

Pressure regulators MS-LR/LRB/LRP/LRPB/LRE, MS series

FESTO



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Solves the majority of your automation tasks

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

Worldwide: Quickest delivery – wherever, whenever
Simply good: Expected high Festo quality
Fast: Easy and fast to select

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.

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

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. With 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 combination when replacing individual modules.

Many of the components are also UL and ATEX certified.

Air quality

This program supports configuring an appropriate service unit. Please insert the required air cleanliness either by your application or an ISO code or by direct selection of air filters.

Selection criteria: Application

Filter combination is proposed based upon your selected application

- standard pneumatics operation of valves and cylinders, e.g. in automotive industry, secondary packaging
- mining and building industry applications without special air cleanliness requirements
- application of pressure operated tools and machines pneumatic hammer, air engine, positioning with proportional valve
- electronic, flatpanel and solar industry, textile and paper production application with residual oil content <math>< 0.5 \text{ mg/m}^3</math>
- painting, powder coating, air bearing application with residual oil content <math>< 0.01 \text{ mg/m}^3</math>
- food and beverage industry, optics application with residual oil content <math>< 0.003 \text{ mg/m}^3</math> reduction of oil vapours and aromas

Selection criteria: ISO-class

Filter combination is proposed based upon the air cleanliness class according to ISO 8573-1:2010

particle : 4 * : oil



* Downstream from the compressor the water content is assumed to be ISO class 4, better classes can be achieved by applying an adsorption dryer PDAD or a membrane dryer LDM1

Direct filter selection

Independent selection of filter combination

- 40 µm Filter
- 5 µm Filter
- 1 µm Fine Filter
- 0.01 µm Micro Filter *
- Active Carbon Filter



* To enhance the filter lifetime and in consequence the maintenance interval arrange a 1 µm Fine Filter in front of the 0.01 µm Micro Filter as a preliminary filter.

Integrated sensors

Pressure and flow sensors

Safety functions

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

Saving energy

Service unit combinations MSE6

Intelligent mix of sizes



- Maximum machine availability thanks to controlled processes
- Reliable air preparation and system supply
- 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 the 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 a size that is up to 18% smaller
- Excellent energy efficiency
- Cost-optimised combinations – save up to 30%!

Size differences

| Size | | MS4 | MS6 | MS9 | MS12 |
|---|---------|------------------|------------------------|--------------------------------|------------------------|
| Grid dimension | [mm] | 40 | 62 | 90 | 124 |
| Connection sizes | | 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} ¹⁾ | [l/min] | 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 points on the right must be adhered to under all circumstances.

- Regulators MS-LFR/LR/LRP 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 | | | | | | | | |
| 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 | | | | | | | | |
| 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

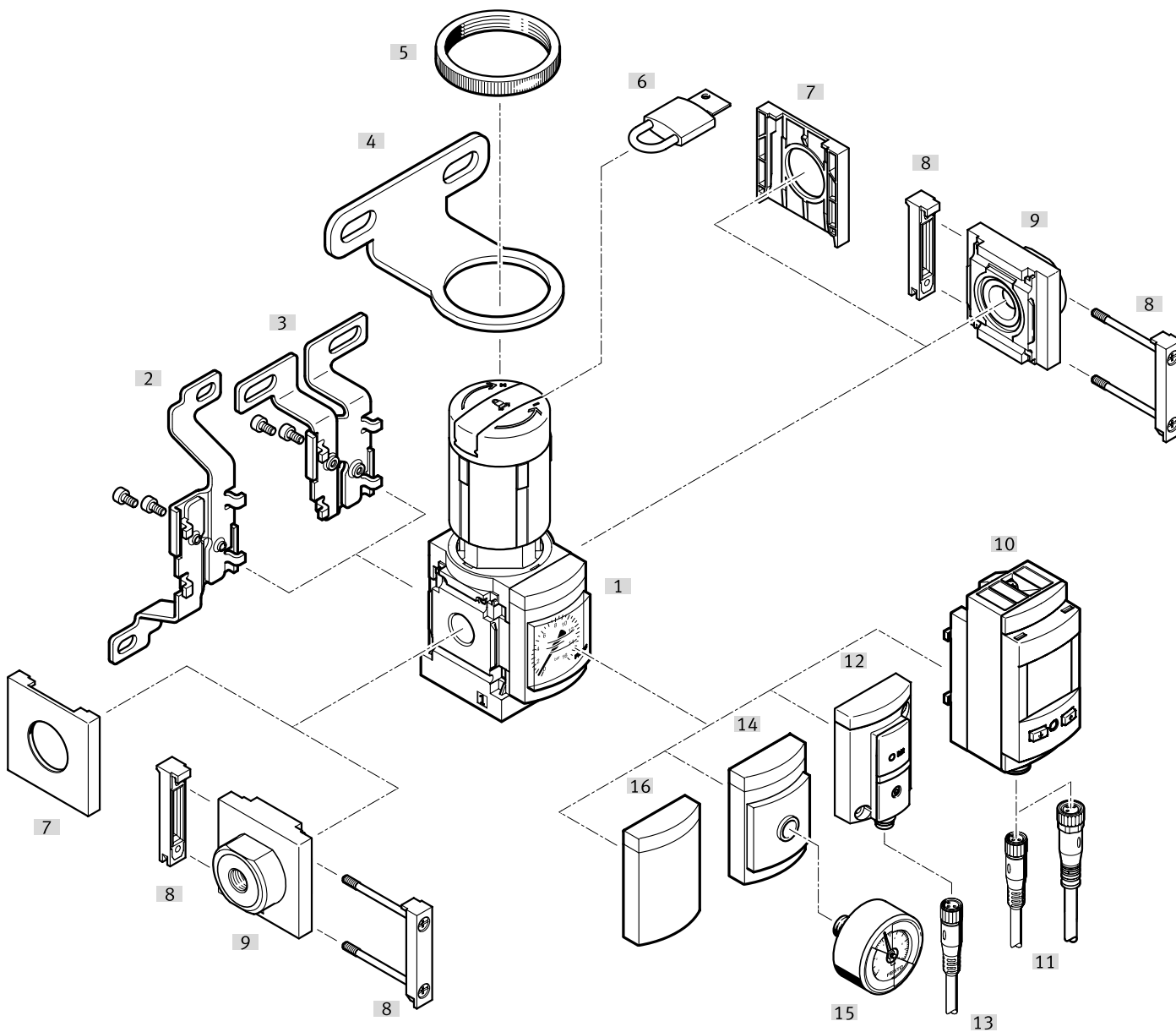
| Product range for service unit components of the MS series | | | | | | | | |
|---|---|------|----------------------|---------------|---------------|--|---------------------------|---------------------------|
| Type | Description | Size | Pneumatic connection | | | Connecting plate with thread | | |
| | | | 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 | | | | | | | | |
| | | | | | | 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 | | | | | | | | |
| | | | | | | 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 | | | | | | | | |
| | | | | | | 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 | | | | | | | | |
| | | | | | | 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 | | | | | | | | |
| | | | | | | 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 | | | | | | | | |
| | | | | | | Datasheets → Internet: ms6-sv; ms9-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

| 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 | | | | | | | | |
| | | | | | | Datasheets → Internet: ms4-frm; ms6-frm; ms9-frm; ms12-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 | | | | | | | | |
| | | | | | | Datasheets → Internet: ms4-frm-frz; ms6-frm-frz | | |
|  | Compressed air distributors with 4 connections and half the grid width | 4 | – | – | – | – | – | – |
| | | 6 | – | – | – | – | – | – |
| Flow sensors SFAM | | | | | | | | |
| | | | | | | Datasheets → Internet: sfam | | |
|  | For absolute flow rate information and cumulative air consumption measurement | 6 | – | – | – | – | 1/2 | 1/2 |
| | | 9 | – | – | – | – | 1, 1 1/2 | 1, 1 1/2 |

Peripherals overview

Pressure regulator MS4/MS6-LR



Note

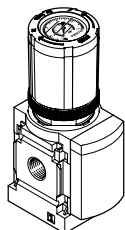
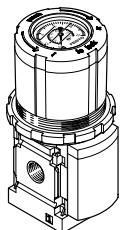
Additional accessories:

- Module connectors for combination with size MS4/MS6 or size MS9
→ Internet: amv, rmv, armv
- Adapters for mounting on profiles
→ Internet: ipm-80, ipm-40-80, ipm-80-80

Pressure regulator with rotary knob pressure gauge

MS4-LR-...-DM2

MS4-LR-...-DM1/MS6-LR-...-DM2



Peripherals overview

| Mounting attachments and accessories ¹⁾ | | Individual device | | Combination | | → Page/Internet |
|--|--|--------------------------|-----------------------|--------------------------|-----------------------|---------------------|
| | | Without connecting plate | With connecting plate | Without connecting plate | With connecting plate | |
| [1] | Pressure regulator MS4/MS6-LR | ■ | ■ | ■ | ■ | 10 |
| [2] | Mounting bracket MS4/6-WB | ■ | ■ | – | – | ms4-wb, ms6-wb |
| [3] | Mounting bracket MS4-WBM | ■ | ■ | – | – | ms4-wbm |
| [4] | Mounting bracket MS4/6-WR | ■ | ■ | – | – | ms4-wr, ms6-wr |
| [5] | Knurled nut (included in the scope of delivery) MS-LR | ■ | ■ | – | – | – |
| [6] | Padlock LRVS-D | ■ | ■ | ■ | ■ | 102 |
| [7] | Cover cap MS4/6-END | ■ | – | ■ | – | ms4-end, ms6-end |
| [8] | Module connector MS4/6-MV | – | ■ | ■ | ■ | ms4-mv, ms6-mv |
| [9] | Connecting plate SET MS4/6-AG... | – | ■ | – | ■ | ms4-ag, ms6-ag |
| | Connecting plate SET MS4/6-AQ... | – | ■ | – | ■ | ms4-aq, ms6-aq |
| [10] | Pressure sensor with LCD display AD11/AD12 | ■ | ■ | ■ | ■ | 26 |
| [11] | Connecting cable NEBU-M8...-LE4/NEBU-M12...-LE4 | ■ | ■ | ■ | ■ | 102 |
| [12] | Pressure sensor without display AD7 ... AD10 | ■ | ■ | ■ | ■ | 26 |
| [13] | Connecting cable NEBU-M8...-LE3 | ■ | ■ | ■ | ■ | 102 |
| [14] | Adapter for EN pressure gauge 1/8, 1/4 A8/A4 | ■ | ■ | ■ | ■ | 26 |
| [15] | Pressure gauge MA | ■ | ■ | ■ | ■ | 102 |
| [16] | Cover plate VS | ■ | ■ | ■ | ■ | 26 |
| – | Mounting bracket MS4/6-WP/WPB/WPE/WPM | – | ■ | ■ | ■ | ms4-wp, ms6-wp |

1) Connecting plates and certain mounting brackets can also be ordered via the modular product system → page 26

Type codes

| 001 Series | |
|---------------------------------|---|
| MS | MS series |
| 002 Size | |
| 4 | Grid dimension 40 mm |
| 003 Function | |
| LR | Pressure regulator |
| 004 Pneumatic connection | |
| 1/8 | Female thread G1/8 |
| 1/4 | Female thread G1/4 |
| AGA | Sub-base G1/8 |
| AGB | Sub-base G1/4 |
| AGC | Sub-base G3/8 |
| AQK | Sub-base 1/8 NPT |
| AQN | Sub-base 1/4 NPT |
| AQP | Sub-base 3/8 NPT |
| 005 Pressure regulation range | |
| D5 | 0.3 ... 4 bar |
| D6 | 0.3 ... 7 bar |
| D7 | 0.5 ... 12 bar |
| 006 Pressure gauge alternatives | |
| | None |
| A4 | Adapter for EN pressure gauge 1/4, without pressure gauge |
| A8 | Adapter for EN pressure gauge 1/8, without pressure gauge |
| AD7 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O |
| AD8 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/C |
| AD9 | Pressure sensor with switching display, M8 plug, window comparator, PNP, N/O |
| AD10 | Pressure sensor with operational status indicator, M8 plug, window comparator, PNP, N/C |
| AD11 | Pressure sensor with LCD display, M12 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA |
| AD12 | Pressure sensor with LCD display, M8 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA |
| RG | Integrated pressure gauge, red/green scale |
| VS | Cover plate |

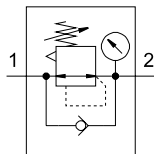
| 007 Alternative pressure gauge scale | |
|--------------------------------------|---|
| | MS pressure gauge |
| PSI | psi |
| MPA | MPa |
| 008 Secondary exhausting | |
| | With secondary exhausting |
| OS | Without secondary exhaust |
| 009 Rotary knob alternative | |
| | None |
| LD | Long rotary knob |
| DM1 | Rotary knob pressure gauge, small |
| DM2 | Rotary knob pressure gauge, large |
| 010 Alternative mounting position | |
| | None |
| KD | Rotary knob underneath |
| 011 Lockability | |
| | None |
| AS | Can be locked using accessories |
| E11 | With integrated lock |
| 012 Type of mounting | |
| | Without mounting bracket |
| WR | Mounting bracket with knurled nut on regulator knob |
| WP | Mounting bracket basic design |
| WPM | Mounting bracket for hooking in service unit components |
| WB | Mounting centrally at rear (wall mounting top and bottom), connecting plates not required |
| WBM | Mounting centrally at rear (wall mounting top), connecting plates not required |
| 013 EU certification | |
| | None |
| EX4 | II 2GD |
| 014 UL certification | |
| | None |
| UL1 | cULus ordinary location for Canada and USA |
| 015 Flow direction | |
| | Flow direction from left to right |
| Z | Flow direction from right to left |





Type codes

| | | |
|-------------|---|--|
| 001 | Series | |
| MS | MS series | |
| 002 | Size | |
| 6 | Grid dimension 62 mm | |
| 003 | Function | |
| LR | Pressure regulator | |
| 004 | Pneumatic connection | |
| 1/4 | Female thread G1/4 | |
| 3/8 | Female thread G3/8 | |
| 1/2 | Female thread G1/2 | |
| AGB | Sub-base G1/4 | |
| AGC | Sub-base G3/8 | |
| AGD | Sub-base G1/2 | |
| AGE | Sub-base G3/4 | |
| AQN | Sub-base 1/4 NPT | |
| AQP | Sub-base 3/8 NPT | |
| AQR | Sub-base 1/2 NPT | |
| AQS | Sub-base 3/4 NPT | |
| 005 | Pressure regulation range | |
| D5 | 0.3 ... 4 bar | |
| D6 | 0.3 ... 7 bar | |
| D7 | 0.5 ... 12 bar | |
| D8 | 0.5 ... 16 bar | |
| 006 | Pressure gauge alternatives | |
| | None | |
| A4 | Adapter for EN pressure gauge 1/4, without pressure gauge | |
| A8 | Adapter for EN pressure gauge 1/8, without pressure gauge | |
| AD7 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O | |
| AD8 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/C | |
| AD9 | Pressure sensor with switching display, M8 plug, window comparator, PNP, N/O | |
| AD10 | Pressure sensor with operational status indicator, M8 plug, window comparator, PNP, N/C | |
| AD11 | Pressure sensor with LCD display, M12 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA | |
| AD12 | Pressure sensor with LCD display, M8 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA | |
| RG | Integrated pressure gauge, red/green scale | |
| VS | Cover plate | |
| 007 | Alternative pressure gauge scale | |
| | MS pressure gauge | |
| PSI | psi | |
| MPA | MPa | |
| 008 | Secondary exhausting | |
| | With secondary exhausting | |
| OS | Without secondary exhaust | |
| 009 | Rotary knob alternative | |
| | None | |
| LD | Long rotary knob | |
| DM2 | Rotary knob pressure gauge, large | |
| 010 | Alternative mounting position | |
| | None | |
| KD | Rotary knob underneath | |
| 011 | Lockability | |
| | None | |
| AS | Can be locked using accessories | |
| E11 | With integrated lock | |
| 012 | Type of mounting | |
| | Without mounting bracket | |
| WR | Mounting bracket with knurled nut on regulator knob | |
| WP | Mounting bracket basic design | |
| WPM | Mounting bracket for hooking in service unit components | |
| WB | Mounting centrally at rear (wall mounting top and bottom), connecting plates not required | |
| 013 | EU certification | |
| | None | |
| EX4 | II 2GD | |
| 014 | UL certification | |
| | None | |
| UL1 | cULus ordinary location for Canada and USA | |
| 015 | Flow direction | |
| | Flow direction from left to right | |
| Z | Flow direction from right to left | |
| 016 | Version | |

Datasheet

With pressure gauge



-  - Flow rate
1000 ... 7500 l/min
-  - Temperature range
-10 ... +60°C
-  - Operating pressure
0.8 ... 20 bar
-  - www.festo.com



The pressure regulator maintains a constant working pressure (secondary side), independently of the pressure fluctuations in the system (primary side) and the air consumption.

- Good regulation characteristics with minimal hysteresis and input pressure compensation
- High flow rate performance with minimal pressure drop
- Available with and without secondary exhausting
- Actuator lock to protect the set values from being adjusted
- Four pressure regulation ranges: 0.3 ... 4 bar, 0.3 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Two pressure gauge connections for different installation options
- Return flow option for exhausting from output 2 to output 1 already integrated
- Optional pressure sensor
- Optional rotary knob pressure gauge
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

| General technical data | | | | |
|--------------------------------------|---|--|--|--|
| Size | MS4 | | MS6 | |
| Pneumatic connection 1, 2 | | | | |
| Female thread | G1/8 or G1/4 | | G1/4, G3/8 or G1/2 | |
| Connecting plate | [AG...] | G1/8, G1/4 or G3/8 | G1/4, G3/8, G1/2 or G3/4 | |
| | [AQ...] | 1/8 NPT, 1/4 NPT or 3/8 NPT | 1/4 NPT, 3/8 NPT, 1/2 NPT or 3/4 NPT | |
| Design | Directly actuated diaphragm regulator | | | |
| Regulator function | Output pressure constant, with input pressure compensation, with return flow, with/without secondary exhausting | | | |
| Type of mounting | Via accessories | | | |
| | In-line installation | | | |
| | Front panel mounting | | | |
| Mounting position | Any | | | |
| Actuator lock | Rotary knob with latch | | | |
| | Rotary knob with latch, can be locked using accessories | | | |
| | Rotary knob with integrated lock | | | |
| Pressure regulation range/ actuation | [D5] [bar] | 0.3 ... 4, manually actuated ¹⁾ | | |
| | [D6] [bar] | 0.3 ... 7, manually actuated ¹⁾ | | |
| | [D7] [bar] | 0.5 ... 12, manually actuated (0.5 ... 10 with pressure sensor or with UL certification) ¹⁾ | | |
| | [D8] [bar] | | 0.5 ... 16, manually actuated (0.5 ... 10 with UL certification) | |
| Max. pressure hysteresis | [bar] | 0.25 (0.4 with rotary knob pressure gauge) | | |
| Pressure indication | Via pressure sensor for indicating the output pressure and electrical output via LCD display | | | |
| | Via pressure sensor for indicating the output pressure and electrical output | | | |
| | Via pressure gauge for indicating the output pressure | | | |
| | Via pressure gauge with red/green scale for indicating the output pressure | | | |
| | Via pressure gauge in the rotary knob for displaying the output pressure | | | |
| | | Prepared for G1/8 | - | |
| | | Prepared for G1/4 | - | |

1) MS4: the pressure regulation range for pressure regulators with rotary knob pressure gauge starts at 0.8 bar.

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

Datasheet

| Standard nominal flow rate $q_{nN}^{1)}$ [l/min] | | | | | | |
|--|------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Size | MS4 | | | MS6 | | |
| Pneumatic connection | G1/8 | G1/4 | G1/4 | G3/8 | G1/2 | |
| Pressure regulation range | [D5] | 1200 ²⁾ | 2100 ²⁾ | 2400 ²⁾ | 5500 ²⁾ | 7500 ²⁾ |
| | [D6] | 1150 | 1800 | 3000 | 5800 | 6500 |
| | [D7] | 1000 | 1700 ³⁾ | 2700 | 4500 | 5500 |
| | [D8] | – | – | 2200 | 4000 | 4500 |

- 1) Measured at $p_1 = 10$ bar and $p_2 = 6$ bar, $\Delta p = 1$ bar
2) Measured at $p_1 = 10$ bar and $p_2 = 3$ bar, $\Delta p = 1$ bar
3) With a rotary knob pressure gauge, $q_{nN} = 800$ l/min, $q_{n\max} = 2200$ l/min

| Operating and environmental conditions | | | |
|--|---|--|---------------------------------------|
| Size | MS4 | | MS6 |
| Operating pressure [bar] | 0.8 ... 14 (0.8 ... 10) ¹⁾ | | 0.8 ... 20 (0.8 ... 10) ¹⁾ |
| 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 lubrication will always be required) | | |
| Ambient temperature [°C] | –10 ... +60 (0 ... +50) ²⁾ | | |
| Temperature of medium [°C] | –10 ... +60 (0 ... +50) ²⁾ | | |
| Storage temperature [°C] | –10 ... +60 | | |
| Corrosion resistance class CRC ³⁾ | 2 | | |
| Food-safe ⁴⁾ | See supplementary material information | | |
| UL certification ⁴⁾ | c UL us - Recognized (OL) | | |

- 1) Value in brackets applies to MS4/MS6-LR with UL certification.
2) Value in brackets applies to MS4/MS6-LR with pressure sensor.
3) More information www.festo.com/x/topic/crc
4) More information: www.festo.com/catalogue/ms-lr → Support/Downloads.

| ATEX | |
|--|---|
| EU certification | [EX4] |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T6 Gb X |
| ATEX category for dust | II 2D |
| Type of (ignition) protection for dust | Ex h IIIC T60°C Db X |
| Explosion ambient temperature | –10°C ≤ Ta ≤ +60°C |
| Explosion protection certification outside the EU | EPL Db (GB) EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) ¹⁾ | To UK regulations for explosions |

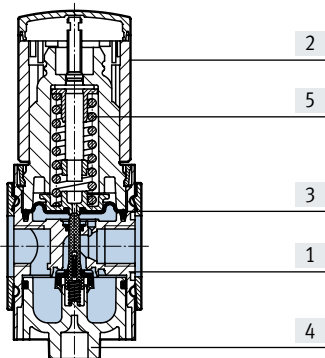
- 1) More information: www.festo.com/catalogue/ms-lr → Support/Downloads.

| Weight [g] | | | |
|--|-------|----|------|
| Size | MS4 | | MS6 |
| Pressure regulator | 225 | | 730 |
| Pressure regulator with rotary knob with integrated lock | 350 | | 1000 |
| Connecting plates [AG...]/[AQ...] | 128 | | 300 |
| Mounting bracket | [WBM] | 48 | – |
| | [WB] | 46 | 121 |
| | [WR] | 49 | 90 |
| | [WP] | 39 | 76 |
| | [WPM] | 45 | 144 |

Datasheet

Materials

Sectional view



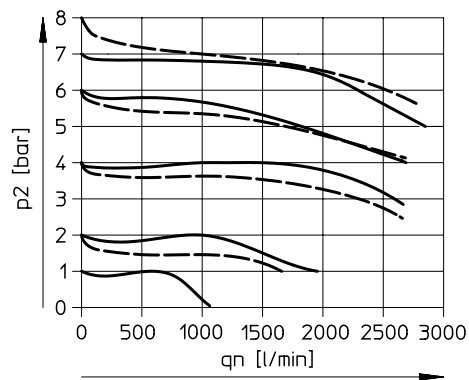
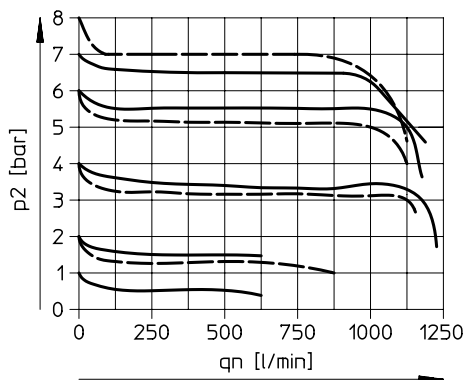
| Pressure regulator | | |
|------------------------|----------------------------------|--------------------|
| [1] | Housing | Die-cast aluminium |
| [2] | Rotary knob | PA, POM |
| | Rotary knob with integrated lock | Aluminium |
| [3] | Diaphragms | NBR |
| [4] | Bottom cover | PET |
| [5] | Springs | Steel |
| - | Seals | NBR |
| Note on materials | | RoHS-compliant |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L |

Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 10$ bar)

MS4-LR-1/8

MS4-LR-1/4

Input pressure $p_1 = 10$ bar



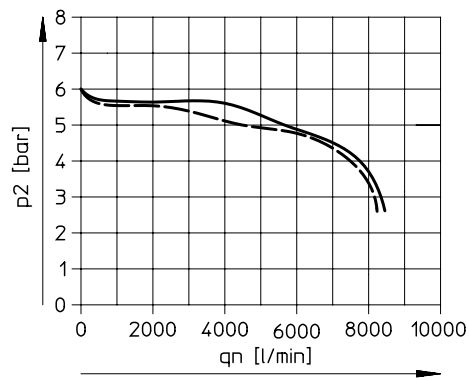
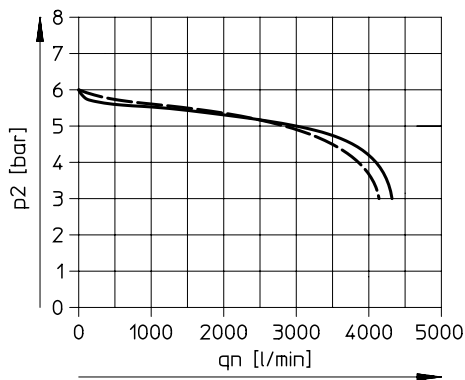
— D6: 0.3 ... 7 bar
 - - - D7: 0.5 ... 12 bar¹⁾

1) There is a higher initial pressure drop in the characteristic curve for variant DM1/DM2.

