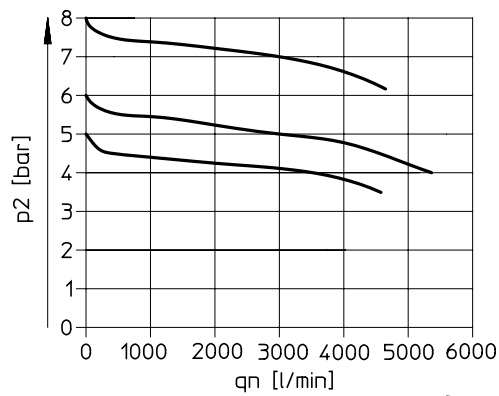
MSB4-1/4

Primary pressure $p_1 = 10$ bar



MSB6-1/2

Primary pressure $p_1 = 10$ bar

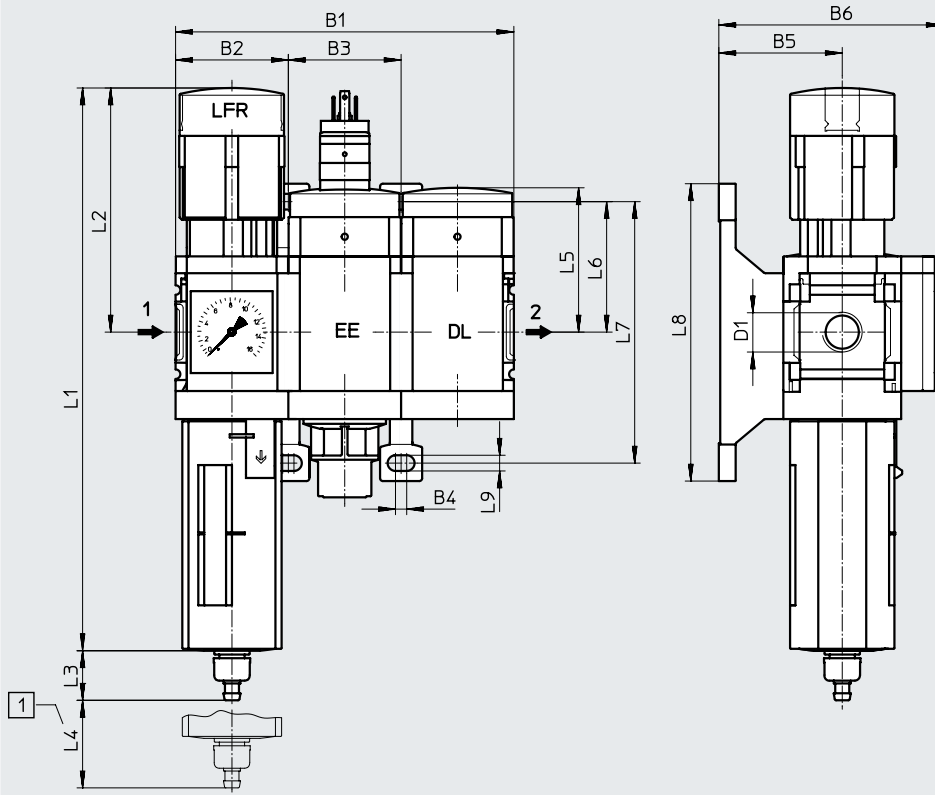


Data sheet – Combination 3

Dimensions

Download CAD data → www.festo.com

Filter regulator with pressure gauge, solenoid 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 rotary | 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.

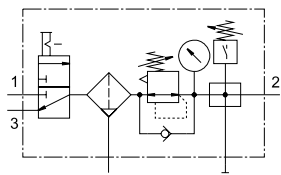
Ordering data

| Size | Connection | Condensate drain | Degree 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 rotary | 40 | 531101 | MSB4-1/4:J1D1A1-WP |
| MSB6 | G1/2 | Manual rotary | 40 | 530222 | MSB6-1/2:J1D1A1-WP |
| | | Fully automatic | 40 | 530224 | MSB6-1/2:J2D1A1-WP |

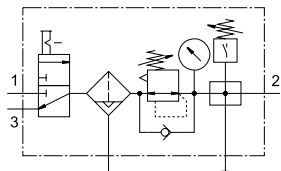
Data sheet – Combination 4

Function

With manual rotary 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



- For filtered and unlubricated compressed air
- Supply pressure can be switched on or off
- Output pressure is infinitely adjustable within the pressure regulation range
- Electrical pressure monitoring with adjustable switching pressure

- 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

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 venting | | | |
| Type of mounting | With accessories | | | |
| Mounting position | Vertical ±5° | | | |
| Grade of filtration [µm] | 40 | | | |
| Air quality 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 rotary | Manual rotary | Manual rotary | Manual rotary |
| | Fully automatic | - | Fully automatic | - |
| Actuator lock | Rotary knob with detent, 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 indicating the output pressure | | | |

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

Standard nominal flow rate qnN [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.