MS6-LR-1/4

MS6-LR-3/8

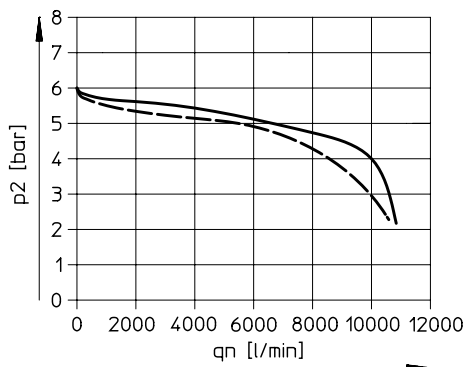
Input pressure $p_1 = 10$ bar



— D6: 0.3 ... 7 bar
 - - - D7: 0.5 ... 12 bar

MS6-LR-1/2

Input pressure $p_1 = 10$ bar



— D6: 0.3 ... 7 bar
 - - - D7: 0.5 ... 12 bar

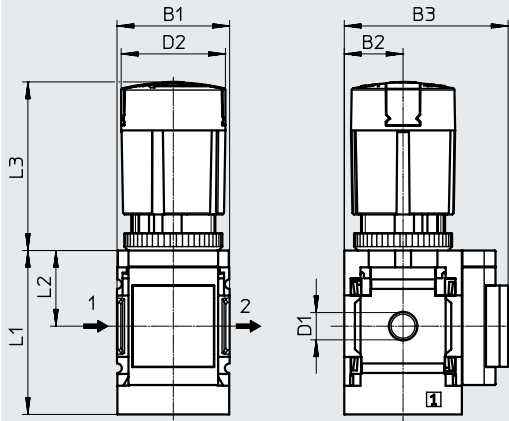
Datasheet

Dimensions – Basic version

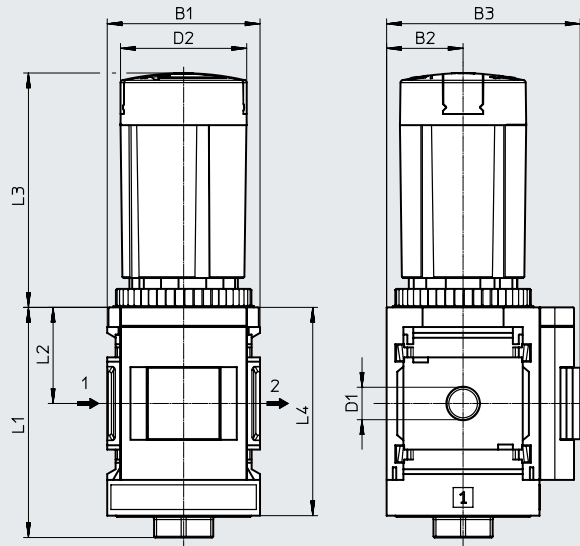
Download CAD data → www.festo.com

- [] Integrated MS pressure gauge with standard scale
- [RG] Integrated MS pressure gauge with red/green scale
- [AS] Rotary knob with latch, can be locked using accessories

MS4



MS6



→ Flow direction

| Type | B1 | B2 | B3 | | D1 | D2 ∅ | L1 | L2 | L3 | L4 |
|------------|----|----|----------------|-----------------|------|---------|----|----|------|----|
| | | | Standard scale | Red/green scale | | | | | | |
| MS4-LR-1/8 | 40 | 21 | 57 | 58.5 | G1/8 | 37.2 | 59 | 27 | 60.2 | - |
| MS4-LR-1/4 | | | G1/4 | | | | | | | |
| MS6-LR-1/4 | 62 | 31 | 77 | 78.5 | G1/4 | 51.2 | 94 | 39 | 95.1 | 85 |
| MS6-LR-3/8 | | | | | G3/8 | | | | | |
| MS6-LR-1/2 | | | | | G1/2 | | | | | |

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

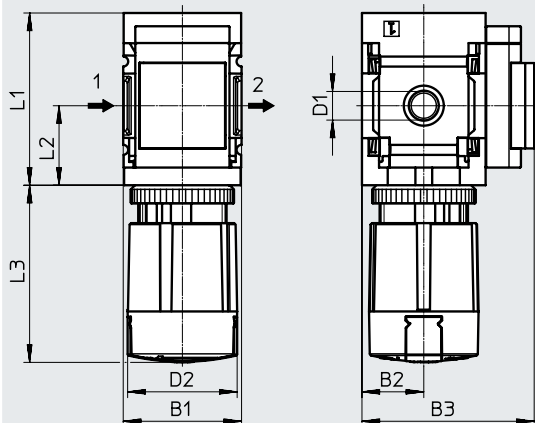
Datasheet

Dimensions – Alternative mounting position

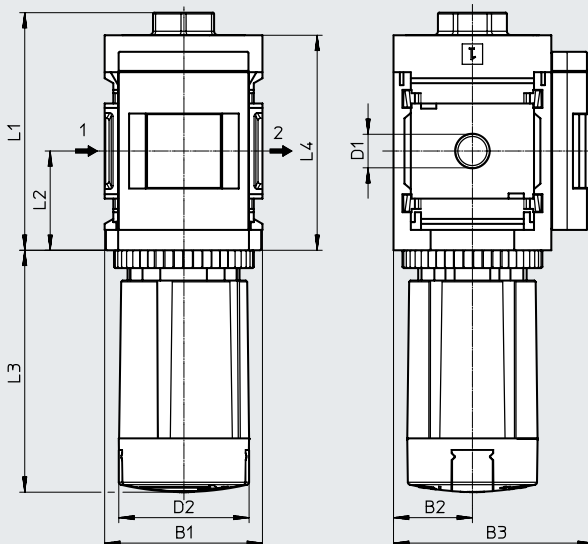
Download CAD data → www.festo.com

[KD] Rotary knob underneath

MS4



MS6



→ Flow direction

| Type | B1 | B2 | B3 | | D1 | D2 ∅ | L1 | L2 | L3 | L4 |
|-------------------|----|----|----------------|-----------------|------|---------|----|----|------|----|
| | | | Standard scale | Red/green scale | | | | | | |
| MS4-LR-1/8-...-KD | 40 | 21 | 57 | 58.5 | G1/8 | 37.2 | 59 | 27 | 60.2 | - |
| MS4-LR-1/4-...-KD | | | | | | | | | | |
| MS6-LR-1/4-...-KD | 62 | 31 | 77 | 78.5 | G1/4 | 51.2 | 94 | 39 | 95.1 | 85 |
| MS6-LR-3/8-...-KD | | | | | G3/8 | | | | | |
| MS6-LR-1/2-...-KD | | | | | G1/2 | | | | | |

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

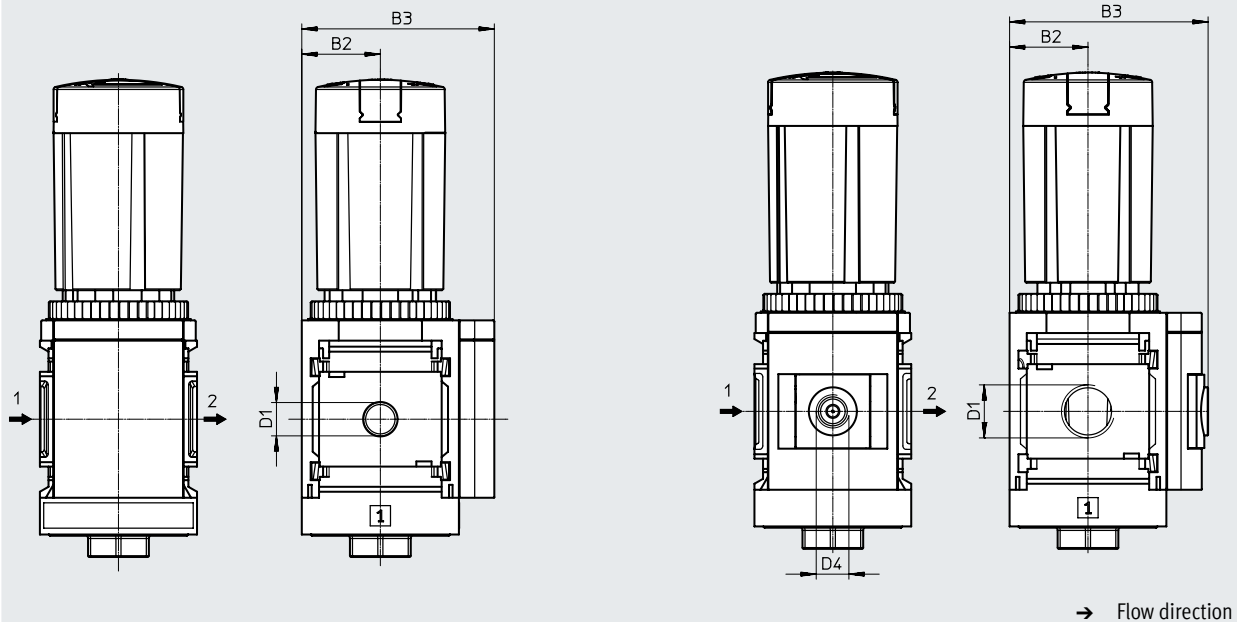
Datasheet

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

[VS] Cover plate

- [A8] Adapter for EN pressure gauge 1/8, without pressure gauge
- [A4] Adapter for EN pressure gauge 1/4, without pressure gauge



| Type | B2 | B3 | D1 | D4 |
|-------------------|----|------|------|------|
| MS4-LR-1/8-...-VS | 21 | 54 | G1/8 | - |
| MS4-LR-1/4-...-VS | | | G1/4 | |
| MS4-LR-1/8-...-A8 | 21 | 58.5 | G1/8 | G1/8 |
| MS4-LR-1/4-...-A8 | | | G1/4 | |
| MS4-LR-1/8-...-A4 | 21 | 58.5 | G1/8 | G1/4 |
| MS4-LR-1/4-...-A4 | | | G1/4 | |
| MS6-LR-1/4-...-VS | 31 | 76 | G1/4 | - |
| MS6-LR-3/8-...-VS | | | G3/8 | |
| MS6-LR-1/2-...-VS | | | G1/2 | |
| MS6-LR-1/4-...-A4 | 31 | 78.5 | G1/4 | G1/4 |
| MS6-LR-3/8-...-A4 | | | G3/8 | |
| MS6-LR-1/2-...-A4 | | | G1/2 | |

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

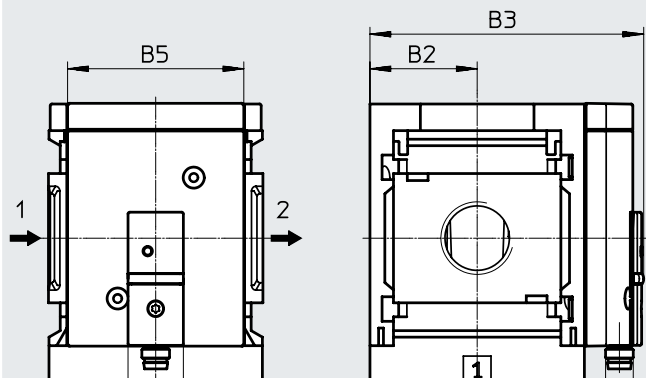
Datasheet

Dimensions – Pressure gauge alternatives

[AD7 ... 10] Pressure sensor without LCD display (switching status indicator only)

Download CAD data → www.festo.com

Datasheets → Internet: sde5



Variant AD7:
SDE5-D10-O-...-P-M8 with 3-pin plug
M8x1, threshold value comparator,
1 switching output PNP, N/O contact

Variant AD9:
SDE5-D10-O3-...-P-M8 with 3-pin
plug M8x1, window comparator,
1 switching output PNP, N/O contact

Variant AD8:
SDE5-D10-C-...-P-M8 with 3-pin plug
M8x1, threshold value comparator,
1 switching output PNP, N/C contact

Variant AD10:
SDE5-D10-C3-...-P-M8 with 3-pin
plug M8x1, window comparator,
1 switching output PNP, N/C contact

→ Flow direction

| Type | B2 | B3 | B5 | B6 | D6 |
|-----------------------------|----|------|----|----|------|
| MS4-LR-...-AD7/AD8/AD9/AD10 | 21 | 59.1 | 32 | 16 | M8x1 |
| MS6-LR-...-AD7/AD8/AD9/AD10 | 31 | 79.1 | 51 | 16 | M8x1 |

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

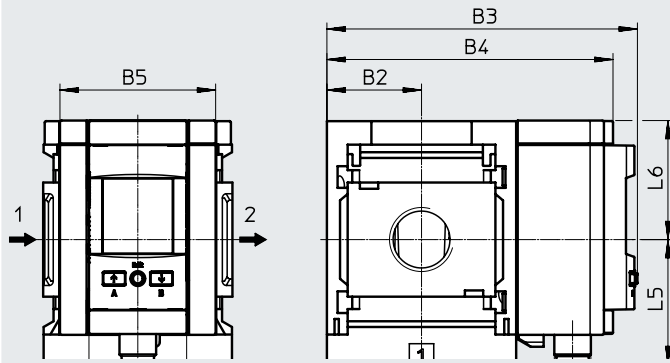
Datasheet

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

[AD11/AD12] Pressure sensor with LCD display

Datasheets → Internet: spau



Variant AD11:
 SPAU-P10R-MS-L-PNLK-M12 with
 plug M12, 4-pin, IO-Link®, PNP,
 NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA

Variant AD12:
 SPAU-P10R-MS-L-PNLK-M8 with plug
 M8, 4-pin, IO-Link®, PNP, NPN,
 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA

→ Flow direction

| Type | B2 | B3 | B4 | B5 | B6 | D6 | L5 | L6 |
|----------------|----|-------|------|----|----|-------|------|----|
| MS4-LR...-AD11 | 21 | 81.2 | 73.3 | 32 | 32 | M12x1 | 41.2 | 39 |
| MS4-LR...-AD12 | 21 | 81.2 | 73.3 | 32 | 32 | M8x1 | 37.9 | 39 |
| MS6-LR...-AD11 | 31 | 101.8 | 93.7 | 51 | 32 | M12x1 | 41.2 | 39 |
| MS6-LR...-AD12 | 31 | 101.8 | 93.7 | 51 | 32 | M8x1 | 37.9 | 39 |

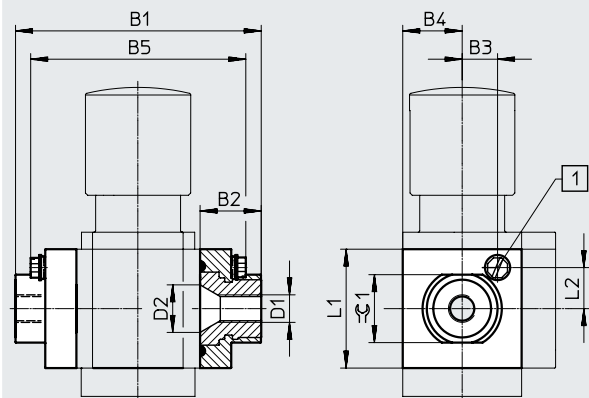
† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet

Dimensions – Pneumatic connection

Download CAD data → www.festo.com

[AG...]/[AQ...] Connecting plate



[1] Earthing screw M4x8 (only with MS4/6-...-EX)

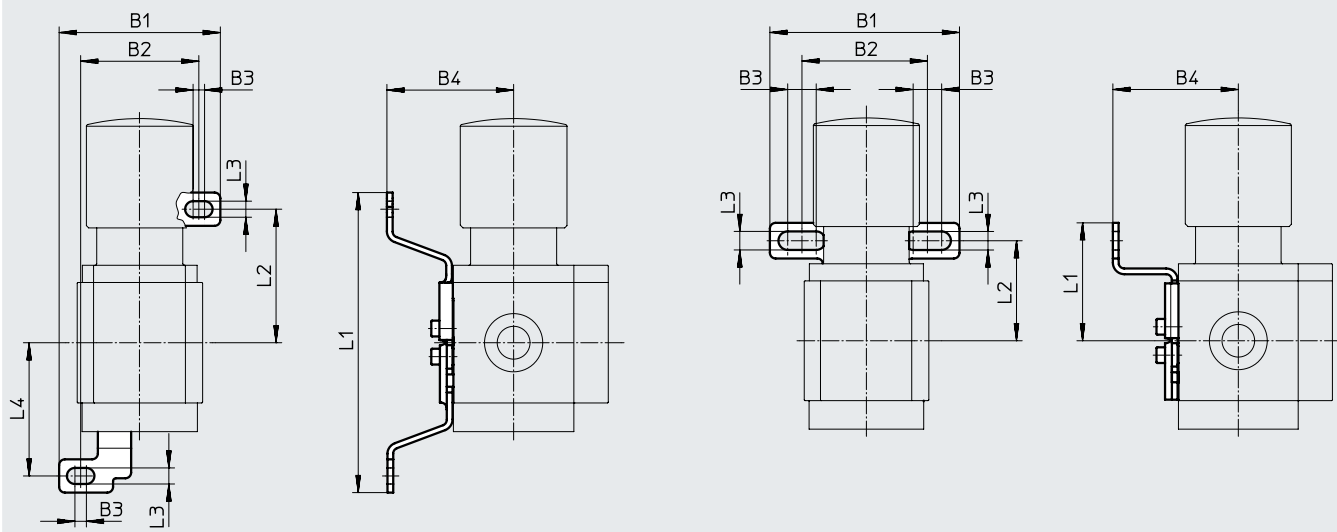
| Type | B1 | B2 | B3 | B4 | B5 | D1 | D2 | L1 | L2 | ±C 1 |
|---------------|------|------|------|----|------|------------|------|----|------|------|
| MS4-LR...-AGA | 83.4 | 21.5 | 12.5 | 21 | 72.5 | G1/8 | 16.8 | 42 | 14.5 | 24 |
| MS4-LR...-AGB | | | | | | G1/4 | | | | 21 |
| MS4-LR...-AGC | | | | | | G3/8 | | | | 24 |
| MS4-LR...-AQK | | | | | | 1/8-27 NPT | | | | 24 |
| MS4-LR...-AQN | | | | | | 1/4-18 NPT | | | | 24 |
| MS4-LR...-AQP | | | | | | 3/8-18 NPT | | | | 24 |
| MS6-LR...-AGB | 115 | 26.5 | 20.5 | 31 | 98.3 | G1/4 | 24 | 62 | 15.5 | 34 |
| MS6-LR...-AGC | | | | | | G3/8 | | | | 34 |
| MS6-LR...-AGD | | | | | | G1/2 | | | | 26 |
| MS6-LR...-AGE | | | | | | G3/4 | | | | 34 |
| MS6-LR...-AQN | | | | | | 1/4-18 NPT | | | | 34 |
| MS6-LR...-AQP | | | | | | 3/8-18 NPT | | | | 34 |
| MS6-LR...-AQR | | | | | | 1/2-14 NPT | | | | 34 |
| MS6-LR...-AQS | | | | | | 3/4-14 NPT | | | | 34 |

Dimensions – Type of mounting

Download CAD data → www.festo.com

[WB] Mounting bracket

[WBM] Mounting bracket



| Type | B1 | B2 | B3 | B4 | L1 | L2 | L3 | L4 |
|---------------|------|----|-----|------|-------|------|-----|------|
| MS4-LR...-WB | 56 | 41 | 4 | 44.2 | 104.6 | 46.6 | 5.6 | 46.5 |
| MS4-LR...-WBM | 66.5 | 44 | 10 | 44 | 41.3 | 35 | 6.5 | - |
| MS6-LR...-WB | 79.4 | 62 | 4.5 | 53.8 | 157.6 | 71 | 6.6 | 71 |

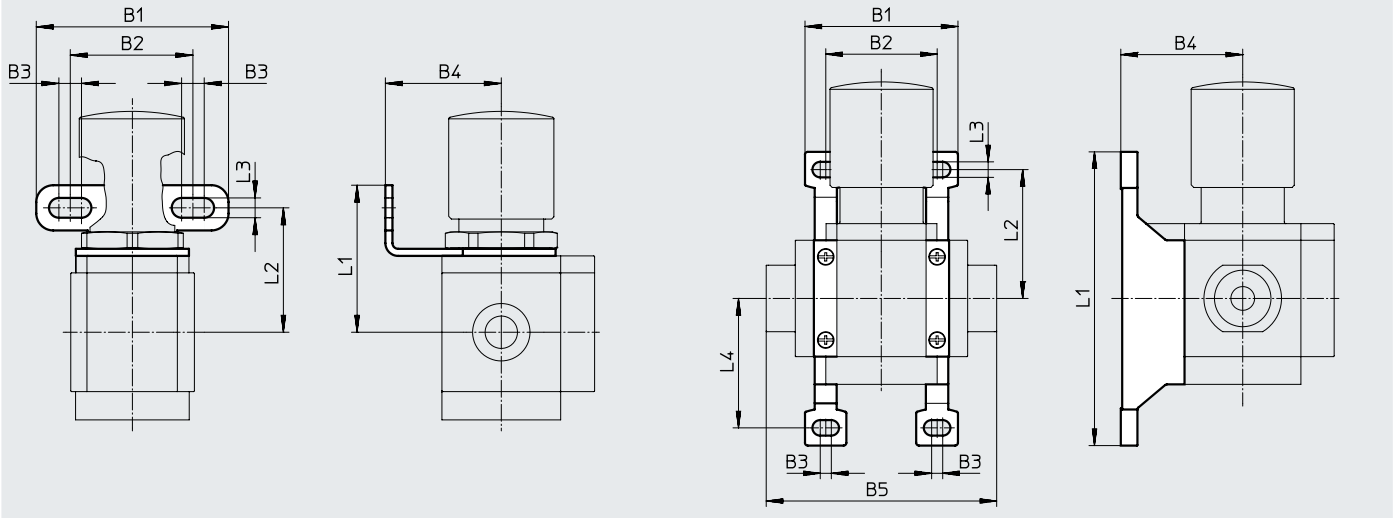
Datasheet

Dimensions – Type of mounting

Download CAD data → www.festo.com

[WR] Mounting bracket

[WP] Mounting bracket



| Type | B1 | B2 | B3 | B4 | B5 | L1 | L2 | L3 | L4 |
|--------------|------|------|-----|----|------|-----|------|-----|------|
| MS4-LR...-WR | 68 | 44 | 8 | 41 | – | 52 | 44 | 7 | – |
| MS4-LR...-WP | 55.2 | 40.2 | 4 | 44 | 83.4 | 106 | 46.5 | 5.6 | 46.7 |
| MS6-LR...-WR | 70 | 42 | 8.2 | 40 | – | 67 | 57 | 7.1 | – |
| MS6-LR...-WP | 79 | 62 | 4.5 | 54 | 115 | 158 | 71 | 6.6 | 71 |

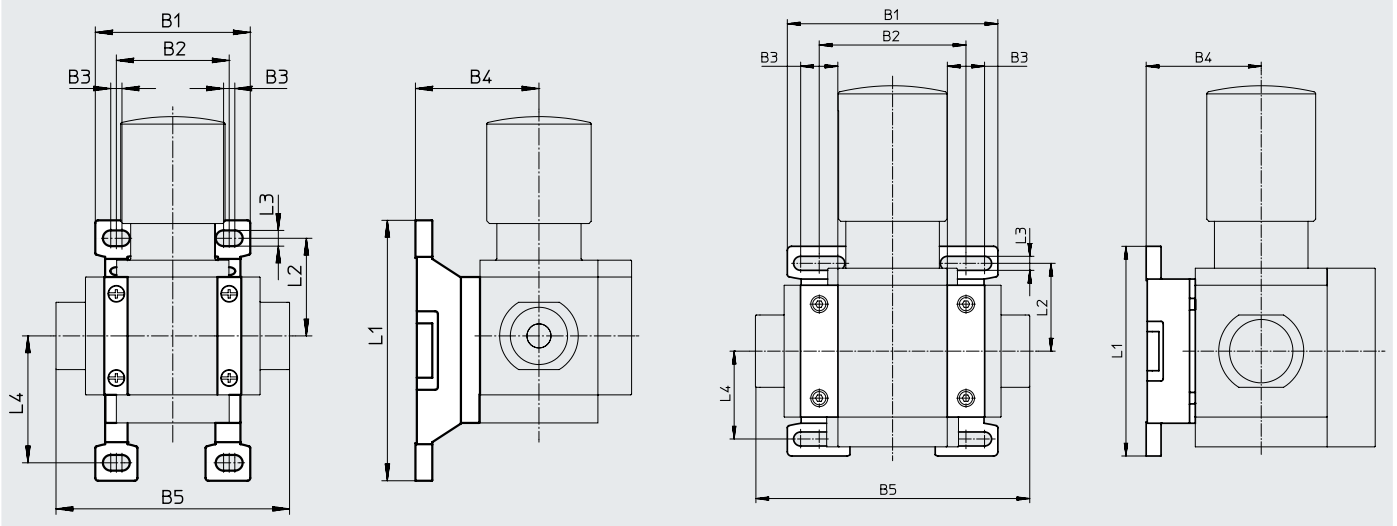
Dimensions – Type of mounting

Download CAD data → www.festo.com

[WPM] Mounting bracket

MS4

MS6



| Type | B1 | B2 | B3 | B4 | B5 | L1 | L2 | L3 | L4 |
|---------------|------|------|------|----|------|------|------|-----|------|
| MS4-LR...-WPM | 55.2 | 40.2 | 4 | 44 | 83.4 | 92.8 | 34.8 | 5.6 | 45.2 |
| MS6-LR...-WPM | 99 | 69 | 17.5 | 54 | 129 | 98.6 | 41.3 | 6.6 | 41.3 |