Data sheet – Combination 4

| Operating and environmental conditions | | | | | | |
|--|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| Condensate drain | Manual rotary | | | | 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 |
| Corrosion resistance class CRC ¹⁾ | 2 | | | | | |
| Food-safe ²⁾ | See supplementary information on materials | | | | | |

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

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

2) Additional information is available at www.festo.com/sp → Certificates.

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



Note

Materials → Data sheet for the individual components

Standard flow rate q_n as a function of output pressure p_2

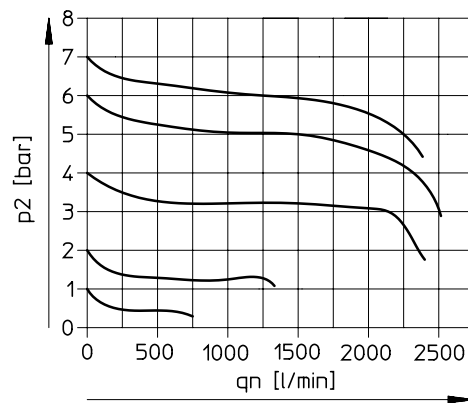
Pressure regulation range

Degree of filtration 40 μ m

0.5 ... 12 bar

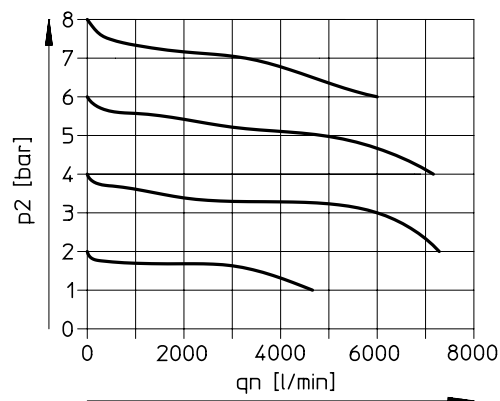
MSB4-1/4

Primary pressure $p_1 = 10$ bar



MSB6-1/2

Primary pressure $p_1 = 10$ bar

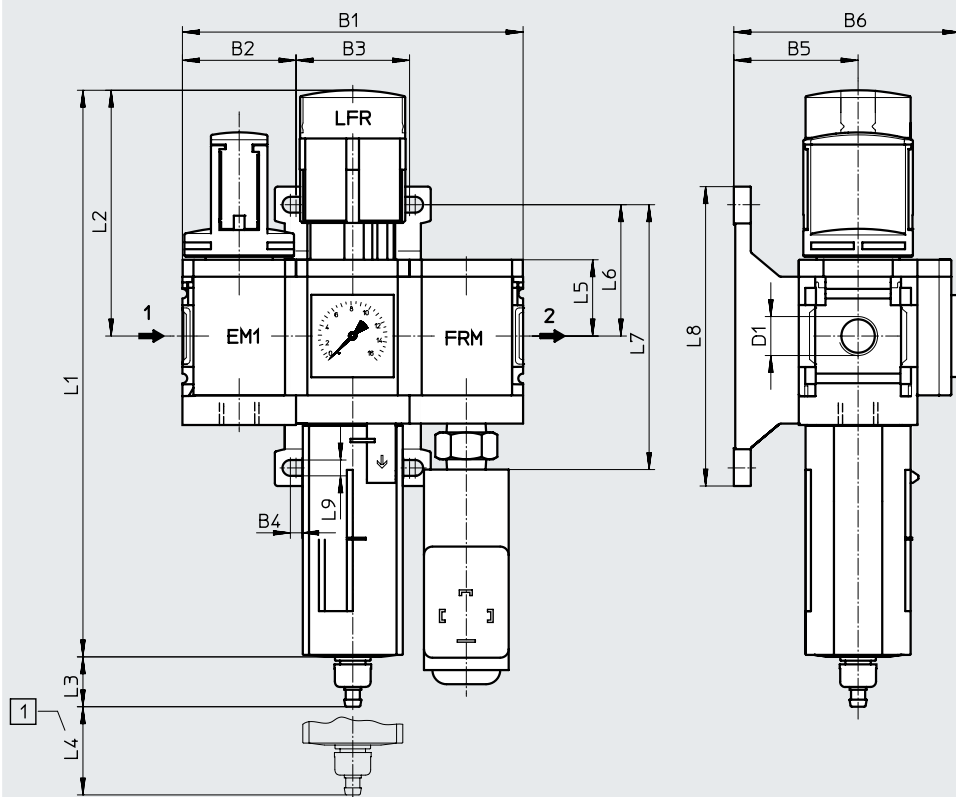


Data sheet – Combination 4

Dimensions

Download CAD data → www.festo.com

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



- [1] Installation dimension
- [2] Pressure switch PEV-1/4-B-OD with adjustable pressure switching point, plug, square design to EN 175301, type A
→ Internet: pev