Datasheet

Dimensions – Rotary knob

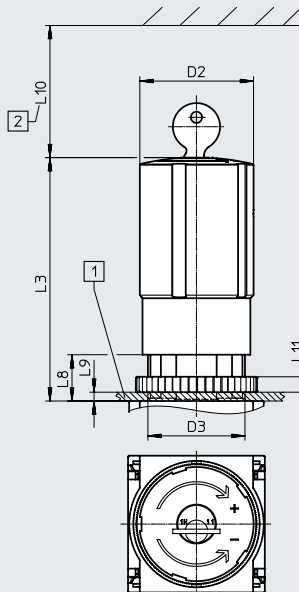
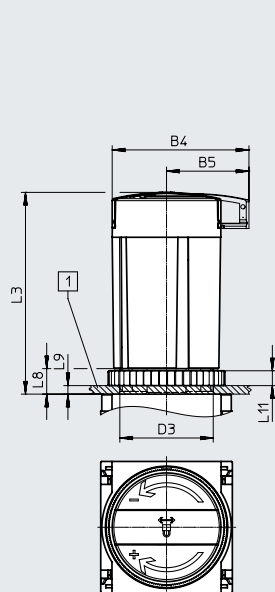
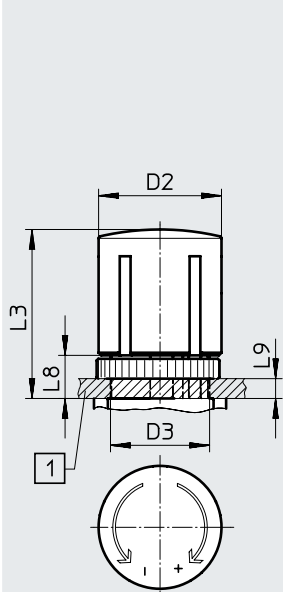
Download CAD data → www.festo.com

For control panel installation

[] Rotary knob with latch

[AS] Rotary knob with latch, can be locked using accessories

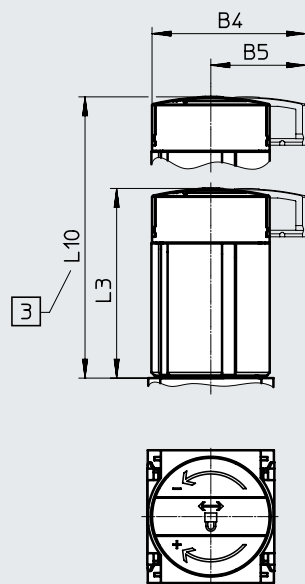
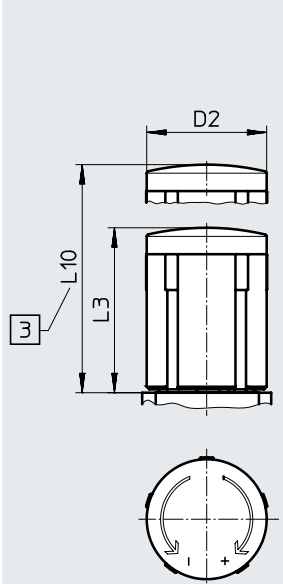
[E11] Rotary knob with integrated lock



- [1] Max. control panel thickness
- [2] Installation dimension

[LD] Rotary knob, long, with latch

[LD-AS] Rotary knob, long, with latch, can be locked using accessories



- [3] For pressure adjustment: fully pull out telescopic rotary knob

| Type | B4 | B5 | D2 | D3 | L3 | L8 | L9 | L10 |
|-----------------|------|------|------|---------|------|----|----|-------|
| MS4-LR... | - | - | 37.2 | M30x1.5 | 51.1 | 13 | 5 | - |
| MS4-LR...-AS | 48.6 | 30 | | | 60.2 | 13 | 5 | |
| MS4-LR...-E11 | - | - | | | 76 | 14 | 6 | 60 |
| MS4-LR...-LD | - | - | | - | 51.1 | - | - | 76.8 |
| MS4-LR...-LD-AS | 48.6 | 30 | | - | 60 | - | - | 85.7 |
| MS6-LR... | - | - | 51.2 | M44x1 | 86 | 21 | 14 | - |
| MS6-LR...-AS | 64.4 | 38.8 | | | 95.1 | 12 | 5 | |
| MS6-LR...-E11 | - | - | | | 110 | 21 | 14 | 60 |
| MS6-LR...-LD | - | - | | - | 86 | - | - | 139 |
| MS6-LR...-LD-AS | 64.4 | 38.8 | | - | 95.5 | - | - | 148.5 |

Datasheet

Dimensions – Rotary knob pressure gauge

Download CAD data → www.festo.com

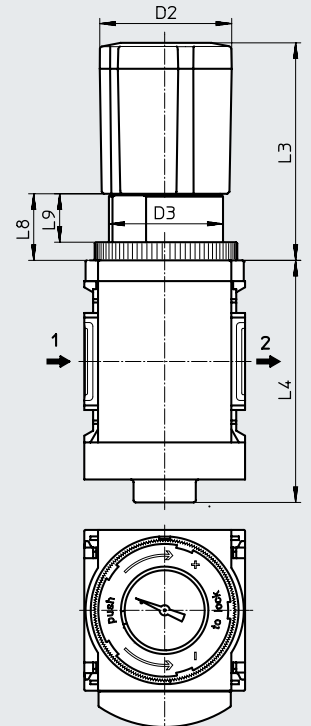
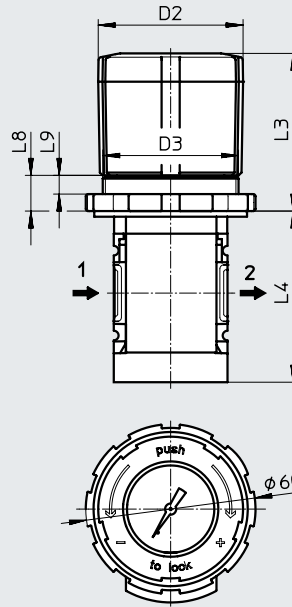
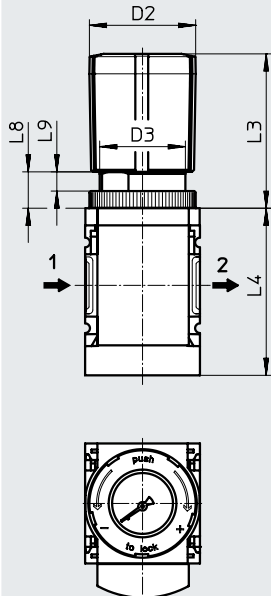
[DM1] Rotary knob pressure gauge, small

[DM2] Rotary knob pressure gauge, large

MS4

MS4

MS6



Note
 Due to the protruding rotary knob, only a distributor block MS4-FRM-FRZ or a branching module MS4-FRM can be mounted as a directly adjacent service unit component.

→ Flow direction

| Type | D2 | D3 | L3 | L4 | L8 | L9 |
|---------------|------|---------|----|----|------|------|
| MS4-LR...-DM1 | 37.2 | M30x1.5 | 54 | 59 | 13 | 6.7 |
| MS4-LR...-DM2 | 51.2 | M48x1.5 | 56 | 59 | 13 | 7 |
| MS6-LR...-DM2 | 51 | M44x1 | 84 | 94 | 25.4 | 18.4 |

Datasheet

★ Core Range

| Ordering data | | | | | | | |
|------------------------|---------------------------|--------------------|----------------------|------------------------|--------------------|------------------|--------------------|
| Pneumatic connection 1 | Pressure regulation range | Flow direction | Part no. | Type | | | |
| MS4-LR... | | | | | | | |
| G1/8 | 0,3 ... 4 bar | From left to right | 611432 | MS4-LR-1/8-D5-VS-DM1 | | | |
| | | | 595546 | MS4-LR-1/8-D5-VS-DM2 | | | |
| | | | 8190232 | MS4-LR-1/8-D5-VS-OS | | | |
| | | | 8190233 | MS4-LR-1/8-D5-VS-OS-WR | | | |
| | | | 529421 | MS4-LR-1/8-D5-AS | | | |
| | | | From right to left | 529422 | MS4-LR-1/8-D5-AS-Z | | |
| | 0,3 ... 7 bar | From left to right | 543520 | MS4-LR-1/8-D6-WR | | | |
| | | | 543519 | MS4-LR-1/8-D6-A8 | | | |
| | | | 8190234 | MS4-LR-1/8-D6 | | | |
| | | | 596080 | MS4-LR-1/8-D6-RG | | | |
| | | | 564918 | MS4-LR-1/8-D6-VS-DM1 | | | |
| | | | 575246 | MS4-LR-1/8-D6-VS-DM2 | | | |
| | | | 529423 | MS4-LR-1/8-D6-AS | | | |
| | | | | | From right to left | 529424 | MS4-LR-1/8-D6-AS-Z |
| | 0,5 ... 12 bar | From left to right | 611577 | MS4-LR-1/8-D7 | | | |
| | | | 563993 | MS4-LR-1/8-D7-VS-DM1 | | | |
| | | | 529425 | MS4-LR-1/8-D7-AS | | | |
| | | | | | From right to left | 529426 | MS4-LR-1/8-D7-AS-Z |
| | G1/4 | 0,3 ... 4 bar | From left to right | 589482 | MS4-LR-1/4-D5 | | |
| | | | | 578556 | MS4-LR-1/4-D5-A8 | | |
| 579184 | | | | MS4-LR-1/4-D5-RG | | | |
| 611015 | | | | MS4-LR-1/4-D5-VS-DM1 | | | |
| 594803 | | | | MS4-LR-1/4-D5-VS-DM2 | | | |
| 8190235 | | | | MS4-LR-1/4-D5-WR | | | |
| ★ 529415 | | | | MS4-LR-1/4-D5-AS | | | |
| | | | | | From right to left | 529416 | MS4-LR-1/4-D5-AS-Z |
| 0,3 ... 7 bar | | | | From left to right | 611578 | MS4-LR-1/4-D6 | |
| | | | | | 589294 | MS4-LR-1/4-D6-A8 | |
| | | 8190236 | MS4-LR-1/4-D6-A8-E11 | | | | |
| | | 8190237 | MS4-LR-1/4-D6-E11 | | | | |
| | | 8190238 | MS4-LR-1/4-D6-E11-WR | | | | |
| | | 567523 | MS4-LR-1/4-D6-RG | | | | |
| | | 8190239 | MS4-LR-1/4-D6-RG-E11 | | | | |
| | | 8190240 | MS4-LR-1/4-D6-RG-WR | | | | |
| | | 555873 | MS4-LR-1/4-D6-VS-DM1 | | | | |
| | | 555874 | MS4-LR-1/4-D6-VS-DM2 | | | | |
| | | 607246 | MS4-LR-1/4-D6-WR | | | | |
| | | ★ 529417 | MS4-LR-1/4-D6-AS | | | | |
| | | | | | From right to left | 529418 | MS4-LR-1/4-D6-AS-Z |
| | | 0,5 ... 12 bar | From left to right | | 8190241 | MS4-LR-1/4-D7 | |
| 610772 | | | | MS4-LR-1/4-D7-A8 | | | |
| 8190242 | | | | MS4-LR-1/4-D7-VS-DM1 | | | |
| 578847 | | | | MS4-LR-1/4-D7-VS-DM2 | | | |
| 8190243 | | | | MS4-LR-1/4-D7-WR | | | |
| ★ 529419 | | | | MS4-LR-1/4-D7-AS | | | |
| | | | | | From right to left | 529420 | MS4-LR-1/4-D7-AS-Z |

Datasheet

★ Core Range

| Ordering data | | | | |
|------------------------|---------------------------|--------------------|----------|--------------------|
| Pneumatic connection 1 | Pressure regulation range | Flow direction | Part no. | Type |
| MS6-LR... | | | | |
| G1/4 | 0,3 ... 4 bar | From left to right | 529995 | MS6-LR-1/4-D5-AS |
| | 0,3 ... 7 bar | | 529997 | MS6-LR-1/4-D6-AS |
| | 0,5 ... 12 bar | | 529999 | MS6-LR-1/4-D7-AS |
| G3/8 | 0,3 ... 4 bar | From left to right | 530001 | MS6-LR-3/8-D5-AS |
| | 0,3 ... 7 bar | | 530003 | MS6-LR-3/8-D6-AS |
| | 0,5 ... 12 bar | From right to left | 530004 | MS6-LR-3/8-D6-AS-Z |
| G1/2 | 0,3 ... 4 bar | From left to right | ★ 529989 | MS6-LR-1/2-D5-AS |
| | | | ★ 529991 | MS6-LR-1/2-D6-AS |
| | 0,5 ... 12 bar | From right to left | 529992 | MS6-LR-1/2-D6-AS-Z |
| | | From left to right | ★ 529993 | MS6-LR-1/2-D7-AS |
| | | From right to left | 529994 | MS6-LR-1/2-D7-AS-Z |

Ordering data – Modular product system

| Ordering table | | Grid dimension | [mm] | 40 | 62 | Conditions | Code | Enter code |
|-------------------------------------|---|-----------------------------------|------|----|-------------|------------|--------------|------------|
| Module no. | 527690 | 527663 | | | | | | |
| Series | Standard | | | | | | MS | MS |
| Size | 4 | 6 | | | | | ... | |
| Function | Pressure regulator | | | | | | -LR | -LR |
| Pneumatic connection | Female thread G1/8 | – | | | [1] | | -1/8 | |
| | Female thread G1/4 | Female thread G1/4 | | | [1] | | -1/4 | |
| | – | Female thread G3/8 | | | [1] | | -3/8 | |
| | – | Female thread G1/2 | | | [1] | | -1/2 | |
| | Connecting plate G1/8 | – | | | | | -AGA | |
| | Connecting plate G1/4 | Connecting plate G1/4 | | | | | -AGB | |
| | Connecting plate G3/8 | Connecting plate G3/8 | | | | | -AGC | |
| | – | Connecting plate G1/2 | | | | | -AGD | |
| | – | Connecting plate G3/4 | | | | | -AGE | |
| | Connecting plate 1/8 NPT | – | | | [1] | | -AQK | |
| | Connecting plate 1/4 NPT | Connecting plate 1/4 NPT | | | [1] | | -AQN | |
| | Connecting plate 3/8 NPT | Connecting plate 3/8 NPT | | | [1] | | -AQP | |
| | – | Connecting plate 1/2 NPT | | | [1] | | -AQR | |
| | – | Connecting plate 3/4 NPT | | | [1] | | -AQS | |
| Pressure regulation range/actuation | 0.3 ... 4 bar, manually actuated | | | | | | -D5 | |
| | 0.3 ... 7 bar, manually actuated | | | | | | -D6 | |
| | 0.5 ... 12 bar, manually actuated | | | | | | -D7 | |
| | – | 0.5 ... 16 bar, manually actuated | | | [1] [4] | | -D8 | |
| Pressure gauge alternatives | MS pressure gauge | | | | | | | |
| | Cover plate | | | | | | -VS | |
| | Adapter for EN pressure gauge 1/8, without pressure gauge | – | | | | | -A8 | |
| | Adapter for EN pressure gauge 1/4, without pressure gauge | | | | | | -A4 | |
| | Integrated pressure gauge, red/green scale | | | | [2] [3] [4] | | -RG | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/O contact | | | | [1] [2] [5] | | -AD7 | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/C contact | | | | [1] [2] [5] | | -AD8 | |
| | Pressure sensor with status indicator, plug M8, window comparator, PNP, N/O contact | | | | [1] [2] [5] | | -AD9 | |
| | Pressure sensor with status indicator, plug M8, window comparator, PNP, N/C contact | | | | [1] [2] [5] | | -AD10 | |
| | Pressure sensor with LCD display, plug M12, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA | | | | [2] [5] | | -AD11 | |
| | Pressure sensor with LCD display, plug M8, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA | | | | [2] [5] | | -AD12 | |

[1] 1/8, 1/4, 3/8, 1/2, AQK, AQN, AQP, AQR, AQS, D8, AD7 ... AD10, Not with EU EX4 certification.
DM1, DM2, KD, E11, WPM

[2] RG, AD7 ... AD10, AD11/AD12, OS, KD, AS, WR, WB

[3] RG, OS, KD, AS

[4] D8, RG, OS, KD, AS

[5] AD7 ... AD10, AD11/AD12

MS4: not with rotary knob alternative DM2.

Not with rotary knob alternative DM1.

MS6: not with rotary knob alternative DM2.

Measuring range max. 10 bar.

Not with pressure regulation range D8

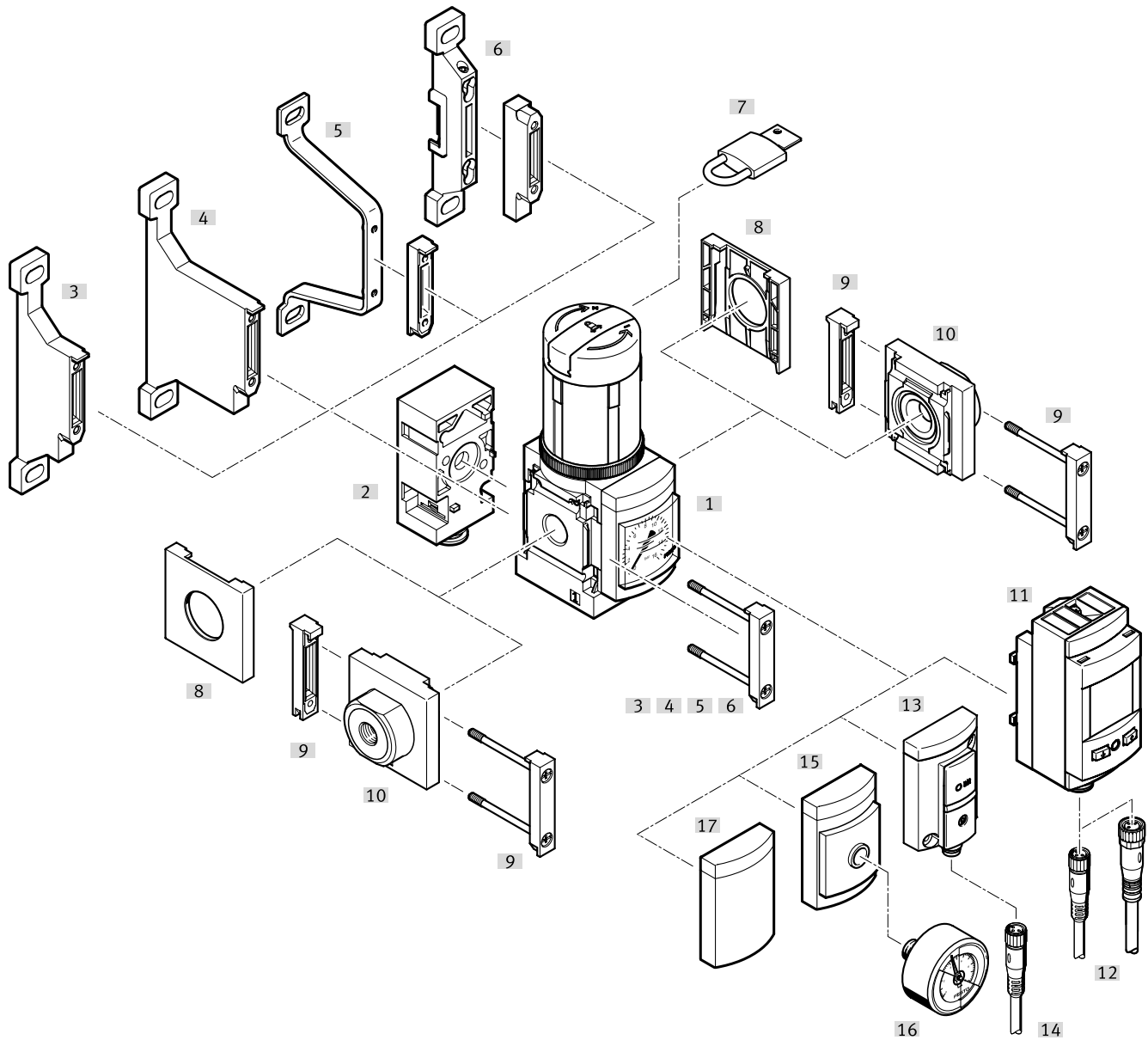
Ordering data – Modular product system

| Ordering table | | 40 | 62 | Conditions | Code | Enter code |
|----------------------------------|---|----|----|-------------------------|------|------------|
| Grid dimension | [mm] | | | | | |
| Alternative pressure gauge scale | MS pressure gauge, bar | | | | | |
| | psi | | | [6] | -PSI | |
| | MPa | | | [7] | -MPA | |
| Secondary exhausting | With secondary exhausting | | | | | |
| | Without secondary exhausting | | | [2] [3] [4] | -OS | |
| Rotary knob alternative | None | | | | | |
| | Long rotary knob | | | [8] | -LD | |
| | Rotary knob pressure gauge, small | - | | [1] [8] [9] | -DM1 | |
| | Rotary knob pressure gauge, large | | | [1] [8] [9] | -DM2 | |
| Alternative mounting position | None | | | | | |
| | Rotary knob underneath | | | [1] [2] [3] [4] [10] | -KD | |
| Locking option | None | | | | | |
| | Lockable using accessories | | | [2] [3] [4] | -AS | |
| | With integrated lock | | | [1] | -E11 | |
| Type of mounting | Without mounting bracket | | | | | |
| | Mounting bracket with knurled nut for regulator head | | | [2] [11] | -WR | |
| | Mounting bracket standard design | | | [12] | -WP | |
| | Mounting bracket for hooking in service unit components | | | [1] [12] | -WPM | |
| | Mounting bracket centrally at the rear (wall mounting top and bottom), connecting plates not required | | | [2] | -WB | |
| | Mounting bracket centrally at the rear (wall mounting top), connecting plates not required | - | | | | -WBM |
| EU certification | None | | | | | |
| | II 2GD to EU Explosion Protection Directive (ATEX) | | | | -EX4 | |
| UL certification | None | | | | | |
| | cULus, ordinary location for Canada and USA | | | | -UL1 | |
| Flow direction | Flow direction from left to right | | | | | |
| | Flow direction from right to left | | | | -Z | |

- [6] PSI Not with pressure gauge alternatives VS, A8, A4, RG, AD7 ... AD10.
 [7] MPA Not with pressure gauge alternatives VS, A8, A4, AD7 ... AD10.
 Not with rotary knob alternative DM1, DM2.
 [8] LD, DM1, DM2 Not with locking option E11.
 [9] DM1, DM2 Can only be combined with pressure gauge alternatives VS, A8, A4, AD7 ... AD10.
 [10] KD Not with pressure gauge alternative RG.
 Not with alternative pressure gauge scale MPa.
 Not with mounting type WP.
 [11] WR Not with long rotary knob LD or rotary knob alternative DM2.
 [12] WP, WPM Only with connecting plate AGA, AGB, AGC, AGD, AGE, AQK, AQN, AQP, AQR or AQS.

Peripherals overview

Pressure regulator MS4/MS6-LRB with pressure output at the rear



 **Note**

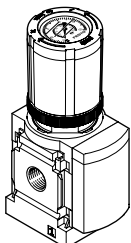
Additional accessories:

- Module connectors for combination with size MS4/MS6 or size MS9
→ Internet: amv, rmv, armv
- Adapters for mounting on profiles
→ Internet: ipm-80, ipm-40-80, ipm-80-80

Pressure regulator with rotary knob pressure gauge

MS4-LRB-...-DM1/

MS6-LRB-...-DM2

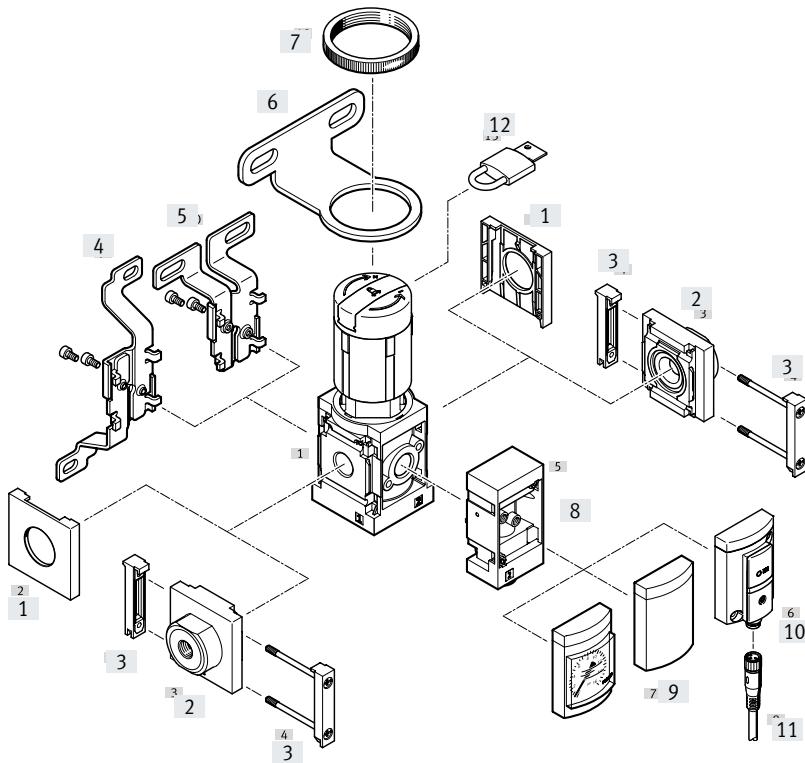


Peripherals overview

| Mounting attachments and accessories | | Individual device | | Combination | | → Page/Internet |
|--------------------------------------|--|--------------------------|-----------------------|--------------------------|-----------------------|---------------------|
| | | Without connecting plate | With connecting plate | Without connecting plate | With connecting plate | |
| [1] | Pressure regulator MS4/MS6-LRB | ■ | ■ | ■ | ■ | 32 |
| [2] | Angled outlet block B... | ■ | ■ | ■ | ■ | 46 |
| [3] | Mounting bracket MS4/6-WP | - | ■ | ■ | ■ | ms4-wp, ms6-wp |
| [4] | Mounting bracket MS4/6-WPB | - | ■ | ■ | ■ | ms4-wp, ms6-wp |
| [5] | Mounting bracket MS4/6-WPE | - | ■ | ■ | ■ | ms4-wp, ms6-wp |
| [6] | Mounting bracket MS4/6-WPM | - | ■ | ■ | ■ | ms4-wp, ms6-wp |
| [7] | Padlock LRVS-D | ■ | ■ | ■ | ■ | 102 |
| [8] | Cover cap MS4/6-END | ■ | - | ■ | - | ms4-end, ms6-end |
| [9] | Module connector MS4/6-MV | - | ■ | ■ | ■ | ms4-mv, ms6-mv |
| [10] | Connecting plate SET MS4/6-AG... | - | ■ | - | ■ | ms4-ag, ms6-ag |
| [11] | Pressure sensor with LCD display AD11/AD12 | ■ | ■ | ■ | ■ | 46 |
| [12] | Connecting cable NEBU-M8...-LE4/NEBU-M12...-LE4 | ■ | ■ | ■ | ■ | 102 |
| [13] | Pressure sensor without display AD7 ... AD10 | ■ | ■ | ■ | ■ | 46 |
| [14] | Connecting cable NEBU-M8...-LE3 | ■ | ■ | ■ | ■ | 102 |
| [15] | Adapter for EN pressure gauge 1/8, 1/4 A8/A4 | ■ | ■ | ■ | ■ | 46 |
| [16] | Pressure gauge MA | ■ | ■ | ■ | ■ | 102 |
| [17] | Cover plate VS | ■ | ■ | ■ | ■ | 46 |

Peripherals overview

Pressure regulator MS4/MS6-LRB with pressure output at the front



Note

Additional accessories:

- Module connectors for combination with size MS4/MS6 or size MS9
 - Internet: amv, rmv, armv
- Adapters for mounting on profiles
 - Internet: ipm-80, ipm-40-80, ipm-80-80

Peripherals overview

| Mounting attachments and accessories | | Individual device | | Combination | | → Page/Internet |
|--------------------------------------|--|--------------------------|-----------------------|--------------------------|-----------------------|---------------------|
| | | Without connecting plate | With connecting plate | Without connecting plate | With connecting plate | |
| [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] | Mounting bracket MS4/6-WB | ■ | ■ | – | – | ms4-wb, ms6-wb |
| [5] | Mounting bracket MS4-WBM | ■ | ■ | – | – | ms4-wbm |
| [6] | Mounting bracket MS4/6-WR | ■ | ■ | – | – | ms4-wr, ms6-wr |
| [7] | Knurled nut (included in the scope of delivery) MS-LR | ■ | ■ | – | – | – |
| [8] | Angled outlet block B... | ■ | ■ | ■ | ■ | 46 |
| [9] | Cover plate VS | ■ | ■ | ■ | ■ | 46 |
| [10] | Pressure sensor without display AD7 ... AD10 | ■ | ■ | ■ | ■ | 46 |
| [11] | Connecting cable NEBU-M8...-LE3 | ■ | ■ | ■ | ■ | 102 |
| [12] | Padlock LRVS-D | ■ | ■ | ■ | ■ | 102 |

Type codes

| | | |
|-------------|---|--|
| 001 | Series | |
| MS | MS series | |
| 002 | Size | |
| 4 | Grid dimension 40 mm | |
| 003 | Function | |
| LRB | Pressure regulator for manifold assembly | |
| 004 | Pneumatic connection | |
| 1/4 | Female thread G1/4 | |
| AGA | Sub-base G1/8 | |
| AGB | Sub-base G1/4 | |
| AGC | Sub-base G3/8 | |
| 005 | Pressure regulation range | |
| D5 | 0.3 ... 4 bar | |
| D6 | 0.3 ... 7 bar | |
| D7 | 0.5 ... 12 bar | |
| 006 | Pressure gauge alternatives | |
| | None | |
| A4 | Adapter for EN pressure gauge 1/4, without pressure gauge | |
| A8 | Adapter for EN pressure gauge 1/8, without pressure gauge | |
| AD7 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O | |
| AD8 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/C | |
| AD9 | Pressure sensor with switching display, M8 plug, window comparator, PNP, N/O | |
| AD10 | Pressure sensor with operational status indicator, M8 plug, window comparator, PNP, N/C | |
| AD11 | Pressure sensor with LCD display, M12 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA | |
| AD12 | Pressure sensor with LCD display, M8 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA | |
| RG | Integrated pressure gauge, red/green scale | |
| VS | Cover plate | |
| 007 | Alternative pressure gauge scale | |
| | MS pressure gauge | |
| PSI | psi | |
| MPA | MPa | |

| | | |
|------------|---|--|
| 008 | Secondary exhausting | |
| | With secondary exhausting | |
| OS | Without secondary exhaust | |
| 009 | Rotary knob alternative | |
| | None | |
| LD | Long rotary knob | |
| DM1 | Rotary knob pressure gauge, small | |
| 010 | Alternative mounting position | |
| | None | |
| KD | Rotary knob underneath | |
| 011 | Lockability | |
| | None | |
| AS | Can be locked using accessories | |
| E11 | With integrated lock | |
| 012 | Alternative pressure outlet | |
| | None | |
| BC | Angled outlet block QS-6 | |
| BD | Angled outlet block QS-8 | |
| 013 | Type of mounting | |
| | Without mounting bracket | |
| WR | Mounting bracket with knurled nut on regulator knob | |
| WP | Mounting bracket basic design | |
| WPB | Mounting bracket for large wall gap | |
| WPM | Mounting bracket for hooking in service unit components | |
| WB | Mounting centrally at rear (wall mounting top and bottom), connecting plates not required | |
| WBM | Mounting centrally at rear (wall mounting top), connecting plates not required | |
| 014 | EU certification | |
| | None | |
| EX4 | II 2GD | |
| 015 | UL certification | |
| | None | |
| UL1 | cULus ordinary location for Canada and USA | |
| 016 | Outlet direction | |
| | Pressure output to the rear | |
| Z | Pressure output to the front | |

Type codes

| 001 | Series |
|-----|-----------|
| MS | MS series |

| 002 | Size |
|-----|----------------------|
| 6 | Grid dimension 62 mm |

| 003 | Function |
|-----|--|
| LRB | Pressure regulator for manifold assembly |

| 004 | Pneumatic connection |
|-----|----------------------|
| 1/2 | Female thread G1/2 |
| AGB | Sub-base G1/4 |
| AGC | Sub-base G3/8 |
| AGD | Sub-base G1/2 |
| AGE | Sub-base G3/4 |

| 005 | Pressure regulation range |
|-----|---------------------------|
| D5 | 0.3 ... 4 bar |
| D6 | 0.3 ... 7 bar |
| D7 | 0.5 ... 12 bar |
| D8 | 0.5 ... 16 bar |

| 006 | Pressure gauge alternatives |
|------|---|
| | None |
| A4 | Adapter for EN pressure gauge 1/4, without pressure gauge |
| A8 | Adapter for EN pressure gauge 1/8, without pressure gauge |
| AD7 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O |
| AD8 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/C |
| AD9 | Pressure sensor with switching display, M8 plug, window comparator, PNP, N/O |
| AD10 | Pressure sensor with operational status indicator, M8 plug, window comparator, PNP, N/C |
| AD11 | Pressure sensor with LCD display, M12 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA |
| AD12 | Pressure sensor with LCD display, M8 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA |
| RG | Integrated pressure gauge, red/green scale |
| VS | Cover plate |

| 007 | Alternative pressure gauge scale |
|-----|----------------------------------|
| | MS pressure gauge |
| PSI | psi |
| MPA | MPa |

| 008 | Secondary exhausting |
|-----|---------------------------|
| | With secondary exhausting |
| OS | Without secondary exhaust |

| 009 | Rotary knob alternative |
|-----|-----------------------------------|
| | None |
| LD | Long rotary knob |
| DM2 | Rotary knob pressure gauge, large |

| 010 | Alternative mounting position |
|-----|-------------------------------|
| | None |
| KD | Rotary knob underneath |

| 011 | Lockability |
|-----|---------------------------------|
| | None |
| AS | Can be locked using accessories |
| E11 | With integrated lock |

| 012 | Alternative pressure outlet |
|-----|-----------------------------|
| | None |
| BD | Angled outlet block QS-8 |
| BE | Angled outlet block QS-10 |

| 013 | Type of mounting |
|-----|---|
| | Without mounting bracket |
| WR | Mounting bracket with knurled nut on regulator knob |
| WP | Mounting bracket basic design |
| WPM | Mounting bracket for hooking in service unit components |
| WB | Mounting centrally at rear (wall mounting top and bottom), connecting plates not required |
| WBM | Mounting centrally at rear (wall mounting top), connecting plates not required |

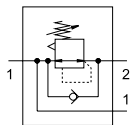
| 014 | EU certification |
|-----|------------------|
| | None |
| EX4 | II 2GD |

| 015 | UL certification |
|-----|--|
| | None |
| UL1 | cULus ordinary location for Canada and USA |

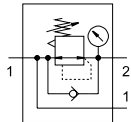
| 016 | Outlet direction |
|-----|------------------------------|
| | Pressure output to the rear |
| Z | Pressure output to the front |





Datasheet

Without pressure gauge



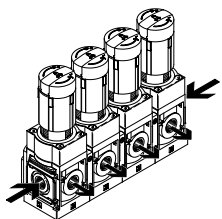
With pressure gauge



-  Flow rate
300 ... 7300 l/min
-  Temperature range
-10 ... +60°C
-  Operating pressure
0.8 ... 20 bar
-  www.festo.com



Several pressure regulators mounted next to one another to form a regulator manifold:



The pressure regulator is suitable for manifold assemblies with through air supply, for configuring a regulator manifold with separate, independent pressure regulation ranges. The pressure output is to the front or rear.

- Good regulation characteristics with minimal hysteresis and input pressure compensation
- Manifold assembly with through air supply
- For configuring a regulator manifold with independent pressure regulation ranges
- Actuator lock to protect the set values from being adjusted
- Available with and without secondary exhausting
- Four pressure regulation ranges: 0.3 ... 4 bar, 0.3 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Return flow option for exhausting from output 2 to output 1 already integrated
- Optional pressure sensor
- Optional rotary knob pressure gauge
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

| General technical data | | | MS4 | MS6 |
|-------------------------------------|---------|-------|--|--|
| Size | | | MS4 | MS6 |
| Pneumatic connection 1 | | | | |
| Female thread | | | G1/4 | G1/2 |
| Connecting plate | [AG...] | | G1/8, G1/4 or G3/8 | G1/4, G3/8, G1/2 or G3/4 |
| Pneumatic connection 2 | | | | |
| Female thread | | | G1/4 | G1/2 |
| Angled outlet block | [BC] | | QS-6 | - |
| | [BD] | | QS-8 | QS-8 |
| | [BE] | | - | QS-10 |
| Design | | | Directly actuated diaphragm regulator with through compressed air supply | |
| Regulator function | | | Output pressure constant, with input pressure compensation, with return flow, with/without secondary exhausting | |
| Type of mounting | | | Via accessories In-line installation Front panel mounting | |
| Mounting position | | | Any | |
| Actuator lock | | | Rotary knob with latch Rotary knob with latch, can be locked using accessories Rotary knob with integrated lock | |
| Pressure regulation range/actuation | [D5] | [bar] | 0.3 ... 4, manually actuated ¹⁾ | |
| | [D6] | [bar] | 0.3 ... 7, manually actuated ¹⁾ | |
| | [D7] | [bar] | 0.5 ... 12, manually actuated (0.5 ... 10 with pressure sensor or with UL certification) ¹⁾ | |
| | [D8] | [bar] | | 0.5 ... 16, manually actuated (0.5 ... 10 with UL certification) |
| Max. pressure hysteresis | | [bar] | 0.25 | 0.25 (0.4 with rotary knob pressure gauge) |
| Pressure indication | | | Via pressure sensor for indicating the output pressure and electrical output via LCD display Via pressure sensor for indicating the output pressure and electrical output Via pressure gauge for indicating the output pressure Via pressure gauge with red/green scale for indicating the output pressure Via pressure gauge in the rotary knob for displaying the output pressure Prepared for G1/8 | |
| | | | | - |
| | | | Prepared for G1/4 | |

1) MS4: the pressure regulation range for pressure regulators with rotary knob pressure gauge starts at 0.8 bar.

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

Datasheet

| Standard nominal flow rate $q_{nN}^{1)}$ [l/min] | | | | | | | |
|--|----------|---------------------|-------------------|-------------------|---------------------|-------------------|-------------------|
| Size | MS4 | | | | MS6 | | |
| | Standard | Angled outlet block | | Standard | Angled outlet block | | |
| | | [BC]: QS-6 | [BD]: QS-8 | | [BD]: QS-8 | [BE]: QS-10 | |
| Pressure regulation range | [D5] | 1900 ²⁾ | 300 ²⁾ | 650 ²⁾ | 7300 ²⁾ | 600 ²⁾ | 750 ²⁾ |
| | [D6] | 1700 | 350 | 840 | 6300 | 880 | 1000 |
| | [D7] | 1500 ³⁾ | 350 | 640 | 5500 | 800 | 950 |
| | [D8] | – | – | – | 4500 | 750 | 850 |

- 1) Measured at $p_1 = 10$ bar and $p_2 = 6$ bar, $\Delta p = 1$ bar
- 2) Measured at $p_1 = 10$ bar and $p_2 = 3$ bar, $\Delta p = 1$ bar
- 3) With a rotary knob pressure gauge, $q_{nN} = 800$ l/min, $q_{n\max} = 2200$ l/min

| Operating and environmental conditions | | |
|--|---|-----|
| Size | MS4 | MS6 |
| Operating pressure [bar] | 0.8 ... 14 (0.8 ... 10) ¹⁾ | |
| 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 lubrication will always be required) | |
| Ambient temperature [°C] | –10 ... +60 (0 ... +50) ²⁾ | |
| Temperature of medium [°C] | –10 ... +60 (0 ... +50) ²⁾ | |
| Storage temperature [°C] | –10 ... +60 | |
| Corrosion resistance class CRC ³⁾ | 2 | |
| Food-safe ⁴⁾ | See supplementary material information | |
| UL certification ⁴⁾ | c UL us - Recognized (OL) | |

- 1) Value in brackets applies to MS4/MS6-LRB with UL certification.
- 2) Value in brackets applies to MS4/MS6-LRB with pressure sensor.
- 3) More information www.festo.com/x/topic/crc
- 4) More information: www.festo.com/catalogue/ms-lrb → Support/Downloads.

| ATEX | |
|--|---|
| EU certification | [EX4] |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T6 Gb X |
| ATEX category for dust | II 2D |
| Type of (ignition) protection for dust | Ex h IIIC T60°C Db X |
| Explosion ambient temperature | –10°C ≤ Ta ≤ +60°C |
| Explosion protection certification outside the EU | EPL Db (GB) |
| | EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) ¹⁾ | To UK regulations for explosions |

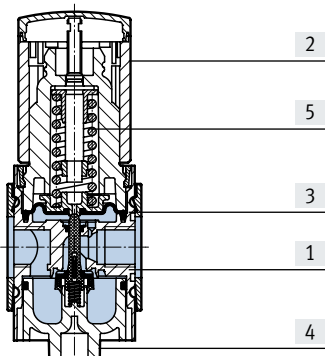
- 1) More information: www.festo.com/catalogue/ms-lrb → Support/Downloads.

| Weight [g] | | |
|--|-----|------|
| Size | MS4 | MS6 |
| Pressure regulator | 222 | 747 |
| Pressure regulator with rotary knob with integrated lock | 347 | 1017 |

Datasheet

Materials

Sectional view



Pressure regulator (manifold assembly)

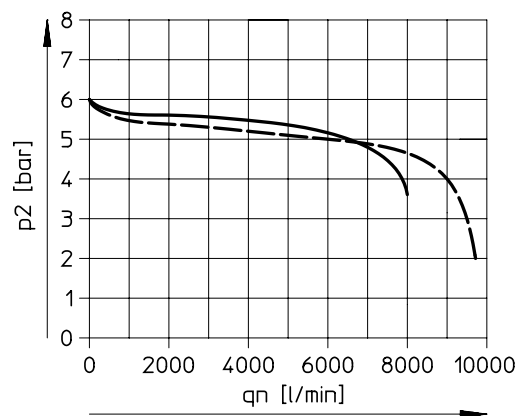
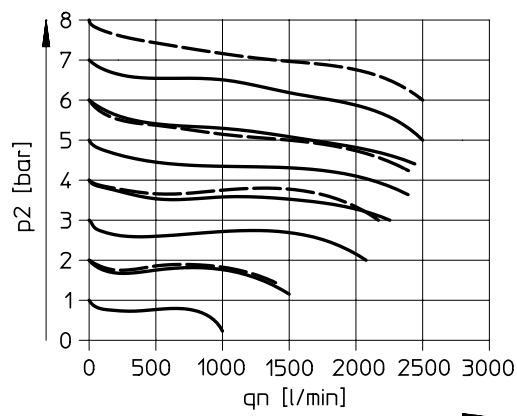
| | | |
|------------------------|----------------------------------|--------------------|
| [1] | Housing | Die-cast aluminium |
| [2] | Rotary knob | PA, POM |
| | Rotary knob with integrated lock | Aluminium |
| [3] | Diaphragm | NBR |
| [4] | Bottom cover | PET |
| [5] | Springs | Steel |
| - | Seals | NBR |
| Note on materials | | RoHS-compliant |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L |

Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 10$ bar)

MS4-LRB-1/4

MS6-LRB-1/2

Input pressure $p_1 = 10$ bar



— [D6]: 0.3 ... 7 bar
 - - - [D7]: 0.5 ... 12 bar¹⁾

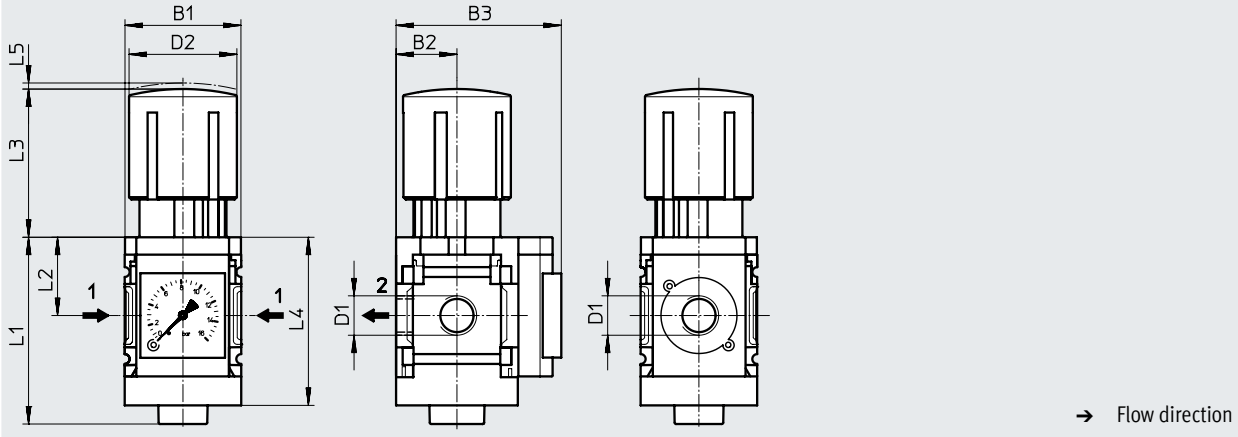
1) There is a higher initial pressure drop in the characteristic curve for variant DM1.

Datasheet

Dimensions – Basic version

Download CAD data → www.festo.com

- [] Integrated MS pressure gauge with standard scale
- [RG] Integrated MS pressure gauge with red/green scale
- [] Rotary knob with latch



| Type | B1 | B2 | B3 | | D1 | D2 | L1 | L2 | L3 | L4 | L5 |
|-------------|----|----|----------------|-----------------|------|------|------|----|------|------|----|
| | | | Pressure gauge | | | | | | | | |
| | | | Standard scale | Red/green scale | | | | | | | |
| MS4-LRB-1/4 | 40 | 21 | 57 | 58.5 | G1/4 | 37.2 | 64.4 | 27 | 60.3 | 58.5 | 2 |
| MS6-LRB-1/2 | 62 | 31 | 77 | 78.5 | G1/2 | 51.2 | 94 | 39 | 95.1 | 85 | 5 |

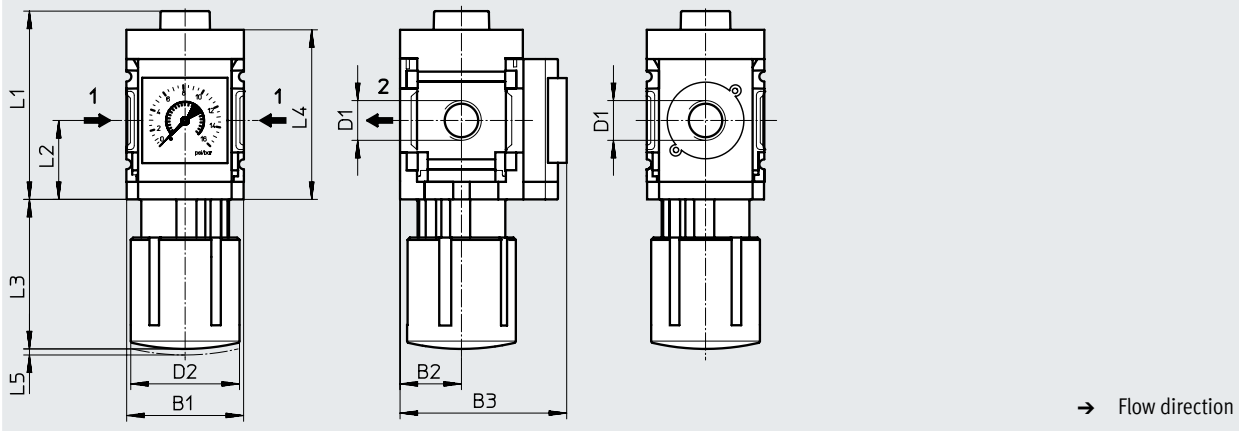
† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet

Dimensions – Alternative mounting position

Download CAD data → www.festo.com

[KD] Rotary knob underneath



| Type | B1 | B2 | B3 | D1 | D2 | L1 | L2 | L3 | L4 | L5 |
|--------------------|----|----|----|------|------|------|----|------|------|----|
| MS4-LRB-1/4-...-KD | 40 | 21 | 57 | G1/4 | 37.2 | 64.4 | 27 | 60.3 | 58.5 | 2 |
| MS6-LRB-1/2-...-KD | 62 | 31 | 77 | G1/2 | 51.2 | 94 | 39 | 95.1 | 85 | 5 |

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

Datasheet

Dimensions – Angled outlet block

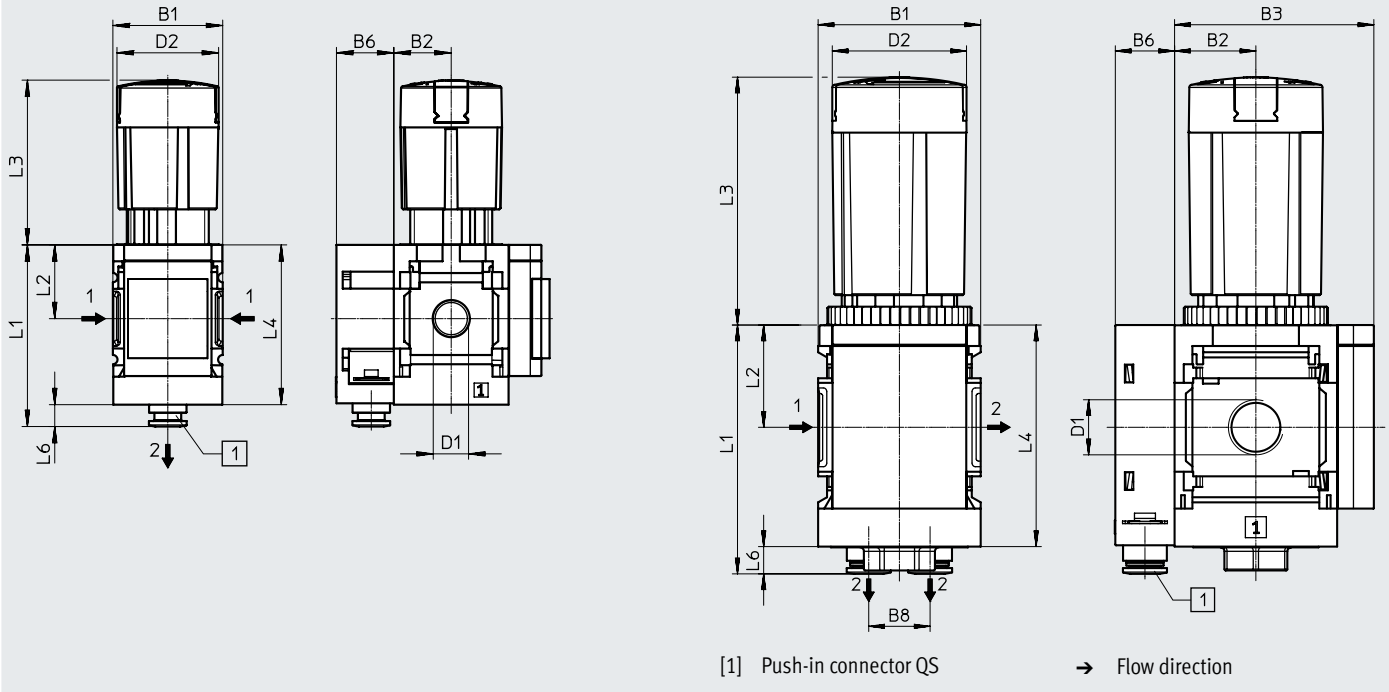
Download CAD data → www.festo.com

[BC]/[BD]/[BE] Angled outlet block

[] Pressure output at the rear

MS4

MS6



| Type | B1 | B2 | B3 | B6 | B8 | D1 | D2 ∅ | L1 | L2 | L3 | L4 | L6 |
|-----------------------|----|----|----|----|------|------|---------|------|----|------|------|------|
| MS4-LRB-1/4-...-BC/BD | 40 | 21 | 57 | 21 | – | G1/4 | 37.2 | 66.5 | 27 | 60.3 | 58.5 | 8 |
| MS6-LRB-1/2-...-BD/BE | 62 | 31 | 77 | 23 | 23.4 | G1/2 | 51.2 | 94.9 | 39 | 95.1 | 85 | 10.4 |