→ 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 rotary | 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 |

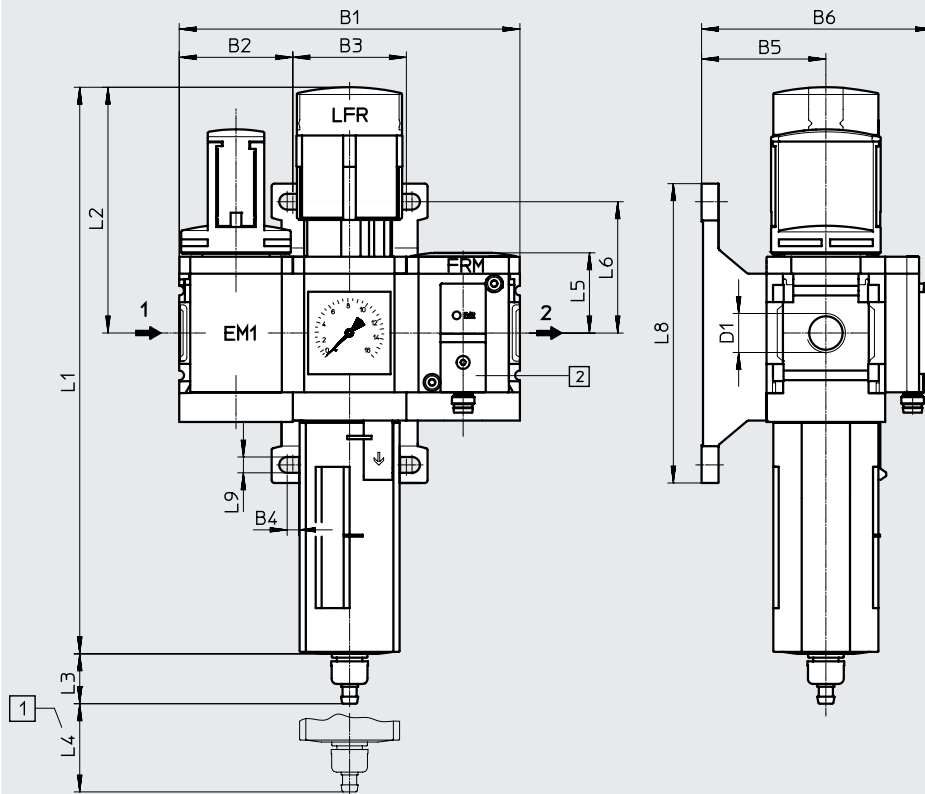
† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Data sheet – 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-O-...-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.

Data sheet – Combination 4

★ Core product range

| Ordering data | | | | | |
|---|------------|------------------|---------------------------|-----------|-----------------------|
| Size | Connection | Condensate drain | Degree 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 rotary | 40 | ★ 8025356 | MSB4-1/4:C3:J1:F12-WP |
| MSB6 | G1/2 | Manual rotary | 40 | ★ 8025357 | MSB6-1/2:C3:J1:F12-WP |

| Ordering data | | | | | |
|---|------------|------------------|---------------------------|----------|-------------------------|
| Size | Connection | Condensate drain | Degree 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 rotary | 40 | 8042667 | MSB4-1/4:C3:J120:F12-WP |
| MSB6 | G1/2 | Manual rotary | 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 rotary | 40 | 542294 | MSB4-1/4:C3:J1F3-WP |
| | | Fully automatic | 40 | 542300 | MSB4-1/4:C3:J2F3-WP |
| MSB6 | G1/2 | Manual rotary | 40 | 542270 | MSB6-1/2:C3:J1F3-WP |
| | | Fully automatic | 40 | 542276 | MSB6-1/2:C3:J2F3-WP |

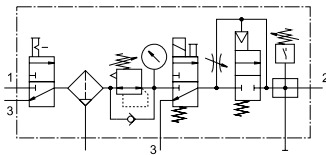
Festo core product range

- ★ Generally ready for shipping ex works in 24 hours
- ☆ Generally ready for shipping ex works in 5 days

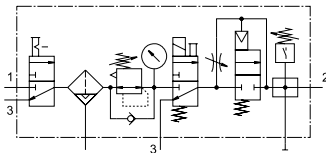
Data sheet – Combination 5





Function

With manual rotary 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, solenoid 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 switched on or off
- Output pressure is infinitely adjustable within the pressure regulation range
- Gradual pressure build-up prevents sudden, unpredictable movements
- To shut-off and vent 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 venting | |
| Type of mounting | With accessories | |
| Mounting position | Vertical ±5° | |
| Grade of filtration [µm] | - | 5 |
| | 40 | |
| Air quality 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 rotary | |
| | Fully automatic | |
| Actuator lock | Rotary knob with detent, can be locked using accessories | |
| Pressure regulation range [bar] | 4 ... 12 | |
| Pressure indication | Via 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 q_n [l/min]

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

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

Data sheet – Combination 5

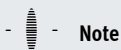
| Operating and environmental conditions | | | | |
|--|--|---------------|-------------|-----------------|
| Condensate drain | | Manual rotary | | Fully automatic |
| Size | MSB4 | MSB6 | MSB4 | MSB6 |
| Operating pressure [bar] | 4.5 ... 14 | 4.5 ... 18 | 4.5 ... 12 | 4.5 ... 12 |
| Operating medium | 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 | |
| Corrosion resistance class CRC ¹⁾ | 2 | | | |
| Food-safe ²⁾ | See supplementary information on materials | | | |

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

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

2) Additional information is available at www.festo.com/sp → Certificates.

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



Note

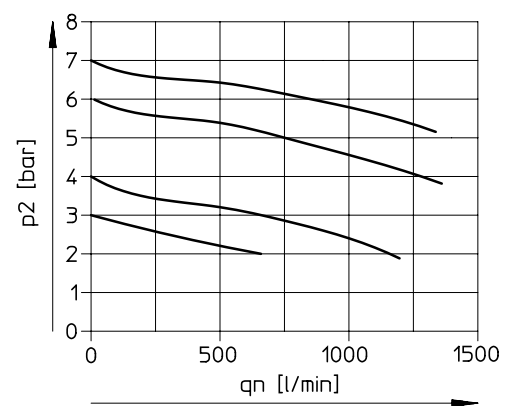
Materials → Data sheet for the individual components

Standard flow rate q_n as a function of output pressure p_2

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

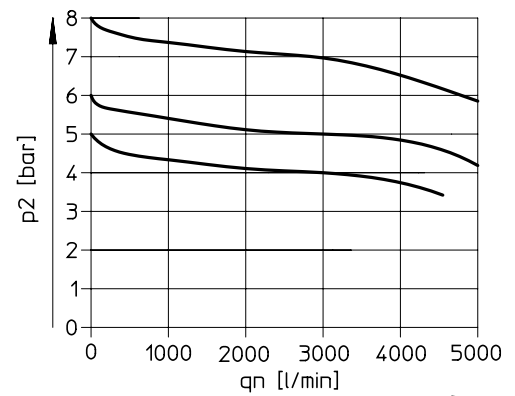
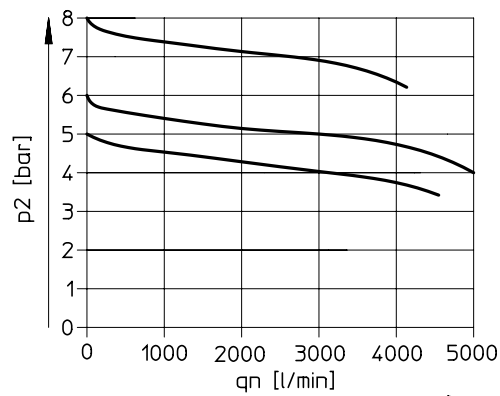
Degree of filtration 40 μm