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

Datasheet

Dimensions – Angled outlet block

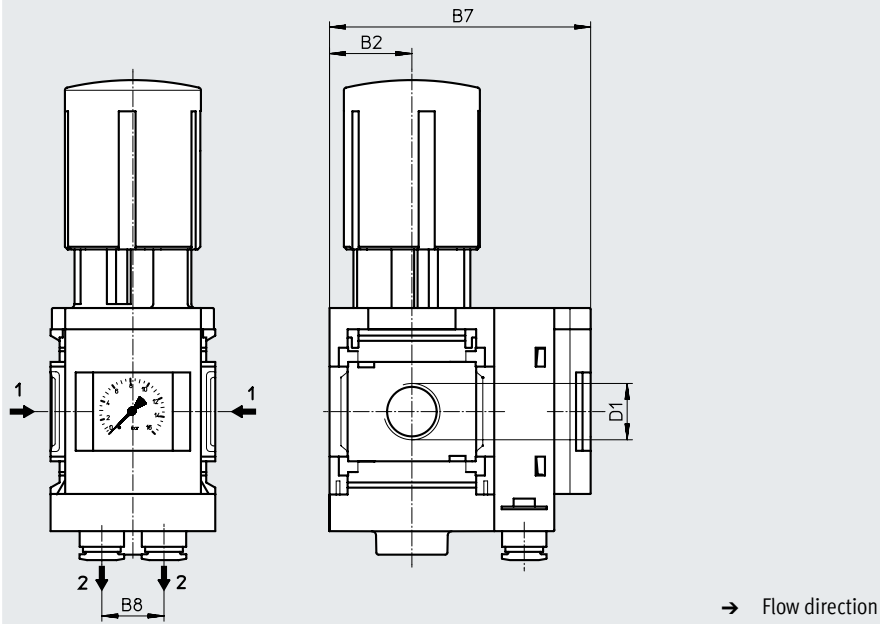
Download CAD data → www.festo.com

[BC]/[BD]/[BE] Angled outlet block

[Z] Pressure output to front

MS4 (not shown)

MS6



→ Flow direction

| Type | B2 | B7 | B8 | D1 |
|-----------------------|----|----|------|------|
| MS4-LRB-1/4-...-BC/BD | 21 | 75 | – | G1/4 |
| MS6-LRB-1/2-...-BD/BE | 31 | 99 | 23.4 | G1/2 |

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

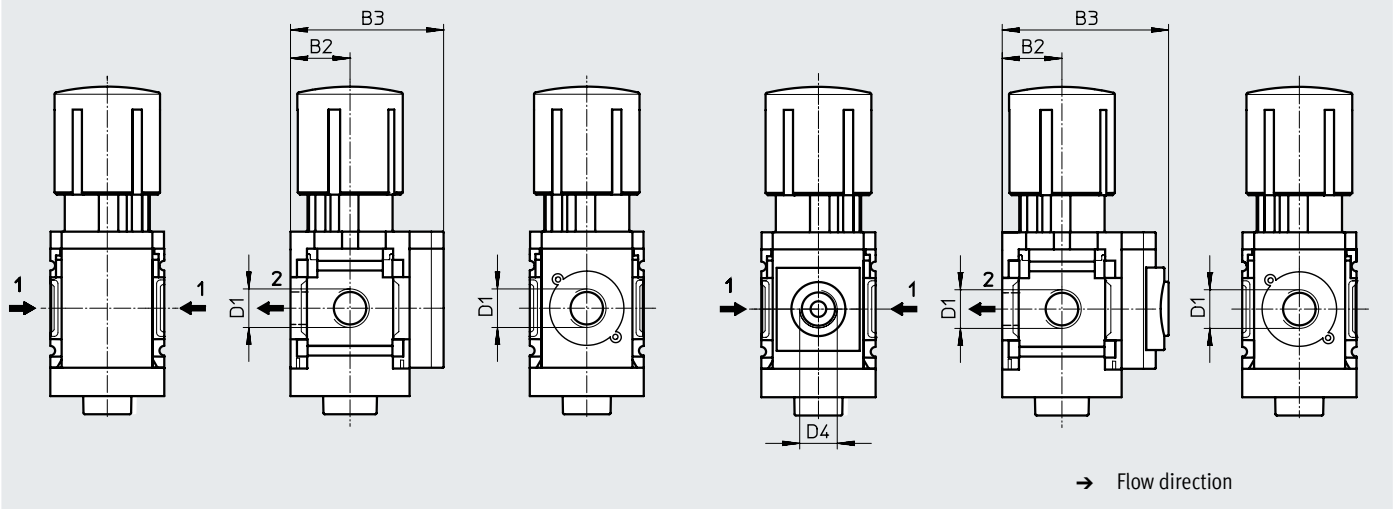
Datasheet

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

[VS] Cover plate

- [A8] Adapter for EN pressure gauge 1/8, without pressure gauge
- [A4] Adapter for EN pressure gauge 1/4, without pressure gauge

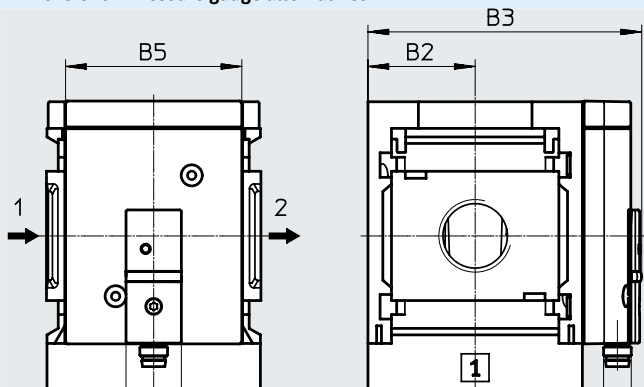


| Type | B2 | B3 | D1 | D4 |
|--------------------|----|------|------|------|
| MS4-LRB-1/4-...-VS | 21 | 54 | G1/4 | - |
| MS4-LRB-1/4-...-A8 | 21 | 58.5 | G1/4 | G1/8 |
| MS4-LRB-1/4-...-A4 | 21 | 58.5 | G1/4 | G1/4 |
| MS6-LRB-1/2-...-VS | 31 | 76 | G1/2 | - |
| MS6-LRB-1/2-...-A4 | 31 | 78.5 | G1/2 | G1/4 |

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

Datasheet

Dimensions – Pressure gauge alternatives



Variant AD7:
SDE5-D10-0-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/O contact

Variant AD8:
SDE5-D10-C-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/C contact

Download CAD data → www.festo.com

Variant AD9:
SDE5-D10-03-...-P-M8 with 3-pin plug M8x1, window comparator, 1 switching output PNP, N/O contact

Variant AD10:
SDE5-D10-C3-...-P-M8 with 3-pin plug M8x1, window comparator, 1 switching output PNP, N/C contact

→ Flow direction

| Type | B2 | B3 | B5 | B6 | D6 | L5 | L6 |
|----------------------------|----|------|----|----|------|----|----|
| MS4-LR...-AD7/AD8/AD9/AD10 | 21 | 59.1 | 32 | 16 | M8x1 | - | - |
| MS6-LR...-AD7/AD8/AD9/AD10 | 31 | 79.1 | 51 | 16 | M8x1 | - | - |

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

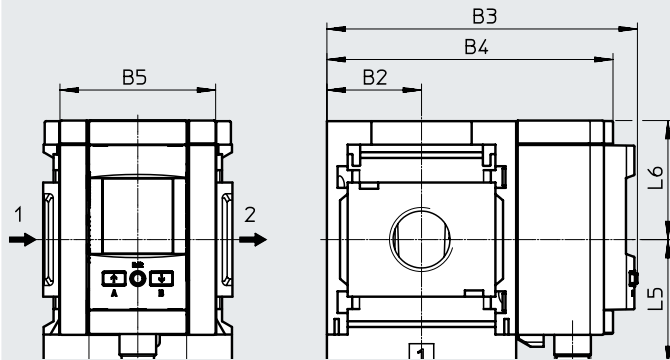
Datasheet

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

[AD11/AD12] Pressure sensor with LCD display

Datasheets → Internet: spau



Variant AD11:
 SPAU-P10R-MS-L-PNLK-M12 with
 plug M12, 4-pin, IO-Link®, PNP,
 NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA

Variant AD12:
 SPAU-P10R-MS-L-PNLK-M8 with plug
 M8, 4-pin, IO-Link®, PNP, NPN,
 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA

→ Flow direction

| Type | B2 | B3 | B4 | B5 | B6 | D6 | L5 | L6 |
|----------------|----|-------|------|----|----|-------|------|----|
| MS4-LR...-AD11 | 21 | 81.2 | 73.3 | 32 | 32 | M12x1 | 41.2 | 39 |
| MS4-LR...-AD12 | 21 | 81.2 | 73.3 | 32 | 32 | M8x1 | 37.9 | 39 |
| MS6-LR...-AD11 | 31 | 101.8 | 93.7 | 51 | 32 | M12x1 | 41.2 | 39 |
| MS6-LR...-AD12 | 31 | 101.8 | 93.7 | 51 | 32 | M8x1 | 37.9 | 39 |

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

Datasheet

Dimensions – Rotary knob

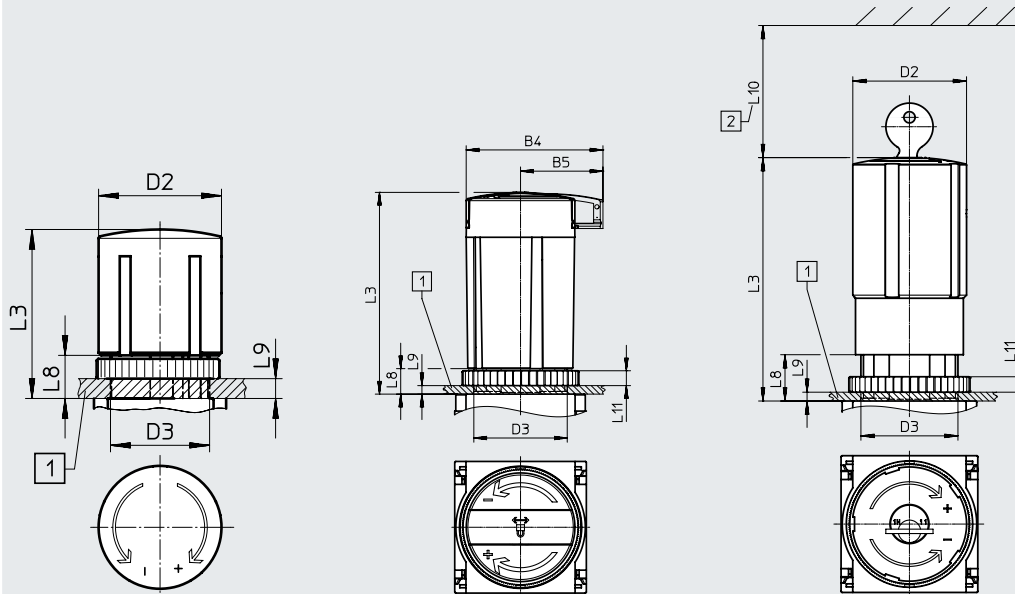
Download CAD data → www.festo.com

For control panel installation

[] Rotary knob with latch

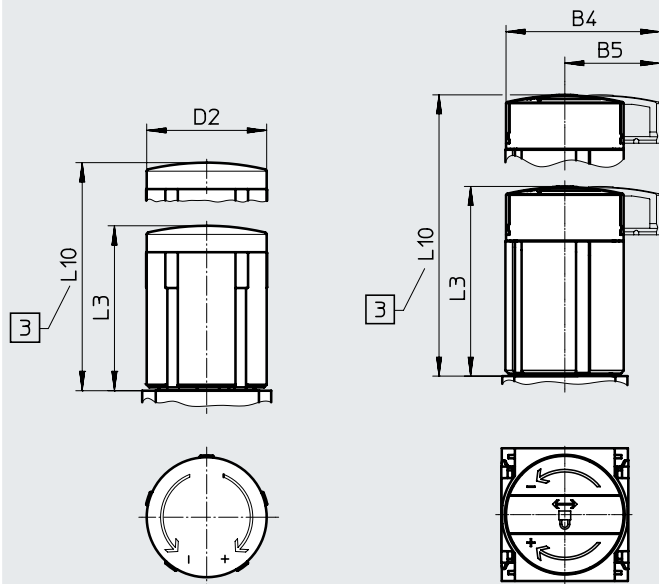
[AS] Rotary knob with latch, can be locked using accessories

[E11] Rotary knob with integrated lock



[LD] Rotary knob, long, with latch

[LD-AS] Rotary knob, long, with latch, can be locked using accessories



| Type | B4 | B5 | D2 | D3 | L3 | L8 | L9 | L10 |
|-------------------|------|------|------|---------|------|----|-------|-----|
| MS4-LRB-... | - | - | 37.2 | M30x1.5 | 51.1 | 13 | 5 | - |
| MS4-LRB-...-AS | 48.6 | 30 | | | 60.2 | 13 | 5 | - |
| MS4-LRB-...-E11 | - | - | | | 76 | 14 | 6 | 60 |
| MS4-LRB-...-LD | - | - | | 51.1 | - | - | 76.8 | |
| MS4-LRB-...-LD-AS | 48.6 | 30 | | 60 | - | - | 85.7 | |
| MS6-LRB-... | - | - | 51.2 | M44x1 | 86 | 21 | 14 | - |
| MS6-LRB-...-AS | 64.4 | 38.8 | | | 95.1 | 12 | 5 | - |
| MS6-LRB-...-E11 | - | - | | | 110 | 21 | 14 | 60 |
| MS6-LRB-...-LD | - | - | | 86 | - | - | 139 | |
| MS6-LRB-...-LD-AS | 64.4 | 38.8 | | 95.5 | - | - | 148.5 | |

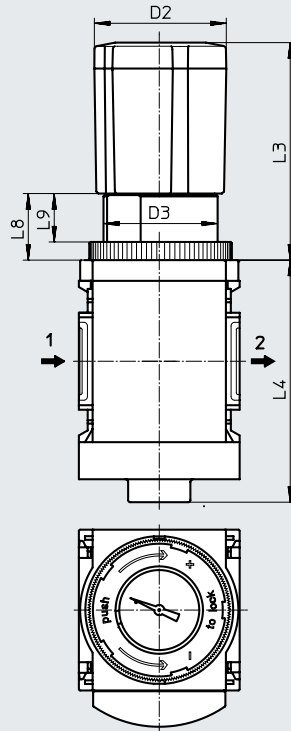
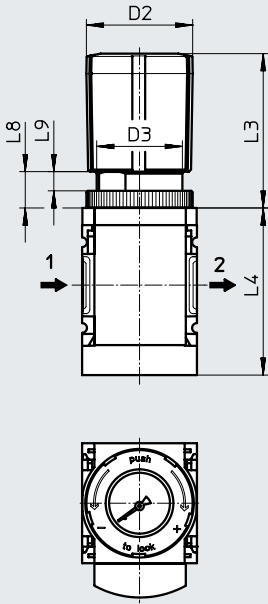
Datasheet

Dimensions – Rotary knob pressure gauge

Download CAD data → www.festo.com

[DM1] Rotary knob pressure gauge, small

[DM2] Rotary knob pressure gauge, large



→ Flow direction

| Type | D2 | D3 | L3 | L4 | L8 | L9 |
|-----------------|------|---------|----|------|----|-----|
| MS4-LRB-...-DM1 | 37.2 | M30x1.5 | 54 | 58.5 | 13 | 6.7 |
| MS6-LRB-...-DM2 | 51 | M44x1 | 84 | 94 | 25 | 18 |

Ordering data

| Pneumatic connection 1 | Pressure regulation range | Flow direction | Part no. | Type |
|------------------------|---------------------------|--------------------|----------------------|------------------------|
| MS4-LRB... | | | | |
| G1/4 | 0.3 ... 4 bar | From left to right | 529471 | MS4-LRB-1/4-D5-A8-AS |
| | | From left to right | 529473 | MS4-LRB-1/4-D5-AS |
| | | From left to right | 529474 | MS4-LRB-1/4-D5-AS-BD |
| | 0.3 ... 7 bar | From left to right | 529477 | MS4-LRB-1/4-D6-A8-AS |
| | | From left to right | 529479 | MS4-LRB-1/4-D6-AS |
| | | From left to right | 529480 | MS4-LRB-1/4-D6-AS-BD |
| | | From right to left | 529481 | MS4-LRB-1/4-D6-AS-BD-Z |
| | | From right to left | 529482 | MS4-LRB-1/4-D6-VS-AS-Z |
| | 0.5 ... 12 bar | From left to right | 529483 | MS4-LRB-1/4-D7-A8-AS |
| | | From left to right | 529485 | MS4-LRB-1/4-D7-AS |
| From left to right | | 529486 | MS4-LRB-1/4-D7-AS-BD | |
| MS6-LRB... | | | | |
| G1/2 | 0.3 ... 4 bar | From left to right | 530322 | MS6-LRB-1/2-D5-AS |
| | | From left to right | 530320 | MS6-LRB-1/2-D5-A4-AS |
| | 0.3 ... 7 bar | From left to right | 530326 | MS6-LRB-1/2-D6-A4-AS |
| | | From left to right | 530328 | MS6-LRB-1/2-D6-AS |
| | | From left to right | 530329 | MS6-LRB-1/2-D6-AS-BD |
| | | From right to left | 530330 | MS6-LRB-1/2-D6-AS-BD-Z |
| | 0.5 ... 12 bar | From left to right | 530332 | MS6-LRB-1/2-D7-A4-AS |
| | | From left to right | 530334 | MS6-LRB-1/2-D7-AS |
| | | From left to right | 530335 | MS6-LRB-1/2-D7-AS-BD |

Ordering data – Modular product system

| Ordering table | | Grid dimension | [mm] | 40 | 62 | Conditions | Code | Enter code | |
|-------------------------------------|---|-----------------------------------|------|---------------|---------|-------------|-------------|--------------|--|
| Module no. | | 527692 | | 527665 | | | | | |
| Series | Standard | | | | | | MS | MS | |
| Size | 4 | | 6 | | | | ... | | |
| Function | Pressure regulator for manifold assembly | | | | | | -LRB | -LRB | |
| Pneumatic connection | Female thread G1/4 | – | | | [1] | | -1/4 | | |
| | – | Female thread G1/2 | | | [1] | | -1/2 | | |
| | Connecting plate G1/8 | – | | | | | -AGA | | |
| | Connecting plate G1/4 | Connecting plate G1/4 | | | | | -AGB | | |
| | Connecting plate G3/8 | Connecting plate G3/8 | | | | | -AGC | | |
| | – | Connecting plate G1/2 | | | | | -AGD | | |
| | – | Connecting plate G3/4 | | | | | -AGE | | |
| Pressure regulation range/actuation | 0.3 ... 4 bar, manually actuated | | | | | | -D5 | | |
| | 0.3 ... 7 bar, manually actuated | | | | | | -D6 | | |
| | 0.5 ... 12 bar, manually actuated | | | | | | -D7 | | |
| | – | 0.5 ... 16 bar, manually actuated | | | [1] [2] | | -D8 | | |
| Pressure gauge alternatives | MS pressure gauge | | | | | | | | |
| | Cover plate | | | | [3] | | -VS | | |
| | Adapter for EN pressure gauge 1/8, without pressure gauge | – | | | [4] | | -A8 | | |
| | Adapter for EN pressure gauge 1/4, without pressure gauge | | | | [4] | | -A4 | | |
| | Integrated pressure gauge, red/green scale | | | | [2] | | -RG | | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/O contact | | | | | [1] [5] [6] | | -AD7 | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/C contact | | | | | [1] [5] [6] | | -AD8 | |
| | Pressure sensor with status indicator, plug M8, window comparator, PNP, N/O contact | | | | | [1] [5] [6] | | -AD9 | |
| | Pressure sensor with status indicator, plug M8, window comparator, PNP, N/C contact | | | | | [1] [5] [6] | | -AD10 | |
| | Pressure sensor with LCD display, plug M12, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA | | | | | [1] [4] [5] | | -AD11 | |
| | Pressure sensor with LCD display, plug M8, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA | | | | | [1] [4] [5] | | -AD12 | |
| | Alternative pressure gauge scale | MS pressure gauge, bar | | | | | | | |
| psi | | | | | [7] | | -PSI | | |
| MPa | | | | | [8] | | -MPA | | |

[1] 1/4, 1/2, D8, Not with EU EX4 certification.
AD7 ... AD10,
AD11/AD12, DM1,
DM2, KD, E11,
WPM

[2] D8, RG, OS, KD, AS Not with rotary knob pressure gauge DM1, DM2.

[3] VS Must be selected if outlet direction Z is selected without alternative mounting position KD and without pressure output BC, BD, BE.
Must be selected if alternative mounting position KD is selected without outlet direction Z and without pressure output BC, BD, BE.

[4] A8, A4, AD11/ Not with outlet direction Z.
AD12 In combination with outlet direction Z only with alternative mounting position KD.

[5] AD7 ... AD10, Measuring range max. 10 bar.
AD11/AD12 Not with pressure regulation range D8.

[6] AD7 ... AD10 In combination with outlet direction Z only with pressure output BC, BD, BE or in combination with outlet direction Z only with alternative mounting position KD.

[7] PSI Not with pressure gauge alternatives VS, A8, A4, RG, AD7 ... AD10.
In combination with outlet direction Z only with pressure output BC, BD, BE.

[8] MPA Not with pressure gauge alternatives VS, A8, A4, AD7 ... AD10.
Not with alternative mounting position KD.
Not with rotary knob alternative DM1, DM2.
In combination with outlet direction Z only with pressure output BC, BD, BE.

Ordering data – Modular product system

| Ordering table | | 40 | 62 | Conditions | Code | Enter code |
|--|---|----|-----------------------------------|---------------|-------------|------------|
| Grid dimension | [mm] | | | | | |
| Secondary exhausting | With secondary exhausting | | | | | |
| | Without secondary exhausting | | | [2] | -OS | |
| Rotary knob alternative | None | | | | | |
| | Long rotary knob | | | [9] | -LD | |
| | Rotary knob pressure gauge, small | – | | [1] [9] [10] | -DM1 | |
| | – | | Rotary knob pressure gauge, large | [1] [9] [10] | -DM2 | |
| Alternative mounting position | None | | | | | |
| | Rotary knob underneath | | | [1] [2] [11] | -KD | |
| Locking option | None | | | | | |
| | Lockable using accessories | | | [2] | -AS | |
| | With integrated lock | | | [1] | -E11 | |
| Pressure output ($p_{max} = 10$ bar) | None | | | | | |
| | Angled outlet block QS-6 | – | | | -BC | |
| | Angled outlet block QS-8 | | Angled outlet block QS-8 | | -BD | |
| | – | | Angled outlet block QS-10 | | -BE | |
| Type of mounting | Without mounting bracket | | | | | |
| | Mounting bracket with knurled nut for regulator head | | | [12] [13] | -WR | |
| | Mounting bracket standard design | | | [14] [15] | -WP | |
| | Mounting bracket for hooking in service unit components | | | [1] [12] [14] | -WPM | |
| | Mounting bracket for large wall gap | | | [14] [16] | -WPB | |
| | Mounting bracket centrally at the rear (wall mounting top and bottom), connecting plates not required | | | [12] | -WB | |
| | Mounting bracket centrally at the rear (wall mounting top), connecting plates not required | – | | [12] | -WBM | |
| EU certification | None | | | | | |
| | II 2GD to EU Explosion Protection Directive (ATEX) | | | | -EX4 | |
| UL certification | None | | | | | |
| | cULus, ordinary location for Canada and USA | | | | -UL1 | |
| Outlet direction | Pressure output at the rear | | | | | |
| | Pressure output at the front (without angled outlet block, no pressure gauge) | | | | -Z | |

[9] LD, DM1, DM2 Not with locking option E11.

[10] DM1, DM2 Can only be selected in combination with pressure gauge alternatives VS, A4, AD7 ... AD10.

[11] KD Not with alternative pressure gauge scale MPa.

In combination with alternative pressure gauge scale PSI only with outlet direction Z and/or only with pressure output BC, BD, BE.

Not with mounting type WP, WPB.

In combination with mounting type WR, WPM, WB, WBM not with outlet direction Z.

Not with pressure gauge alternative RG.

In combination with pressure gauge alternatives A8, A4, only with outlet direction Z.

[12] WR, WPM, WB, WBM In combination with outlet direction Z not with alternative mounting position KD.

[13] WR

Only with outlet direction Z.

Not with long rotary knob LD or rotary knob alternative DM2.

[14] WP, WPM, WPB Only with connecting plate AGA, AGB, AGC, AGD, AGE.