Primary pressure $p_1 = 10$ bar



MSB6-1/2

Primary pressure $p_1 = 10$ bar

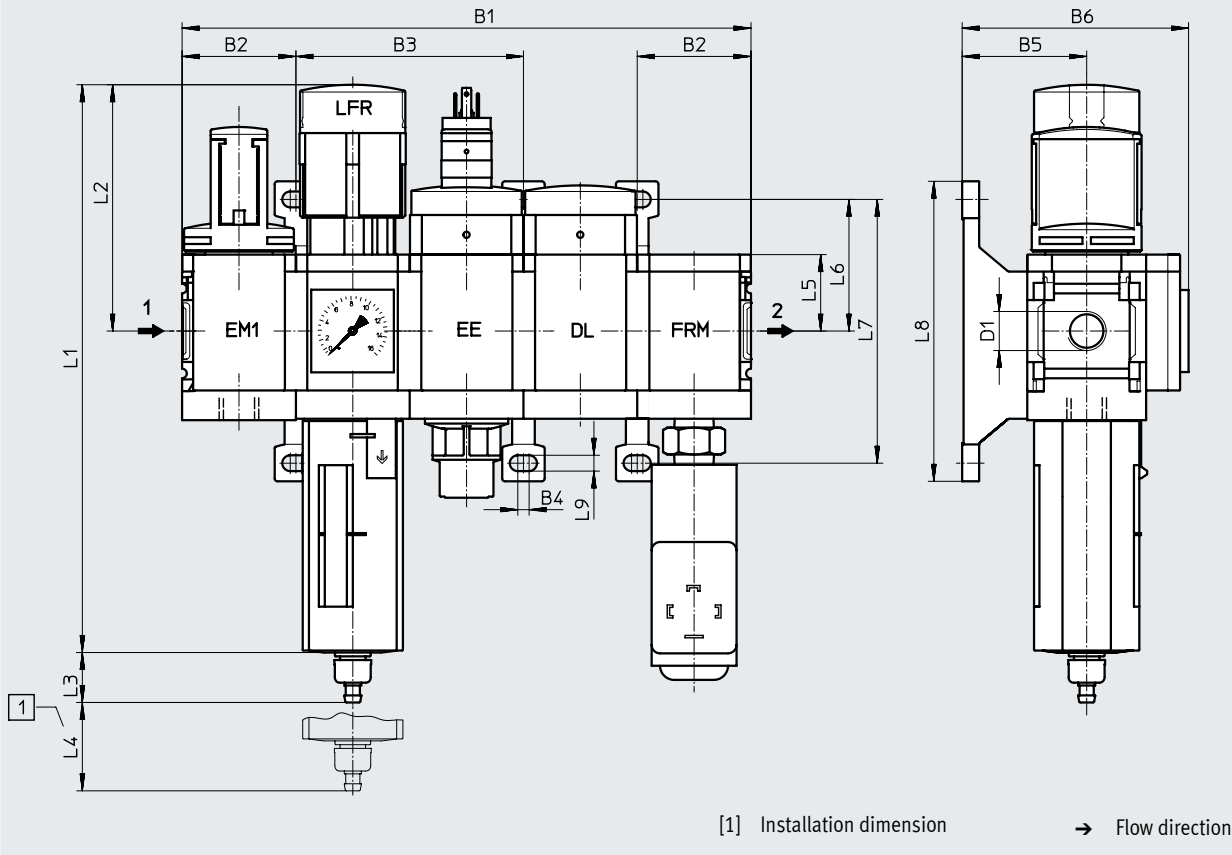


Data sheet – Combination 5

Dimensions

Download CAD data → www.festo.com

Manually operated on/off valve, filter regulator with pressure gauge, solenoid 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 rotary | 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.

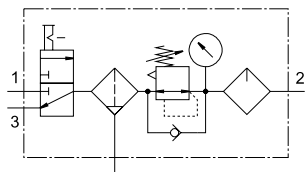
Ordering data

| Size | Connection | Condensate drain | Degree 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 rotary | 40 | 542293 | MSB4-1/4:C3J1D1A1F3-WP |
| | | Fully automatic | 40 | 542299 | MSB4-1/4:C3J2D1A1F3-WP |
| MSB6 | G1/2 | Manual rotary | 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 |

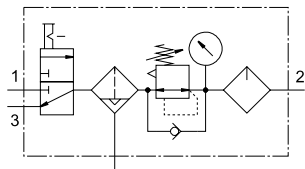
Data sheet – Combination 6

Function

With manual rotary 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 switched on or off
- 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 venting | |
| Type of mounting | With accessories | |
| Mounting position | Vertical ±5° | |
| Grade of filtration [µm] | 40 | |
| Air quality 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 rotary | Fully automatic |
| Actuator lock | Rotary knob with detent, can be locked using accessories | |
| Pressure regulation range [bar] | 1 ... 12 | |
| Pressure indication | Via 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 | 750 | 3100 |

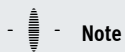
† 125 l/min must be available for the fully automatic condensate drain to close correctly.

Data sheet – Combination 6

| Operating and environmental conditions | | | |
|--|--|------------|-----------------|
| Condensate drain | Manual rotary | | 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 |
| Corrosion resistance class CRC ¹⁾ | 2 | | |
| Food-safe ²⁾ | See supplementary information on materials | | |

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.
- 2) Additional information is available at www.festo.com/sp → Certificates.

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



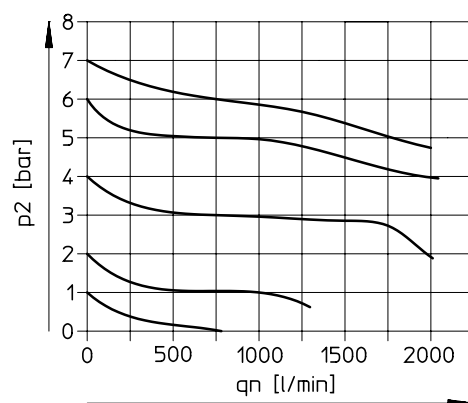
Note

Materials → Data sheet for the individual components

Standard flow rate q_n as a function of output pressure p_2

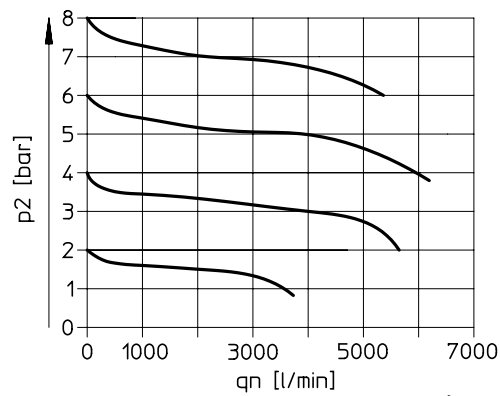
Pressure regulation range 1 ... 12 bar Degree of filtration 40 μm
MSB4-1/4

Primary pressure $p_1 = 10$ bar



MSB6-1/2

Primary pressure $p_1 = 10$ bar

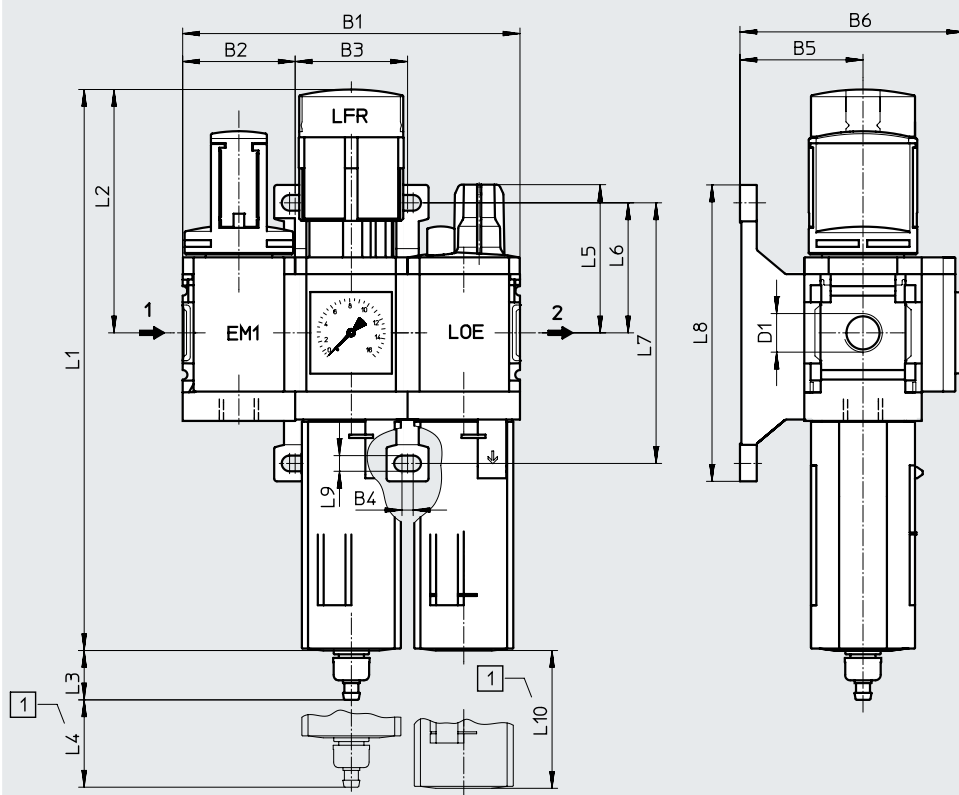


Data sheet – Combination 6

Dimensions

Download CAD data → www.festo.com

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



[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 | L10 |
|------|------------------------|-----------------|----|----|------|------|-----|-----|-----|
| | Manual rotary | 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.