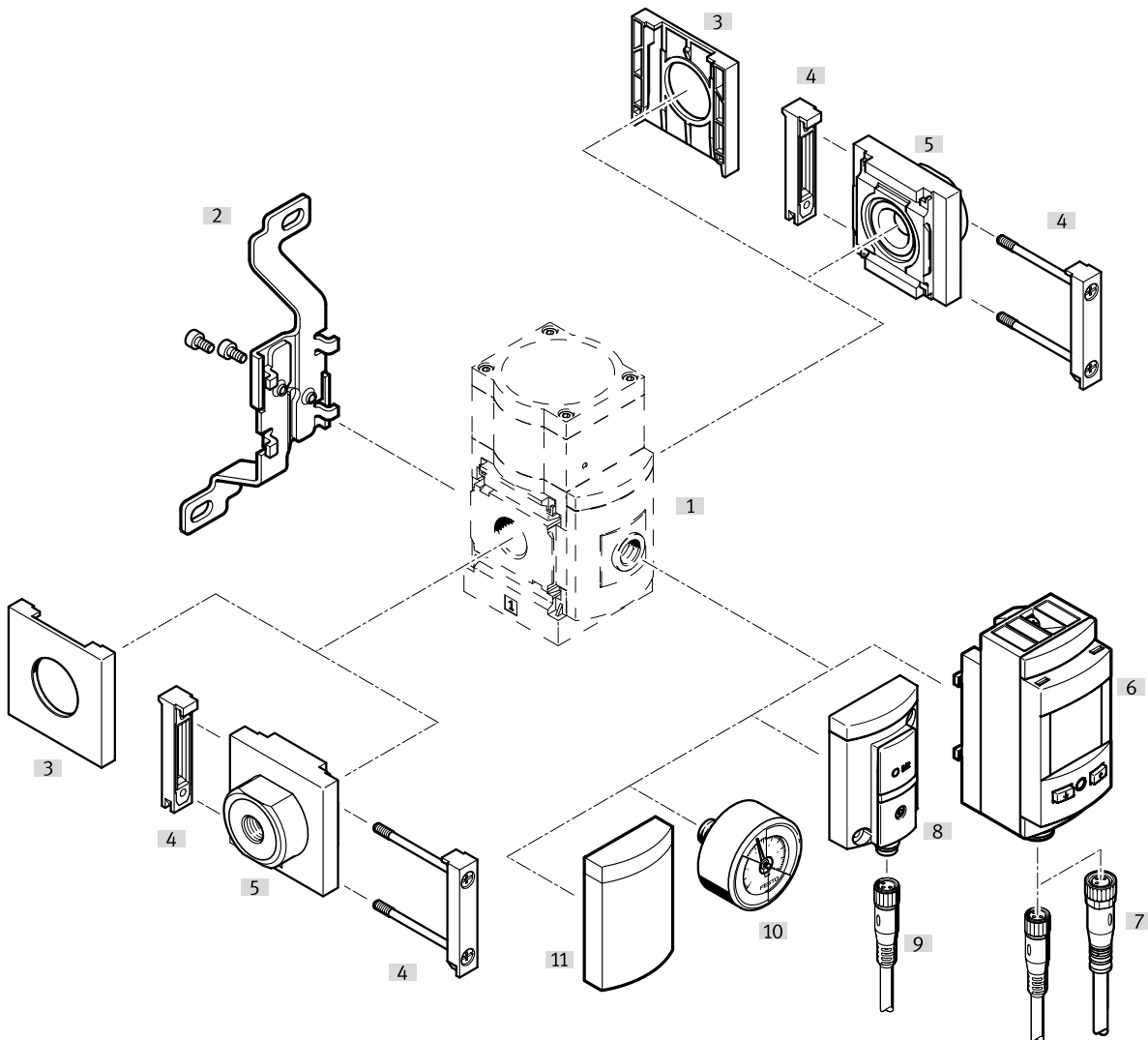
[15] WP Only with outlet direction Z and/or only with pressure output BC, BD, BE.

[16] WPB Not with outlet direction Z.

Not with pressure output BC, BD, BE.

Peripherals overview

Precision pressure regulator MS6-LRP



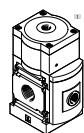
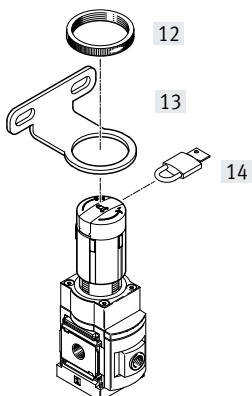
Note

Additional accessories:

- Module connectors for combination with size MS4/MS6 or size MS9
→ Internet: amv, rmv, armv
- Adapters for mounting on profiles
→ Internet: ipm-80, ipm-40-80, ipm-80-80

Manually actuated

Pneumatically actuated



Peripherals overview

| Mounting attachments and accessories | | Individual device | | Combination | | → Page/Internet |
|--------------------------------------|---|--------------------------|-----------------------|--------------------------|-----------------------|-----------------|
| | | Without connecting plate | With connecting plate | Without connecting plate | With connecting plate | |
| [1] | Adapter for EN pressure gauge 1/8, 1/4 A8/A4 | ■ | ■ | ■ | ■ | 62 |
| [2] | Mounting bracket MS6-WB | ■ | ■ | – | – | ms6-wb |
| [3] | Cover cap MS6-END | ■ | – | ■ | – | ms6-end |
| [4] | Module connector MS6-MV | – | ■ | ■ | ■ | ms6-mv |
| [5] | Connecting plate SET MS6-AG... | – | ■ | – | ■ | ms6-ag |
| | Connecting plate SET MS6-AQ... | – | ■ | – | ■ | ms6-aq |
| [6] | Pressure sensor with LCD display AD11/AD12 | ■ | ■ | ■ | ■ | 62 |
| [7] | Connecting cable NEBU-M8...-LE4/NEBU-M12...-LE4 | ■ | ■ | ■ | ■ | 102 |
| [8] | Pressure sensor without display AD7 ... AD10 | ■ | ■ | ■ | ■ | 62 |
| [9] | Connecting cable NEBU-M8...-LE3 | ■ | ■ | ■ | ■ | 102 |
| [10] | Precision pressure gauge A8M/MAP | ■ | ■ | ■ | ■ | 62, 102 |
| [11] | Cover plate VS | ■ | ■ | ■ | ■ | 62 |
| [12] | Knurled nut (included in the scope of delivery) MS-LR | ■ | ■ | – | – | – |
| [13] | Mounting bracket MS6-WR | ■ | ■ | – | – | ms6-wr |
| [14] | Padlock LRVS-D | ■ | ■ | ■ | ■ | 102 |
| – | Mounting bracket MS6-WP/WPB/WPE/WPM | – | ■ | ■ | ■ | ms6-wp |

Type codes

| | | |
|-------------|---|--|
| 001 | Series | |
| MS | MS series | |
| 002 | Size | |
| 6 | Grid dimension 62 mm | |
| 003 | Function | |
| LRP | Precision pressure regulator | |
| 004 | Pneumatic connection | |
| 1/4 | Female thread G1/4 | |
| 3/8 | Female thread G3/8 | |
| 1/2 | Female thread G1/2 | |
| AGB | Sub-base G1/4 | |
| AGC | Sub-base G3/8 | |
| AGD | Sub-base G1/2 | |
| AGE | Sub-base G3/4 | |
| 005 | Pressure regulation range | |
| D2 | 0.05 ... 0.7 bar | |
| D4 | 0.05 ... 2.5 bar | |
| D5 | 0.1 ... 4 bar | |
| D7 | 0.1 ... 12 bar | |
| P0 | Max. 12 bar, pneumatically actuated (pressure range determined by pilot regulator) | |
| 006 | Pressure gauge alternatives | |
| A4 | Adapter for EN pressure gauge 1/4, without pressure gauge | |
| A8 | Adapter for EN pressure gauge 1/8, without pressure gauge | |
| A8M | Adapter for EN pressure gauge 1/8, with precision pressure gauge | |
| AD7 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O | |
| AD8 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/C | |
| AD9 | Pressure sensor with switching display, M8 plug, window comparator, PNP, N/O | |
| AD10 | Pressure sensor with operational status indicator, M8 plug, window comparator, PNP, N/C | |
| AD11 | Pressure sensor with LCD display, M12 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA | |
| AD12 | Pressure sensor with LCD display, M8 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA | |
| VS | Cover plate | |

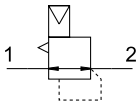
| | | |
|------------|---|--|
| 007 | Rotary knob alternative | |
| | None | |
| LD | Long rotary knob | |
| 008 | Alternative mounting position | |
| | None | |
| KD | Rotary knob underneath | |
| 009 | Lockability | |
| | None | |
| AS | Can be locked using accessories | |
| E11 | With integrated lock | |
| 010 | Type of mounting | |
| | Without mounting bracket | |
| WR | Mounting bracket with knurled nut on regulator knob | |
| WP | Mounting bracket basic design | |
| WPM | Mounting bracket for hooking in service unit components | |
| WB | Mounting centrally at rear (wall mounting top and bottom), connecting plates not required | |
| 011 | EU certification | |
| | None | |
| EX4 | II 2GD | |
| 012 | UL certification | |
| | None | |
| UL1 | cULus ordinary location for Canada and USA | |
| 013 | Flow direction | |
| | Flow direction from left to right | |
| Z | Flow direction from right to left | |

Datasheet





Pressure regulation range/actuation, manually actuated



Pressure regulation range/actuation, pneumatically actuated



The precision pressure regulator is suitable for sensitive applications requiring a pressure hysteresis of 0.02 bar. The output pressure p2 can be set within the pressure regulation range either manually using the rotary knob or pneumatically via pilot pressure p12 by an external pilot regulator (where possible using a precision pressure regulator). When the input pres-

-  Flow rate
800 ... 5000 l/min
-  Temperature range
-10 ... +60°C
-  Operating pressure
1 ... 14 bar
-  www.festo.com



sure p1 is switched off, the output pressure p2 is exhausted via port 3 (secondary exhausting).

- Good regulation characteristics with minimal hysteresis and input pressure compensation
- High flow rate performance with minimal pressure drop
- High secondary exhausting for ultra-fast reaction times
- Actuator lock to protect the set values from being adjusted
- Four pressure regulation ranges: 0.05 ... 0.7 bar, 0.05 ... 2.5 bar, 0.1 ... 4 bar and 0.1 ... 12 bar
- Optional pressure sensor
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

| General technical data | | |
|---|------------|---|
| Size | | MS6 |
| Pneumatic connection 1, 2 | | |
| Female thread | | G1/4, G3/8 or G1/2 |
| Connecting plate | [AG...] | G1/4, G3/8, G1/2 or G3/4 |
| | [AQ...] | 1/4 NPT, 3/8 NPT, 1/2 NPT or 3/4 NPT |
| Pneumatic connection 3 (secondary exhausting) | | G1/4 |
| Pilot air port 12 | | G1/8 (MS6-LRP-...-PO) |
| Design | | Piloted precision diaphragm regulator |
| Regulator function | | Output pressure constant, with secondary exhausting |
| Type of mounting | | Via accessories In-line installation Front panel mounting |
| Mounting position | | Any |
| Actuator lock | | Rotary knob with latch Rotary knob with latch, can be locked using accessories Rotary knob with integrated lock |
| Pressure regulation range/actuation ¹⁾ | [D2] [bar] | 0.05 ... 0.7, manually actuated |
| | [D4] [bar] | 0.05 ... 2.5, manually actuated |
| | [D5] [bar] | 0.1 ... 4, manually actuated |
| | [D7] [bar] | 0.1 ... 12, manually actuated (0.1 ... 10 with pressure sensor or with UL certification) |
| | [PO] [bar] | 0.1 ... 12, pneumatically actuated (0.1 ... 10 with pressure sensor or with UL certification) |
| Max. pressure hysteresis | [bar] | 0.02 |
| Pressure indication | | Via pressure sensor for indicating the output pressure and electrical output via LCD display Via pressure sensor for indicating the output pressure and electrical output Via precision pressure gauge for indicating the output pressure Prepared for G1/8 Prepared for G1/4 |

1) [D2]/[D4]/[D5]/[D7]: input pressure p1 ≥ output pressure p2 + 1 bar.
[PO]: pilot pressure p12 = output pressure p2 + max. 0.5 bar

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

Datasheet

| Flow rates | | | | | |
|---|------|--------------------------|--------------------------|--------------------------|---------------------------|
| Pressure regulation range | | [D2]: 0.05 ... 0.7 bar | [D4]: 0.05 ... 2.5 bar | [D5]: 0.1 ... 4 bar | [D7]/[P0]: 0.1 ... 12 bar |
| Standard nominal flow rate q_{nN} [l/min] | | | | | |
| $q_{nN} 1 \rightarrow 2$ | G1/4 | 800 ¹⁾ | 1100 ²⁾ | 1400 ³⁾ | 3000 ⁴⁾ |
| | G3/8 | 1100 ¹⁾ | 1400 ²⁾ | 1700 ³⁾ | 3300 ⁴⁾ |
| | G1/2 | 1600 ¹⁾ | 2300 ²⁾ | 3000 ³⁾ | 5000 ⁴⁾ |
| Secondary exhaust flow rate [l/min] | | | | | |
| $q_{n2} \rightarrow 3$ | | ≥ 220 ⁵⁾ | ≥ 450 ⁶⁾ | ≥ 650 ⁷⁾ | ≥ 900 ⁸⁾ |

- 1) Measured at $p_1 = 10$ bar and $p_2 = 0.5$ bar, $\Delta p = 0.1$ bar
 2) Measured at $p_1 = 10$ bar and $p_2 = 1.5$ bar, $\Delta p = 0.1$ bar
 3) Measured at $p_1 = 10$ bar and $p_2 = 2.5$ bar, $\Delta p = 0.1$ bar
 4) Measured at $p_1 = 10$ bar and $p_2 = 6.0$ bar, $\Delta p = 0.1$ bar

- 5) Measured at $p_1 = 10$ bar and $p_2 = 0.7$ bar, $\Delta p_2 = 0.1$ bar
 6) Measured at $p_1 = 10$ bar and $p_2 = 2.5$ bar, $\Delta p_2 = 0.1$ bar
 7) Measured at $p_1 = 10$ bar and $p_2 = 4.0$ bar, $\Delta p_2 = 0.1$ bar
 8) Measured at $p_1 = 10$ bar and $p_2 = 6.0$ bar, $\Delta p_2 = 0.1$ bar

| Operating and environmental conditions | |
|--|---|
| Operating pressure [bar] | 1 ... 14 (1 ... 10) ¹⁾ |
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] |
| | Inert gases |
| Note on the operating/pilot medium | Lubricated operation not possible |
| Ambient temperature [°C] | -10 ... +60 (0 ... +50) ²⁾ |
| Temperature of medium [°C] | -10 ... +60 (0 ... +50) ²⁾ |
| Storage temperature [°C] | -10 ... +60 |
| Corrosion resistance class CRC ³⁾ | 2 |
| UL certification ⁴⁾ | c UL us - Recognized (OL) |

- 1) Value in brackets applies to MS6-LRP with UL certification.
 2) Value in brackets applies to MS6-LRP with pressure sensor.
 3) More information www.festo.com/x/topic/crc
 4) More information: www.festo.com/catalogue/ms6-lrp → Support/Downloads.

| ATEX | |
|--|---|
| EU certification | [EX4] |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T6 Gb X |
| ATEX category for dust | II 2D |
| Type of (ignition) protection for dust | Ex h IIIC T60°C Db X |
| Explosion ambient temperature | -10°C ≤ Ta ≤ +60°C |
| Explosion protection certification outside the EU | EPL Db (GB) |
| | EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) ¹⁾ | To UK regulations for explosions |

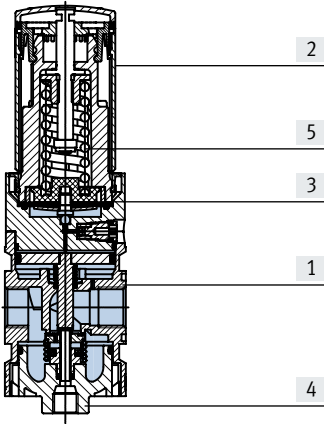
- 1) More information: www.festo.com/catalogue/ms6-lrp → Support/Downloads.

| Weight [g] | |
|--|------|
| Precision pressure regulator | 1000 |
| Precision pressure regulator with rotary knob with integrated lock | 1120 |

Datasheet

Materials

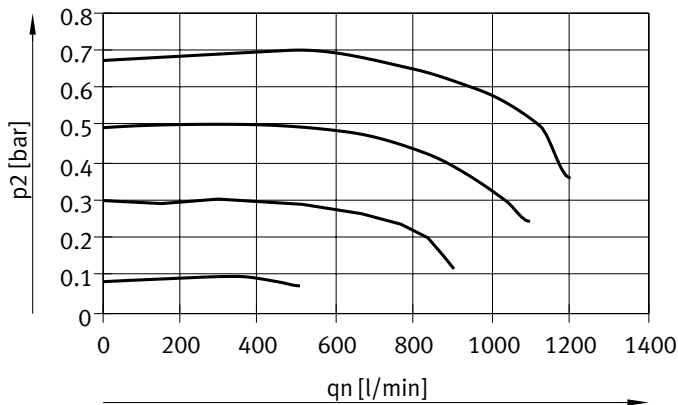
Sectional view



| Precision pressure regulator | | |
|------------------------------|----------------------------------|--------------------|
| [1] | Housing | Die-cast aluminium |
| [2] | Rotary knob | PA, POM |
| | Rotary knob with integrated lock | Aluminium |
| [3] | Diaphragms | NBR |
| [4] | Bottom cover | PC |
| [5] | Springs | Steel |
| - | Seals | NBR |
| | Note on materials | RoHS-compliant |
| | PWIS conformity | VDMA24364-B1/B2-L |

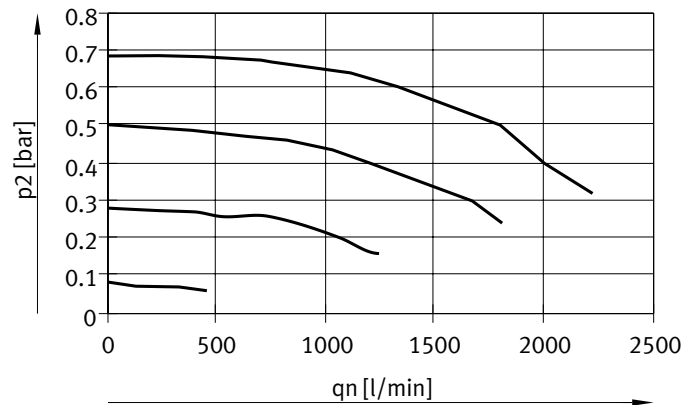
Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 10$ bar)

MS6-LRP-1/4-D2



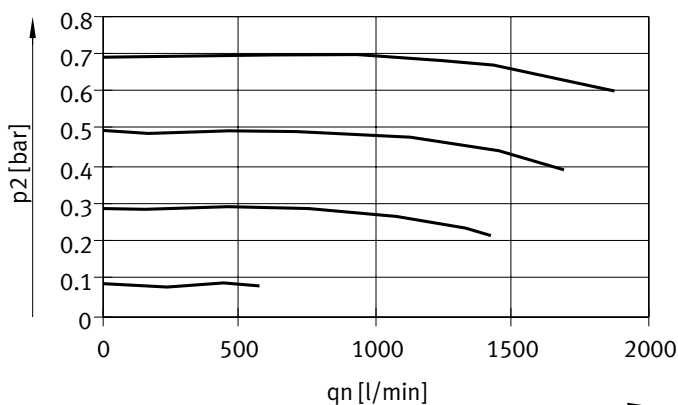
— [D2]: 0.05 ... 0.7 bar

MS6-LRP-3/8-D2



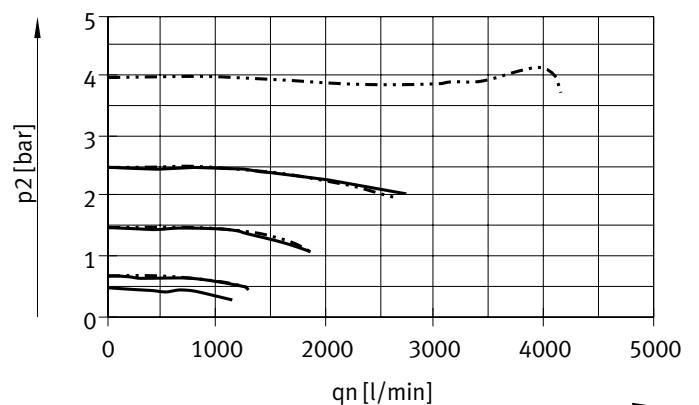
— [D2]: 0.05 ... 0.7 bar

MS6-LRP-1/2-D2



— [D2]: 0.05 ... 0.7 bar

MS6-LRP-1/4-D4/D5



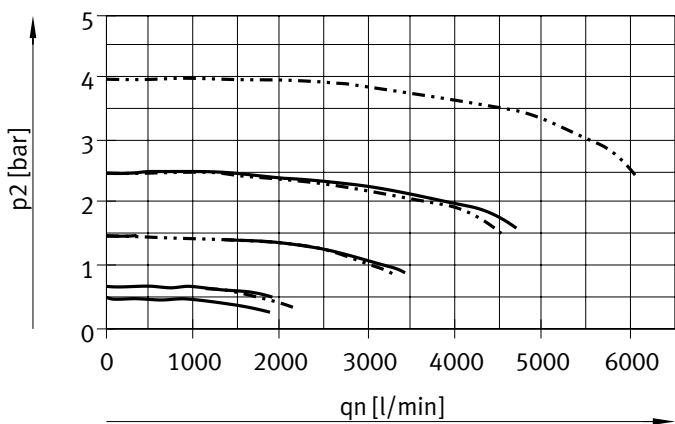
— [D4]: 0.05 ... 2.5 bar

- - - [D5]: 0.1 ... 4 bar

Datasheet

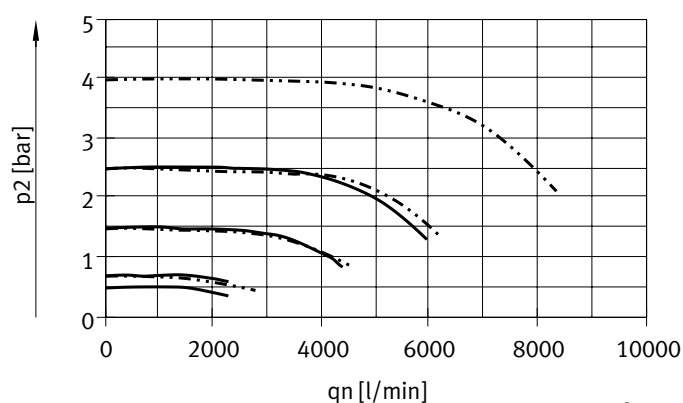
Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 10$ bar)

MS6-LRP-3/8-D4/D5



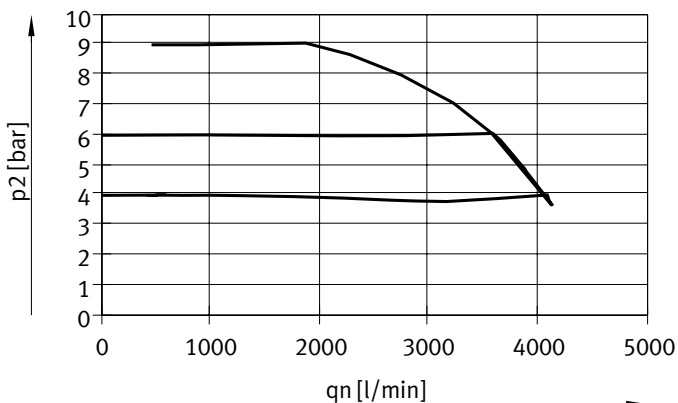
— [D4]: 0.05 ... 2.5 bar
 - · - · - [D5]: 0.1 ... 4 bar

MS6-LRP-1/2-D4/D5



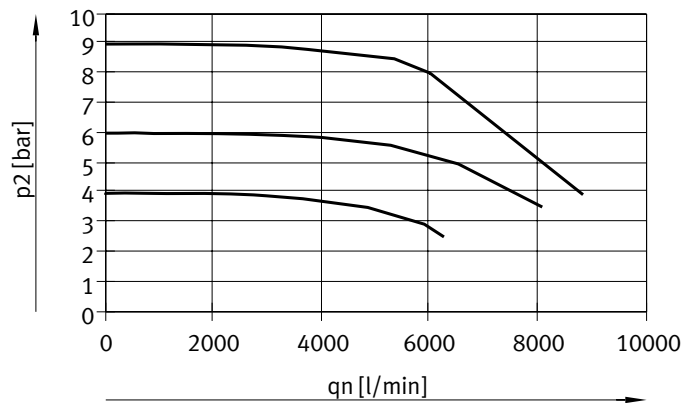
— [D4]: 0.05 ... 2.5 bar
 - · - · - [D5]: 0.1 ... 4 bar