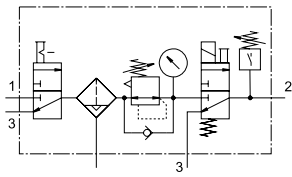
Ordering data

| Size | Connection | Condensate drain | Degree 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 rotary | 40 | 542296 | MSB4-1/4:C3J1M1-WP |
| MSB6 | G1/2 | Manual rotary | 40 | 542272 | MSB6-1/2:C3J1M1-WP |
| | | Fully automatic | 40 | 542278 | MSB6-1/2:C3J2M1-WP |

Data sheet – Combination 7

Function

With manual rotary condensate drain



- Flow rate 1400 ... 4400 l/min
- Temperature range 0 ... +50°C
- Pressure regulation range 0.5 ... 10 bar
- Spare parts service

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



- For filtered and unlubricated compressed air
- Supply pressure can be switched on or off
- Output pressure is infinitely adjustable within the pressure regulation range
- When the unit is switched off, quick venting 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 venting | |
| Type of mounting | With accessories | |
| Mounting position | Vertical ±5° | |
| Grade of filtration [µm] | 40 | |
| Air quality class at the output | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| Bowl guard | Plastic bowl guard | |
| Condensate drain | Manual rotary | |
| Actuator lock | Rotary knob with detent, can be locked using accessories | |
| Pressure regulation range [bar] | 0.5 ... 7 0.5 ... 10 | |
| Pressure indication | Via pressure sensor with status indication for displaying the output pressure and with electrical output Via pressure gauge for indicating 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; perm. voltage fluctuations -15%/+10% |
| Electrical connection | M12x1 to IEC 61076-2-101 |
| Degree of protection for solenoid coil | IP65 |
| Duty cycle [%] | 100 |

Data sheet – Combination 7


| | | |
|---|--|------------|
| Standard nominal flow rate qnN [l/min] | | |
| Size | MSB4 | MSB6 |
| Pressure regulation range 0.5 ... 7 bar | | |
| Grade of filtration | 40 µm | 1600 |
| Pressure regulation range 0.5 ... 10 bar | | |
| Grade of filtration | 40 µm | 1400 |
| Operating and environmental conditions | | |
| Condensate drain | Manual rotary | |
| Size | MSB4 | MSB6 |
| Operating pressure [bar] | 0.8 ... 14 | 0.8 ... 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 | |
| Corrosion resistance class CRC ¹⁾ | 2 | |
| Food-safe ²⁾ | See supplementary information on materials | |

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

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

2) Additional information is available at www.festo.com/sp → Certificates.

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

 **Note**

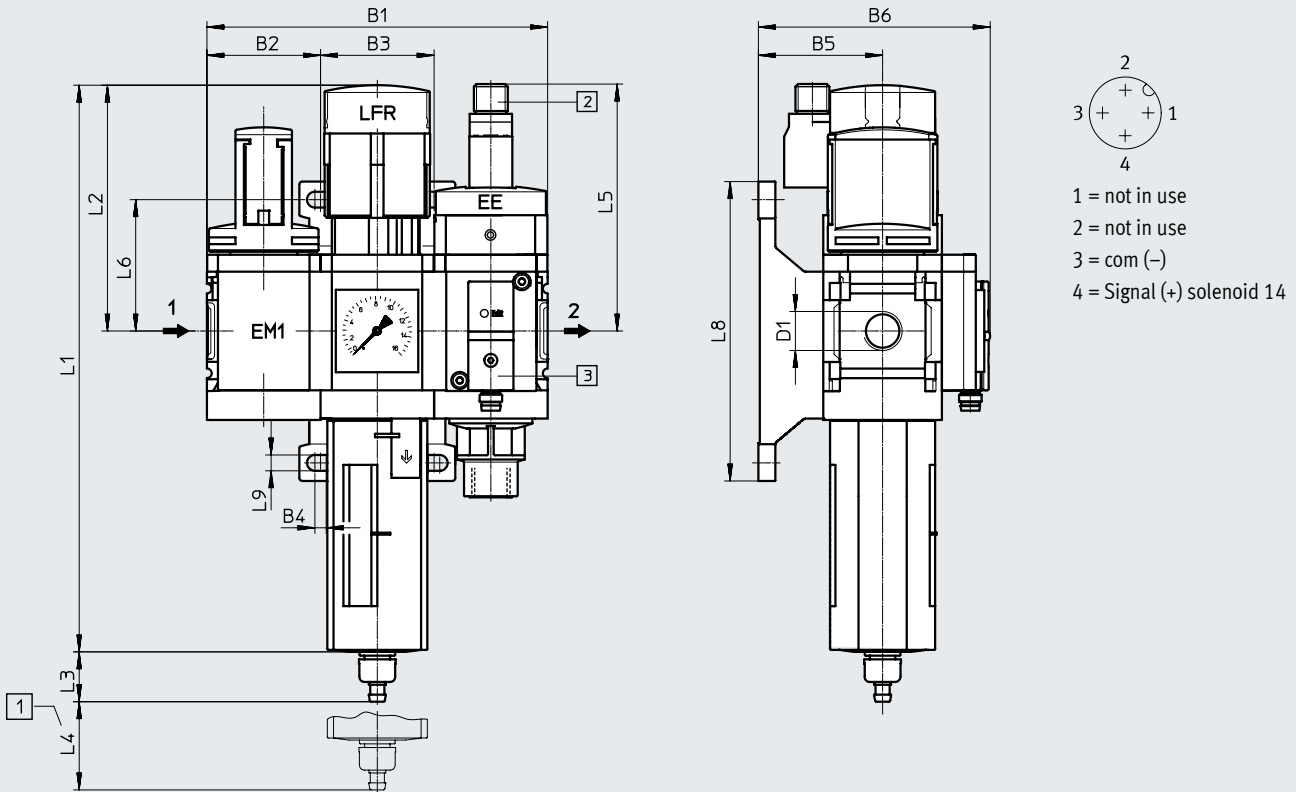
Materials → Data sheet for the individual components

Data sheet – Combination 7

Dimensions

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

Download CAD data → www.festo.com



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

[3] Pressure sensor SDE5-D10-O-...-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.

Data sheet – Combination 7

★ Core product range

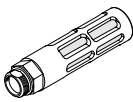
| Ordering data | | | | | |
|--|------------|------------------|---------------------------|-----------|-----------------------|
| Size | Connection | Condensate drain | Degree of filtration [µm] | Part no. | Type |
| Pressure regulation range 0.5 ... 10 bar, pressure gauge with outer scale in bar and inner scale in psi | | | | | |
| MSB4 | G1/4 | Manual rotary | 40 | ★ 8025358 | MSB4-1/4:C3:J1:D14-WP |
| MSB6 | G1/2 | Manual rotary | 40 | ★ 8025359 | MSB6-1/2:C3:J1:D14-WP |


| Ordering data | | | | | |
|--|------------|------------------|---------------------------|----------|-------------------------|
| Size | Connection | Condensate drain | Degree of filtration [µm] | Part no. | Type |
| Pressure regulation range 0.5 ... 7 bar, pressure gauge with outer scale in MPa | | | | | |
| MSB4 | G1/4 | Manual rotary | 40 | 8042666 | MSB4-1/4:C3:J120:D14-WP |
| MSB6 | G1/2 | Manual rotary | 40 | 8042670 | MSB6-1/2:C3:J120:D14-WP |


Festo core product range

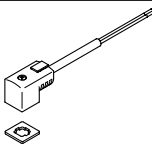
- ★ Generally ready for shipping ex works in 24 hours
- ☆ Generally ready for shipping ex works in 5 days


Accessories

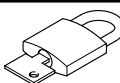
| Ordering data – Silencers U | | | | Data sheets → Internet: u |
|---|----------------|----------------------|----------|---------------------------|
| | Description | Pneumatic connection | Part no. | Type |
|  | For MS4-EM1/EE | G1/4 | 6842 | U-1/4-B |
| | For MS6-EM1/EE | G1/2 | 6844 | U-1/2-B |

| Ordering data – Angled socket PEV | | | | | | Data sheets → 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 ≤ 180 V DC | 4-pin | Yellow LED | 164275 | PEV-1/4-WD-LED-230 |

| Ordering data – Plug socket MSSD | | | | | | Data sheets → 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 | ≤ 250 V AC/DC | 3-pin | Clamping screws | ★ 151687 | MSSD-EB |
| | | | 4-pin | Insulation displacement technology | 192745 | MSSD-EB-S-M14 |

| Ordering data – Plug socket with cable KMEB | | | | | | | Data sheets → 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 |
| | | | 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 |

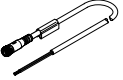

| Ordering data – Illuminating seal MEB-LD | | | | | Data sheets → Internet: meb |
|---|---|-------------------------|----------|----------------|-----------------------------|
| | Description | Operating voltage range | Part no. | Type | |
|  | For plug socket with cable KMEB and plug socket MSSD-EB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

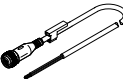
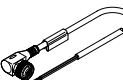
| Ordering data – Padlock LRVS-D | | | | |
|---|------------------------------------|------------|----------|--------|
| | Description | Weight [g] | Part no. | Type |
|  | For filter and pressure regulators | 120 | 193786 | LRVS-D |

Festo core product range

- ★ Generally ready for shipping ex works in 24 hours
- ☆ Generally ready for shipping ex works in 5 days

Accessories

| Ordering data – Connecting cable NEBU-M8 | | | | | Data sheets → Internet: nebu |
|--|-----------------------|-----------------|------------------|----------|------------------------------|
| | Electrical connection | Number of wires | 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 | | | | | Data sheets → Internet: nebu |
|--|------------------------|-----------------|------------------|----------|------------------------------|
| | Electrical connection | Number of wires | 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 |

Festo core product range



Generally ready for shipping ex works in 24 hours

Generally ready for shipping ex works in 5 days