MS6-LRP-1/4-D7/PO



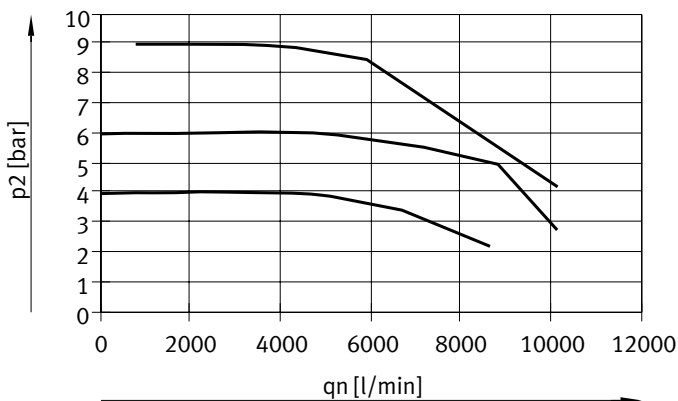
— [D7]/[PO]: 0.1 ... 12 bar

MS6-LRP-3/8-D7/PO



— [D7]/[PO]: 0.1 ... 12 bar

MS6-LRP-1/2-D7/PO

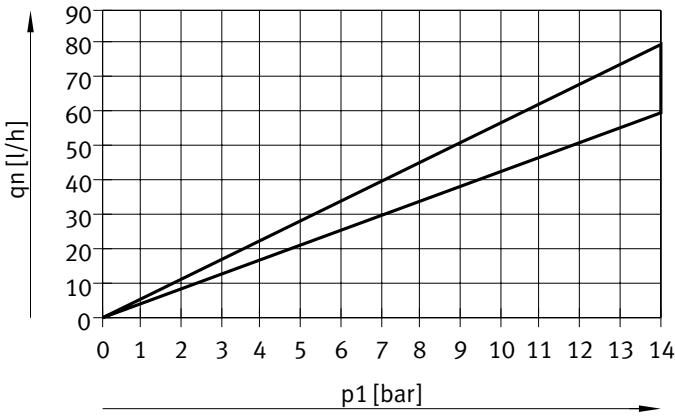


— [D7]/[PO]: 0.1 ... 12 bar

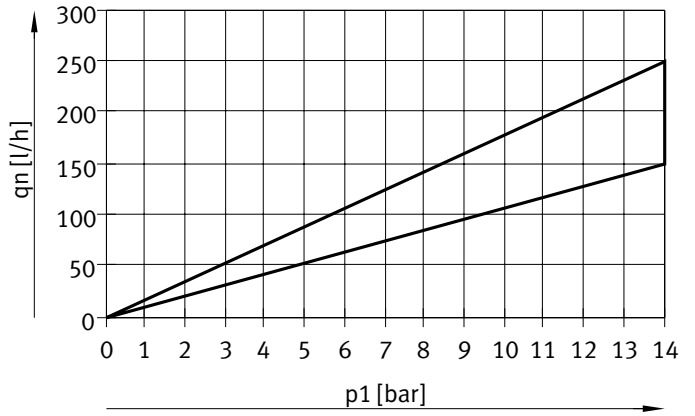
Datasheet

Internal air consumption q_n as a function of input pressure p_1

MS6-LRP...-D2/D4



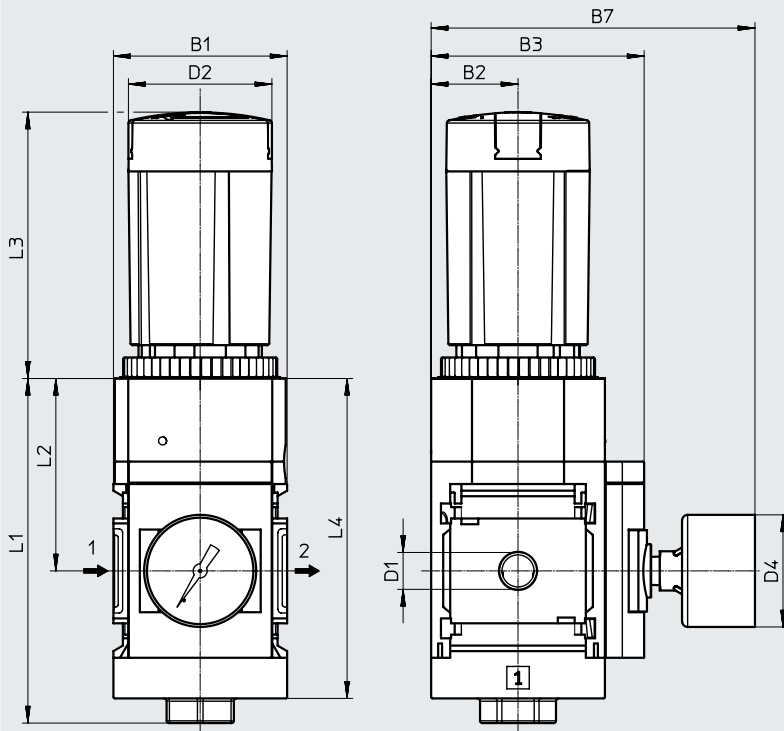
MS6-LRP...-D5/D7/PO



Dimensions

Download CAD data → www.festo.com

- [D2]/[D4]/[D5]/[D7] Pressure regulation range, manually actuated
- [A8M] Adapter for EN pressure gauge 1/8, with precision pressure gauge
- [AS] Rotary knob with latch, can be locked using accessories



→ Flow direction

| Type | B1 | B2 | B3 | B7 | D1 | D2 ∅ | D4 ∅ | L1 | L2 | L3 | L4 |
|--------------------------------|----|----|----|-----|------|---------|---------|-----|----|------|-----|
| MS6-LRP-1/4-D2/D4/D5/D7-A8M-AS | 62 | 31 | 76 | 116 | G1/4 | 51,2 | 40 | 123 | 68 | 95,5 | 114 |
| MS6-LRP-3/8-D2/D4/D5/D7-A8M-AS | | | | | G3/8 | | | | | | |
| MS6-LRP-1/2-D2/D4/D5/D7-A8M-AS | | | | | G1/2 | | | | | | |

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

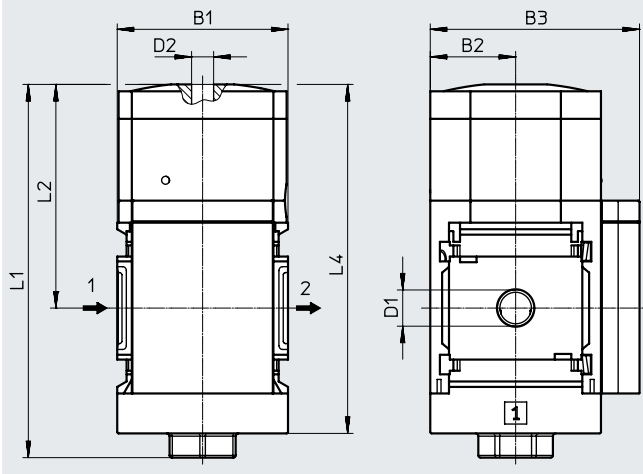
Datasheet

Dimensions

Download CAD data → www.festo.com

[PO] Pressure regulation range, pneumatically actuated

[VS] Cover plate



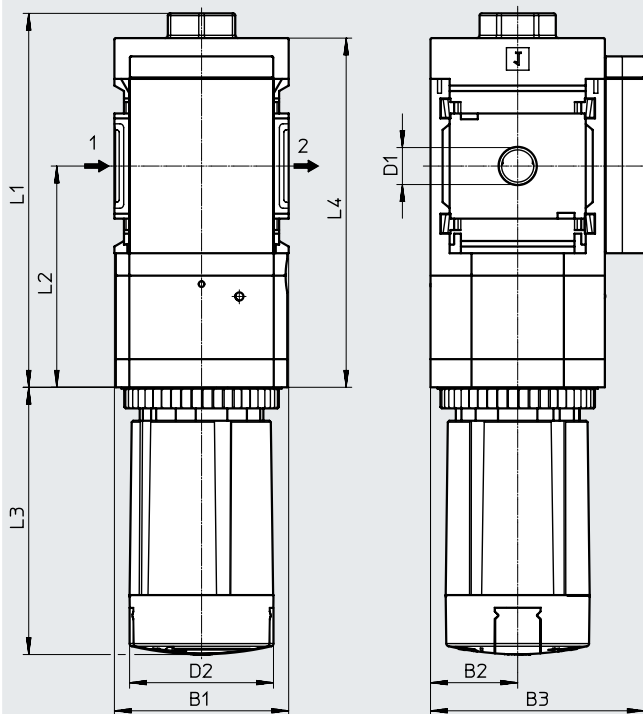
| Type | B1 | B2 | B3 | D1 | D2 | L1 | L2 | L4 |
|-------------------|----|----|----|------|------|-----|----|-----|
| MS6-LRP-1/4-PO-VS | 62 | 31 | 76 | G1/4 | G1/8 | 136 | 81 | 127 |
| MS6-LRP-3/8-PO-VS | | | | G3/8 | | | | |
| MS6-LRP-1/2-PO-VS | | | | G1/2 | | | | |

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

Dimensions – Alternative mounting position

Download CAD data → www.festo.com

[KD] Rotary knob underneath



| Type | B1 | B2 | B3 | D1 | D2 ∅ | L1 | L2 | L3 | L4 |
|-------------------|----|----|----|------|---------|-----|----|------|-----|
| MS6-LRP-1/4-...KD | 62 | 31 | 76 | G1/4 | 51.2 | 133 | 78 | 95.1 | 124 |
| MS6-LRP-3/8-...KD | | | | G3/8 | | | | | |
| MS6-LRP-1/2-...KD | | | | G1/2 | | | | | |

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

Datasheet

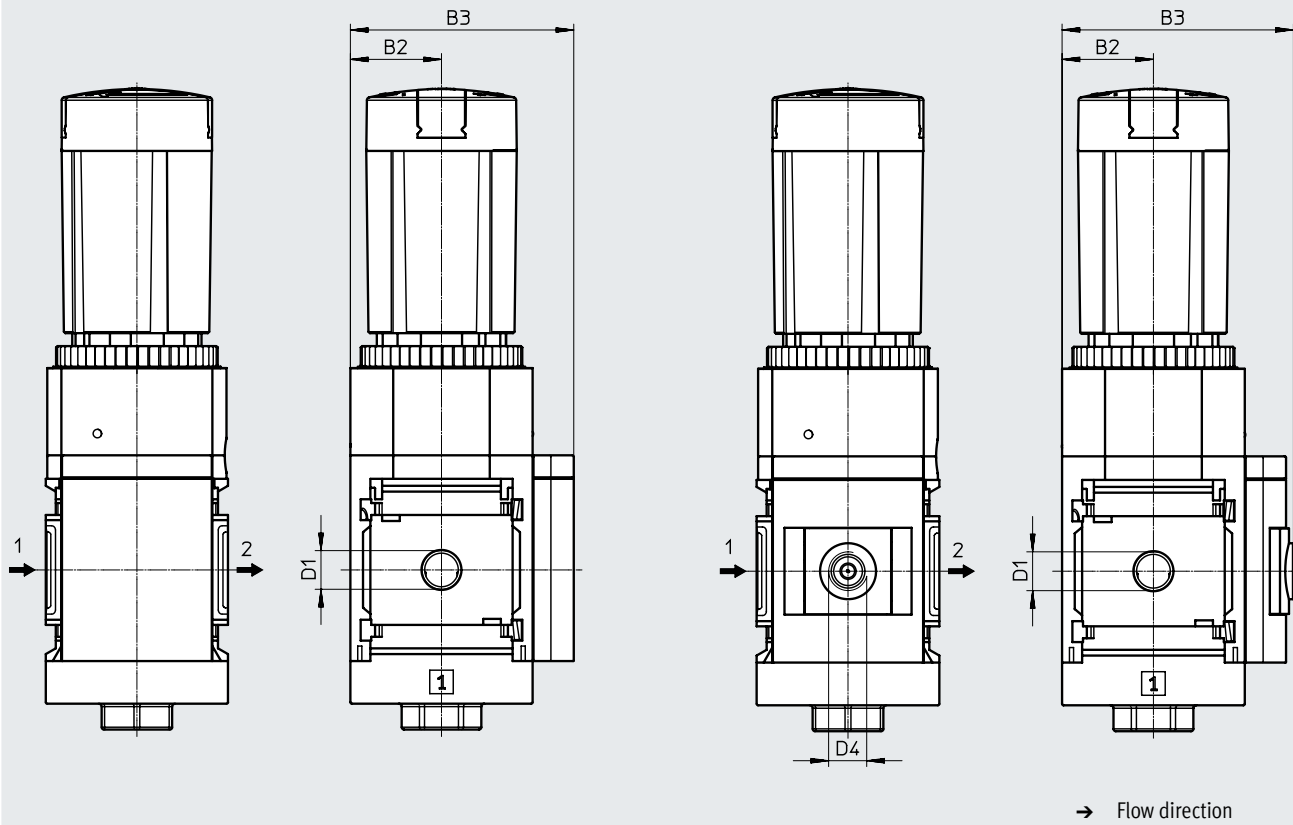
Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

[VS] Cover plate

[A8] Adapter for EN pressure gauge 1/8, without pressure gauge

[A4] Adapter for EN pressure gauge 1/4, without pressure gauge



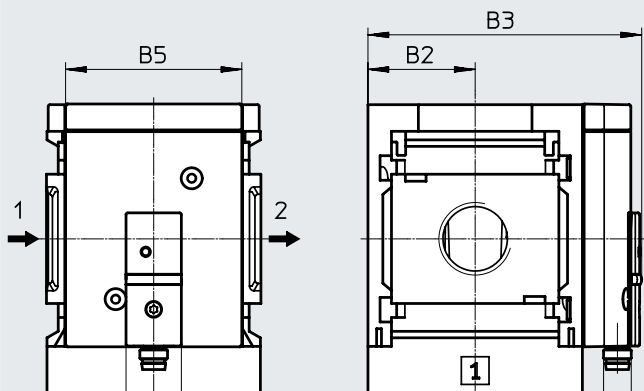
| Type | B2 | B3 | D1 | D4 |
|--------------------|----|------|------|------|
| MS6-LRP-1/4-...-VS | 31 | 76 | G1/4 | - |
| MS6-LRP-3/8-...-VS | | | G3/8 | |
| MS6-LRP-1/2-...-VS | | | G1/2 | |
| MS6-LRP-1/4-...-A8 | 31 | 78.5 | G1/4 | G1/8 |
| MS6-LRP-3/8-...-A8 | | | G3/8 | |
| MS6-LRP-1/2-...-A8 | | | G1/2 | |
| MS6-LRP-1/4-...-A4 | 31 | 78.5 | G1/4 | G1/4 |
| MS6-LRP-3/8-...-A4 | | | G3/8 | |
| MS6-LRP-1/2-...-A4 | | | G1/2 | |

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

Datasheet

[AD7 ... 10] Pressure sensor without LCD display (switching status indicator only)

Datasheets → Internet: sde5



Variant AD7:
SDE5-D10-O-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/O contact

Variant AD9:
SDE5-D10-O3-...-P-M8 with 3-pin plug M8x1, window comparator, 1 switching output PNP, N/O contact

Variant AD8:
SDE5-D10-C-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/C contact

Variant AD10:
SDE5-D10-C3-...-P-M8 with 3-pin plug M8x1, window comparator, 1 switching output PNP, N/C contact

→ Flow direction

| Type | B2 | B3 | B5 | B6 | D6 |
|------------------------------|----|------|----|----|------|
| MS6-LRP-...-AD7/AD8/AD9/AD10 | 31 | 79.1 | 51 | 16 | M8x1 |

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

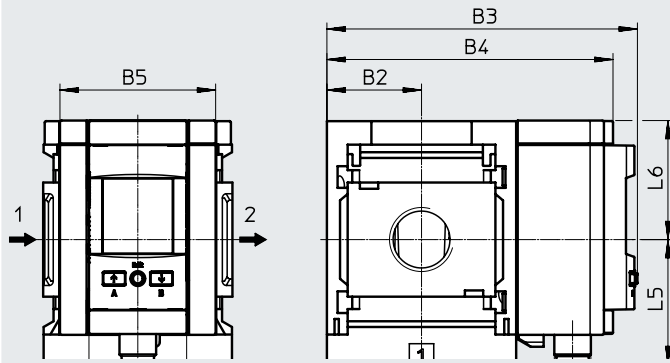
Datasheet

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

[AD11/AD12] Pressure sensor with LCD display

Datasheets → Internet: spau



Variant AD11:
 SPAU-P10R-MS-L-PNLK-M12 with
 plug M12, 4-pin, IO-Link®, PNP,
 NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA

Variant AD12:
 SPAU-P10R-MS-L-PNLK-M8 with plug
 M8, 4-pin, IO-Link®, PNP, NPN,
 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA

→ Flow direction

| Type | B2 | B3 | B4 | B5 | B6 | D6 | L5 | L6 |
|------------------|----|-------|------|----|----|-------|------|----|
| MS6-LRP-...-AD11 | 31 | 101.8 | 93.7 | 51 | 32 | M12x1 | 41.2 | 39 |
| MS6-LRP-...-AD12 | 31 | 101.8 | 93.7 | 51 | 32 | M8x1 | 37.9 | 39 |

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

Datasheet

Dimensions – Rotary knob

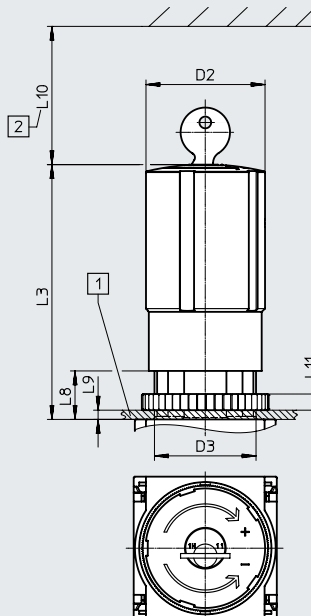
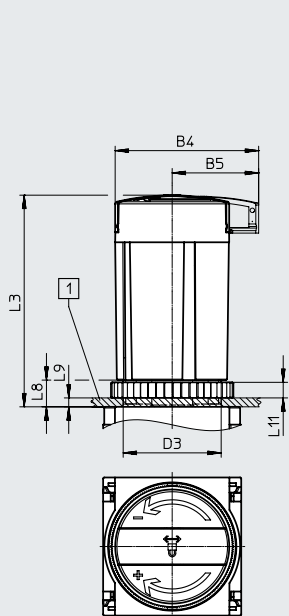
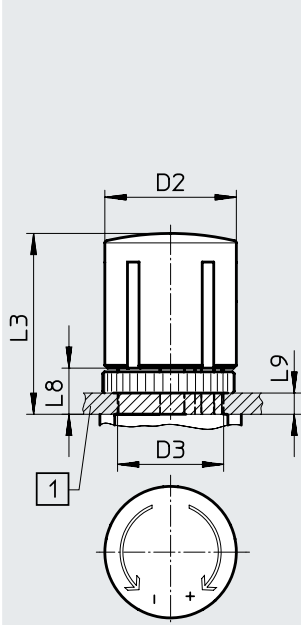
Download CAD data → www.festo.com

For control panel installation

[] Rotary knob with latch

[AS] Rotary knob with latch, can be locked using accessories

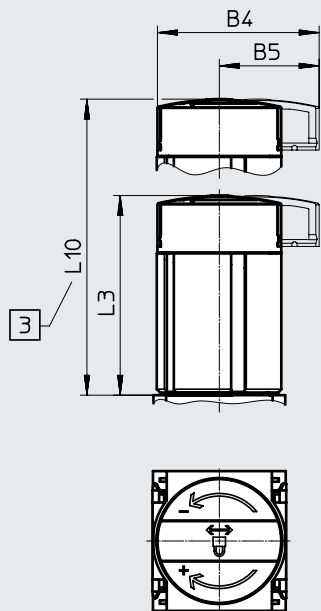
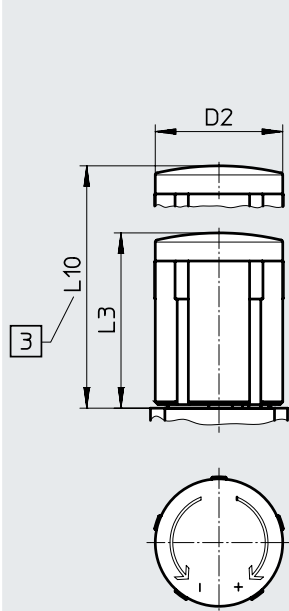
[E11] Rotary knob with integrated lock



- [1] Max. control panel thickness
- [2] Installation dimension

[LD] Rotary knob, long, with latch

[LD-AS] Rotary knob, long, with latch, can be locked using accessories



- [3] For pressure adjustment: fully pull out telescopic rotary knob

| Type | B4 | B5 | D2 | D3 | L3 | L8 | L9 | L10 |
|------------------|------|------|------|-------|------|----|----|-------|
| MS6-LRP... | - | - | 51.2 | M44x1 | 86 | 21 | 14 | - |
| MS6-LRP...-AS | 64.4 | 38.8 | | | 95.1 | 12 | 5 | |
| MS6-LRP...-E11 | - | - | | | 110 | 21 | 14 | |
| MS6-LRP...-LD | - | - | 51.2 | - | 86 | - | - | 139 |
| MS6-LRP...-LD-AS | 64.4 | 38.8 | | | 95.5 | - | - | 148.5 |

Datasheet

| Ordering data | | | | |
|------------------------|---------------------------|--------------------|----------|-------------------|
| Pneumatic connection 1 | Pressure regulation range | Flow direction | Part no. | Type |
| MS6-LRP... | | | | |
| G1/4 | 0.05 ... 0.7 bar | From left to right | 538004 | MS6-LRP-1/4-D2-A8 |
| | 0.05 ... 2.5 bar | From left to right | 538006 | MS6-LRP-1/4-D4-A8 |
| | 0.1 ... 4 bar | From left to right | 538008 | MS6-LRP-1/4-D5-A8 |
| | 0.1 ... 12 bar | From left to right | 538010 | MS6-LRP-1/4-D7-A8 |
| G3/8 | 0.05 ... 0.7 bar | From left to right | 538012 | MS6-LRP-3/8-D2-A8 |
| | 0.05 ... 2.5 bar | From left to right | 538014 | MS6-LRP-3/8-D4-A8 |
| | 0.1 ... 4 bar | From left to right | 538016 | MS6-LRP-3/8-D5-A8 |
| | 0.1 ... 12 bar | From left to right | 538018 | MS6-LRP-3/8-D7-A8 |
| G1/2 | 0.05 ... 0.7 bar | From left to right | 538020 | MS6-LRP-1/2-D2-A8 |
| | 0.05 ... 2.5 bar | From left to right | 538022 | MS6-LRP-1/2-D4-A8 |
| | 0.1 ... 4 bar | From left to right | 538024 | MS6-LRP-1/2-D5-A8 |
| | 0.1 ... 12 bar | From left to right | 538026 | MS6-LRP-1/2-D7-A8 |

Ordering data – Modular product system

| Ordering table | | Conditions | Code | Enter code |
|-------------------------------------|---|------------|--------------|------------|
| Grid dimension [mm] | 62 | | | |
| Module no. | 538028 | | | |
| Series | Standard | | MS | MS |
| Size | 6 | | 6 | 6 |
| Function | Precision pressure regulator | | -LRP | -LRP |
| Pneumatic connection | Female thread G1/4 | [1] | -1/4 | |
| | Female thread G3/8 | [1] | -3/8 | |
| | Female thread G1/2 | [1] | -1/2 | |
| | Connecting plate G1/4 | | -AGB | |
| | Connecting plate G3/8 | | -AGC | |
| | Connecting plate G1/2 | | -AGD | |
| | Connecting plate G3/4 | | -AGE | |
| | Connecting plate NPT1/4 | [1] | -AQN | |
| | Connecting plate NPT3/8 | [1] | -AQP | |
| | Connecting plate NPT1/2 | [1] | -AQR | |
| | Connecting plate NPT3/4 | [1] | -AQS | |
| Pressure regulation range/actuation | 0.05 ... 0.7 bar, manually actuated | | -D2 | |
| | 0.05 ... 2.5 bar, manually actuated | | -D4 | |
| | 0.1 ... 4 bar, manually actuated | | -D5 | |
| | 0.1 ... 12 bar, manually actuated | | -D7 | |
| | 0.1 ... 12 bar, pneumatically actuated (pressure range determined by pilot regulator) | [1] [2] | -PO | |
| Pressure gauge alternatives | Cover plate | | -VS | |
| | Adapter for EN pressure gauge 1/8, without pressure gauge | | -A8 | |
| | Adapter for EN pressure gauge 1/8, with precision pressure gauge | | -A8M | |
| | Adapter for EN pressure gauge 1/4, without pressure gauge | | -A4 | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/O contact | [1] [4] | -AD7 | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/C contact | [1] [4] | -AD8 | |
| | Pressure sensor with status indicator, plug M8, window comparator, PNP, N/O contact | [1] [4] | -AD9 | |
| | Pressure sensor with status indicator, plug M8, window comparator, PNP, N/C contact | [1] [4] | -AD10 | |
| | Pressure sensor with LCD display, plug M12, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA | [3] | -AD11 | |
| | Pressure sensor with LCD display, plug M8, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA | [3] | -AD12 | |

[1] 1/4, 3/8, 1/2, Not with EU EX4 certification.
 AQN, AQP, AQR,
 AQS, PO,
 AD7 ... AD10, KD,
 E11, WPM

[2] PO Not with rotary knob alternative LD.
 Not with locking options AS, E11.
 Not with mounting type WR.

[3] AD11/AD12 Measuring range max. 10 bar.

Not with pressure regulation range/actuation D2, D4.

[4] AD7 ... AD10 Measuring range max. 10 bar.

Not with pressure regulation range/actuation D2.

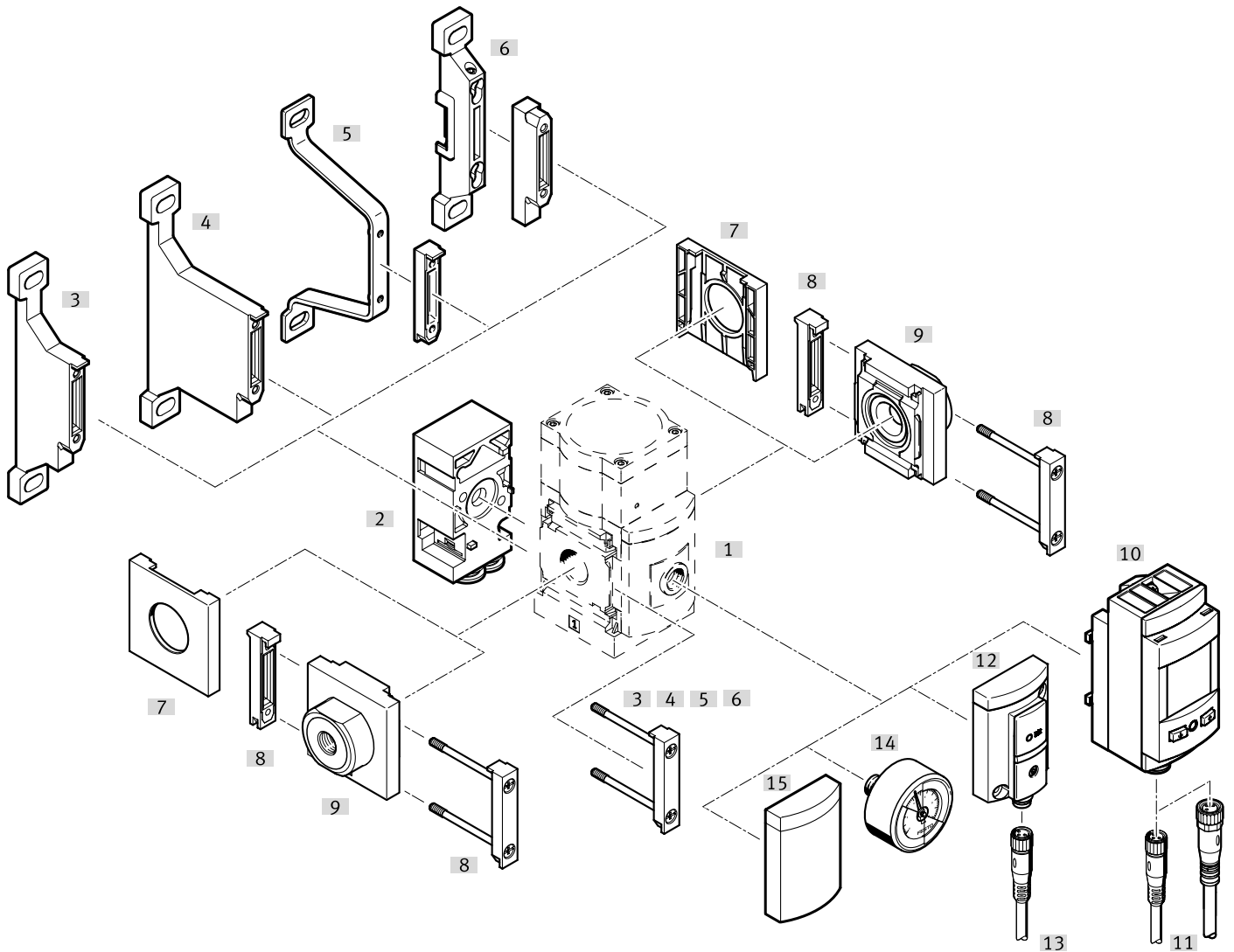
Ordering data – Modular product system

| Ordering table | | Grid dimension | Conditions | Code | Enter code |
|-------------------------------|---|----------------|------------|-------------|------------|
| | | [mm] 62 | | | |
| Rotary knob alternative | None | | | | |
| | Long rotary knob | | [5] | -LD | |
| Alternative mounting position | None | | | | |
| | Rotary knob underneath | | [1] [6] | -KD | |
| Locking option | None | | | | |
| | Lockable using accessories | | | -AS | |
| | With integrated lock | | [1] | -E11 | |
| Type of mounting | Without mounting bracket | | | | |
| | Mounting bracket with knurled nut for regulator head | | [7] | -WR | |
| | Mounting bracket standard design | | [8] | -WP | |
| | Mounting bracket for hooking in service unit components | | [1] [8] | -WPM | |
| | Mounting bracket centrally at the rear (wall mounting top and bottom), connecting plates not required | | | -WB | |
| EU certification | None | | | | |
| | II 2GD to EU Explosion Protection Directive (ATEX) | | | -EX4 | |
| UL certification | None | | | | |
| | cULus, ordinary location for Canada and USA | | | -UL1 | |
| Flow direction | Flow direction from left to right | | | | |
| | Flow direction from right to left | | | -Z | |

- [5] LD Not with locking option E11.
 [6] KD Not with mounting type WP.
 [7] WR Not with rotary knob alternative LD.
 [8] WP, WPM Only with connecting plate AGB, AGC, AGD, AGE, AQN, AQP, AQR or AQS.

Peripherals overview

Precision pressure regulator MS6-LRPB with pressure output at the rear



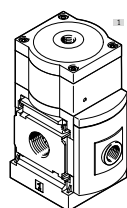
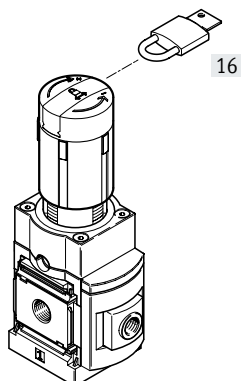
Note

Additional accessories:

- Module connectors for combination with size MS4/MS6 or size MS9
→ Internet: amv, rmv, armv
- Adapters for mounting on profiles
→ Internet: ipm-80, ipm-40-80, ipm-80-80

Manually actuated

Pneumatically actuated

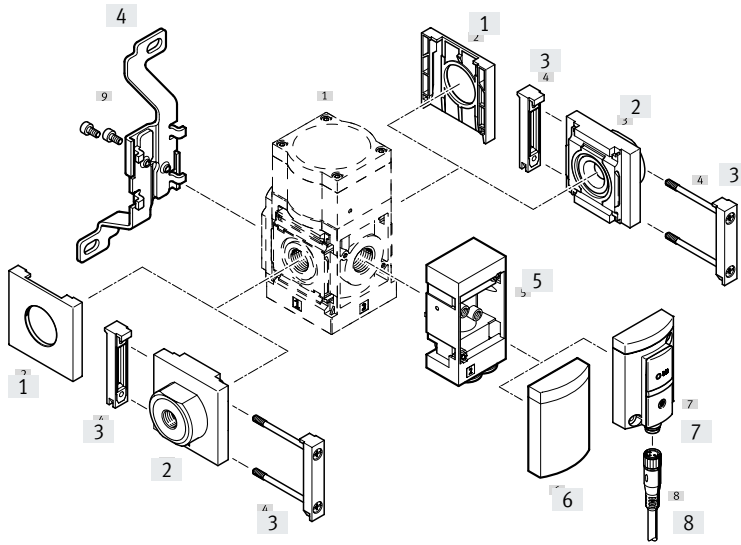



Peripherals overview

| Mounting attachments and accessories | | Individual device | | Combination | | → Page/Internet |
|--------------------------------------|---|--------------------------|-----------------------|--------------------------|-----------------------|-----------------|
| | | Without connecting plate | With connecting plate | Without connecting plate | With connecting plate | |
| [1] | Adapter for EN pressure gauge 1/8, 1/4 A8/A4 | ■ | ■ | ■ | ■ | 78 |
| [2] | Angled outlet block B... | ■ | ■ | ■ | ■ | 78 |
| [3] | Mounting bracket MS6-WP | – | ■ | ■ | ■ | ms6-wp |
| [4] | Mounting bracket MS6-WPB | – | ■ | ■ | ■ | ms6-wp |
| [5] | Mounting bracket MS6-WPE | – | ■ | ■ | ■ | ms6-wp |
| [6] | Mounting bracket MS6-WPM | – | ■ | ■ | ■ | ms6-wp |
| [7] | Cover cap MS6-END | ■ | – | ■ | – | ms6-end |
| [8] | Module connector MS6-MV | – | ■ | ■ | ■ | ms6-mv |
| [9] | Connecting plate SET MS6-AG... | – | ■ | – | ■ | ms6-ag |
| [10] | Pressure sensor with LCD display AD11/AD12 | ■ | ■ | ■ | ■ | 78 |
| [11] | Connecting cable NEBU-M8...-LE4/NEBU-M12...-LE4 | ■ | ■ | ■ | ■ | 102 |
| [12] | Pressure sensor without display AD7 ... AD10 | ■ | ■ | ■ | ■ | 78 |
| [13] | Connecting cable NEBU-M8...-LE3 | ■ | ■ | ■ | ■ | 102 |
| [14] | Precision pressure gauge A8M/MAP | ■ | ■ | ■ | ■ | 78, 102 |
| [15] | Cover plate VS | ■ | ■ | ■ | ■ | 78 |
| [16] | Padlock LRVS-D | ■ | ■ | ■ | ■ | 102 |

Peripherals overview

Precision pressure regulator MS6-LRPB with pressure output at the front



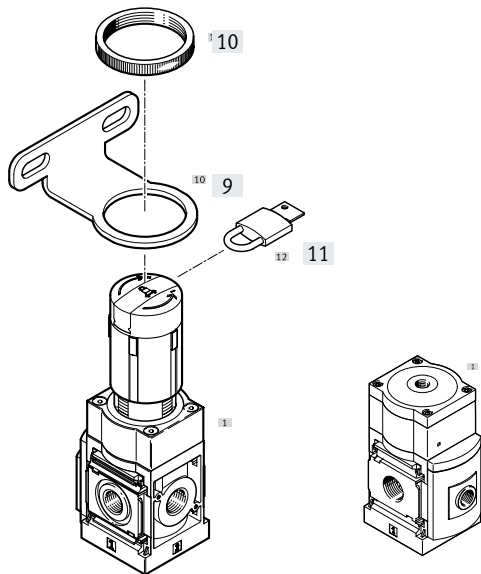
 **Note**

Additional accessories:

- Module connectors for combination with size MS4/MS6 or size MS9
 - Internet: amv, rmv, armv
- Adapters for mounting on profiles
 - Internet: ipm-80, ipm-40-80, ipm-80-80

Manually actuated

Pneumatically actuated



Peripherals overview

| Mounting attachments and accessories | | Individual device | | Combination | | → Page/Internet |
|--------------------------------------|--|--------------------------|-----------------------|--------------------------|-----------------------|-----------------|
| | | Without connecting plate | With connecting plate | Without connecting plate | With connecting plate | |
| [1] | Cover cap MS6-END | ■ | – | ■ | – | ms6-end |
| [2] | Connecting plate SET MS6-AG... | – | ■ | – | ■ | ms6-ag |
| [3] | Module connector MS6-MV | – | ■ | ■ | ■ | ms6-mv |
| [4] | Mounting bracket MS6-WB | ■ | ■ | – | – | ms6-wb |
| [5] | Angled outlet block B... | ■ | ■ | ■ | ■ | 78 |
| [6] | Cover plate VS | ■ | ■ | ■ | ■ | 78 |
| [7] | Pressure sensor without display AD7 ... AD10 | ■ | ■ | ■ | ■ | 78 |
| [8] | Connecting cable NEBU-M8...-LE3 | ■ | ■ | ■ | ■ | 102 |
| [9] | Mounting bracket MS6-WR | ■ | ■ | – | – | ms6-wr |
| [10] | Knurled nut (included in the scope of delivery) MS-LR | ■ | ■ | – | – | – |
| [11] | Padlock LRVS-D | ■ | ■ | ■ | ■ | 102 |

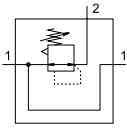
Type codes

| | |
|-------------|---|
| 001 | Series |
| MS | MS series |
| 002 | Size |
| 6 | Grid dimension 62 mm |
| 003 | Function |
| LRPB | Precision pressure regulator for manifold installation |
| 004 | Pneumatic connection |
| 1/2 | Female thread G1/2 |
| AGB | Sub-base G1/4 |
| AGC | Sub-base G3/8 |
| AGD | Sub-base G1/2 |
| AGE | Sub-base G3/4 |
| 005 | Pressure regulation range |
| D2 | 0.05 ... 0.7 bar |
| D4 | 0.05 ... 2.5 bar |
| D5 | 0.1 ... 4 bar |
| D7 | 0.1 ... 12 bar |
| PO | Max. 12 bar, pneumatically actuated (pressure range determined by pilot regulator) |
| 006 | Pressure gauge alternatives |
| A4 | Adapter for EN pressure gauge 1/4, without pressure gauge |
| A8 | Adapter for EN pressure gauge 1/8, without pressure gauge |
| A8M | Adapter for EN pressure gauge 1/8, with precision pressure gauge |
| AD7 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O |
| AD8 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/C |
| AD9 | Pressure sensor with switching display, M8 plug, window comparator, PNP, N/O |
| AD10 | Pressure sensor with operational status indicator, M8 plug, window comparator, PNP, N/C |
| AD11 | Pressure sensor with LCD display, M12 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA |
| AD12 | Pressure sensor with LCD display, M8 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA |
| VS | Cover plate |

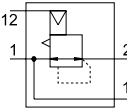
| | |
|------------|---|
| 007 | Rotary knob alternative |
| | None |
| LD | Long rotary knob |
| 008 | Alternative mounting position |
| | None |
| KD | Rotary knob underneath |
| 009 | Lockability |
| | None |
| AS | Can be locked using accessories |
| E11 | With integrated lock |
| 010 | Alternative pressure outlet |
| | None |
| BD | Angled outlet block QS-8 |
| BE | Angled outlet block QS-10 |
| 011 | Type of mounting |
| | Without mounting bracket |
| WR | Mounting bracket with knurled nut on regulator knob |
| WP | Mounting bracket basic design |
| WPB | Mounting bracket for large wall gap |
| WPM | Mounting bracket for hooking in service unit components |
| WB | Mounting centrally at rear (wall mounting top and bottom), connecting plates not required |
| 012 | EU certification |
| | None |
| EX4 | II 2GD |
| 013 | UL certification |
| | None |
| UL1 | cULus ordinary location for Canada and USA |
| 014 | Outlet direction |
| | Pressure output to the rear |
| Z | Pressure output to the front |

Datasheet

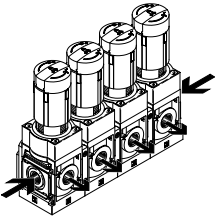
Pressure regulation range/actuation, manually actuated







Pressure regulation range/actuation, pneumatically actuated



Several precision pressure regulators mounted next to one another to form a regulator manifold:



The precision pressure regulator is suitable for sensitive applications requiring a hysteresis of 0.02 bar.

-  Flow rate
1600 ... 5000 l/min
-  Temperature range
-10 ... +60°C
-  Operating pressure
1 ... 14 bar
-  www.festo.com



The output pressure p2 can be set within the pressure regulation range either manually using the rotary knob or pneumatically via pilot pressure p12 by an external pilot regulator (where possible using a precision pressure regulator). When the input pressure p1 is switched off, the output pressure p2 is exhausted via port 3 (secondary exhausting).

- Good regulation characteristics with minimal hysteresis and input pressure compensation
- Manifold assembly with through air supply
- For configuring a regulator manifold with independent pressure regulation ranges
- Actuator lock to protect the set values from being adjusted
- Four pressure regulation ranges: 0.05 ... 0.7 bar, 0.05 ... 2.5 bar, 0.1 ... 4 bar and 0.1 ... 12 bar
- Optional pressure sensor
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

| General technical data | | |
|---|---|---|
| Size | MS6 | |
| Pneumatic connection 1 | | |
| Female thread | G1/2 | |
| Connecting plate [AG...] | G1/4, G3/8, G1/2 or G3/4 | |
| Pneumatic connection 2 | | |
| Female thread | G1/2 | |
| Angled outlet block [BD] | QS-8 | |
| [BE] | QS-10 | |
| Pneumatic connection 3 | G1/4 | |
| Pilot air port 12 | G1/8 (MS6-LRPB-...-PO) | |
| Design | Piloted precision diaphragm regulator with through compressed air supply | |
| Regulator function | Output pressure constant, with secondary exhausting | |
| Type of mounting | Via accessories In-line installation Front panel mounting | |
| Mounting position | Any | |
| Actuator lock | Rotary knob with latch Rotary knob with latch, can be locked using accessories Rotary knob with integrated lock | |
| Pressure regulation range/actuation ¹⁾ | [D2] [bar] | 0.05 ... 0.7, manually actuated |
| | [D4] [bar] | 0.05 ... 2.5, manually actuated |
| | [D5] [bar] | 0.1 ... 4, manually actuated |
| | [D7] [bar] | 0.1 ... 12, manually actuated (0.1 ... 10 with pressure sensor AD... or with UL certification) |
| | [PO] [bar] | 0.1 ... 12, pneumatically actuated (0.1 ... 10 with pressure sensor AD... or with UL certification) |
| Max. pressure hysteresis | [bar] | 0.02 |

1) [D2]/[D4]/[D5]/[D7]: input pressure p1 ≥ output pressure p2 + 1 bar.
[PO]: pilot pressure p12 = output pressure p2 + max. 0.5 bar

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

Datasheet

| General technical data | |
|------------------------|--|
| Size | MS6 |
| Pressure indication | Via pressure sensor for indicating the output pressure and electrical output via LCD display |
| | Via pressure sensor for indicating the output pressure and electrical output |
| | Via pressure gauge for indicating the output pressure |
| | Prepared for G1/8 |
| | Prepared for G1/4 |

| Flow rates | | | | |
|---|------------------------|--------------------------|--------------------------|---------------------------|
| Pressure regulation range | [D2]: 0.05 ... 0.7 bar | [D4]: 0.05 ... 2.5 bar | [D5]: 0.1 ... 4 bar | [D7]/[PO]: 0.1 ... 12 bar |
| Standard nominal flow rate q_{nN} [l/min] | | | | |
| $q_{nN 1 \rightarrow 2}$ | G1/2 | 1600 ¹⁾ | 2300 ²⁾ | 3000 ³⁾ |
| | | | | 5000 ⁴⁾ |
| Secondary exhaust flow rate [l/min] | | | | |
| $q_{n 2 \rightarrow 3}$ | | ≥ 220 ⁵⁾ | ≥ 450 ⁶⁾ | ≥ 650 ⁷⁾ |
| | | | | ≥ 900 ⁸⁾ |

- 1) Measured at $p_1 = 10$ bar and $p_2 = 0.5$ bar, $\Delta p = 0.1$ bar
- 2) Measured at $p_1 = 10$ bar and $p_2 = 1.5$ bar, $\Delta p = 0.1$ bar
- 3) Measured at $p_1 = 10$ bar and $p_2 = 2.5$ bar, $\Delta p = 0.1$ bar
- 4) Measured at $p_1 = 10$ bar and $p_2 = 6.0$ bar, $\Delta p = 0.1$ bar

- 5) Measured at $p_1 = 10$ bar and $p_2 = 0.7$ bar, $\Delta p_2 = 0.1$ bar
- 6) Measured at $p_1 = 10$ bar and $p_2 = 2.5$ bar, $\Delta p_2 = 0.1$ bar
- 7) Measured at $p_1 = 10$ bar and $p_2 = 4.0$ bar, $\Delta p_2 = 0.1$ bar
- 8) Measured at $p_1 = 10$ bar and $p_2 = 6.0$ bar, $\Delta p_2 = 0.1$ bar

| Operating and environmental conditions | |
|--|---|
| Operating pressure [bar] | 1 ... 14 (1 ... 10) ¹⁾ |
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] |
| | Inert gases |
| Note on the operating/pilot medium | Lubricated operation not possible |
| Ambient temperature [°C] | -10 ... +60 (0 ... +50) ²⁾ |
| Temperature of medium [°C] | -10 ... +60 (0 ... +50) ²⁾ |
| Storage temperature [°C] | -10 ... +60 |
| Corrosion resistance class CRC ³⁾ | 2 |
| UL certification ⁴⁾ | c UL us - Recognized (OL) |

- 1) Value in brackets applies to MS6-LRPB with UL certification.
- 2) Value in brackets applies to MS6-LRPB with pressure sensor.
- 3) More information www.festo.com/x/topic/crc
- 4) More information: www.festo.com/catalogue/ms6-lrpb → Support/Downloads.

| ATEX | |
|--|---|
| EU certification | [EX4] |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T6 Gb X |
| ATEX category for dust | II 2D |
| Type of (ignition) protection for dust | Ex h IIIC T60°C Db X |
| Explosion ambient temperature | $-10^\circ\text{C} \leq T_a \leq +60^\circ\text{C}$ |
| Explosion protection certification outside the EU | EPL Db (GB) |
| | EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) ¹⁾ | To UK regulations for explosions |

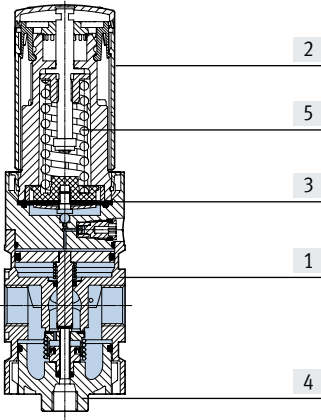
- 1) More information: www.festo.com/catalogue/ms6-lrpb → Support/Downloads.

| Weight [g] | |
|--|------|
| Precision pressure regulator | 1000 |
| Precision pressure regulator with rotary knob with integrated lock | 1120 |

Datasheet

Materials

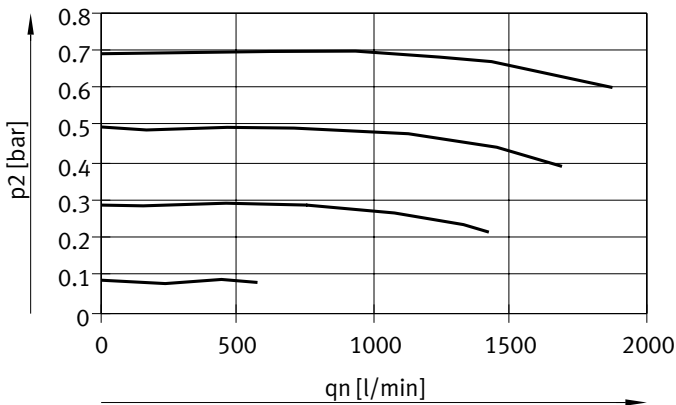
Sectional view



| Precision pressure regulator (manifold assembly) | | |
|--|----------------------------------|--------------------|
| [1] | Housing | Die-cast aluminium |
| [2] | Rotary knob | PA, POM |
| | Rotary knob with integrated lock | Aluminium |
| [3] | Diaphragm | NBR |
| [4] | Bottom cover | PC |
| [5] | Springs | Steel |
| - | Seals | NBR |
| Note on materials | | RoHS-compliant |
| PWIS conformity | | VDMA24364-B1/B2-L |

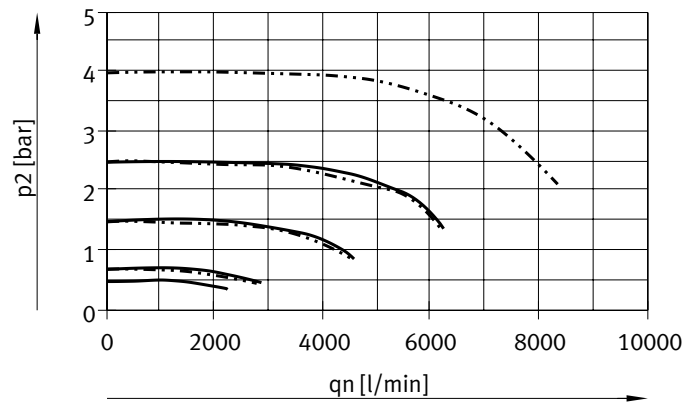
Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 10$ bar)

MS6-LRPB-1/2-D2



— [D2]: 0.05 ... 0.7 bar

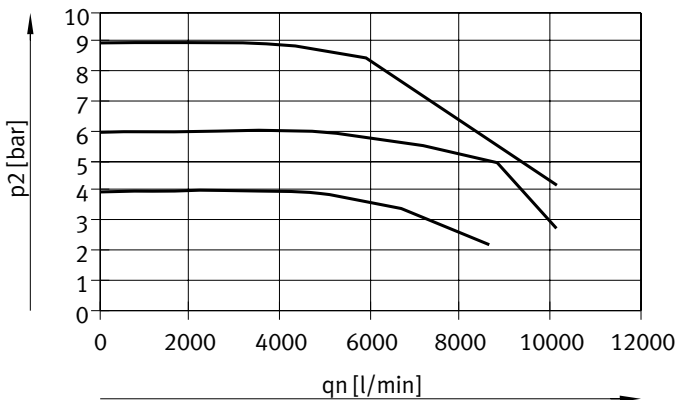
MS6-LRPB-1/2-D4/D5



— [D4]: 0.05 ... 2.5 bar

- - - [D5]: 0.1 ... 4 bar

MS6-LRPB-1/2-D7/PO

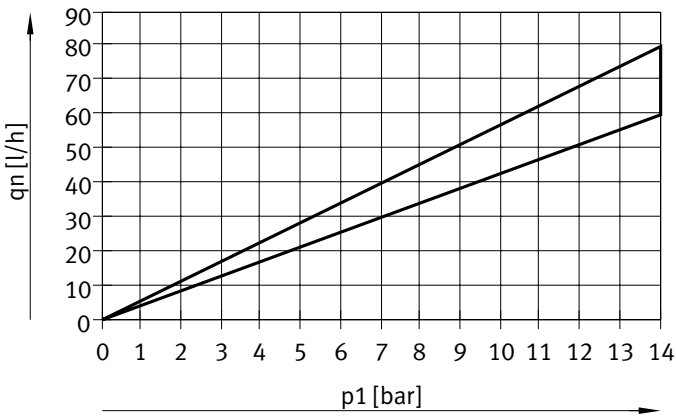


— [D7]/[PO]: 0.1 ... 12 bar

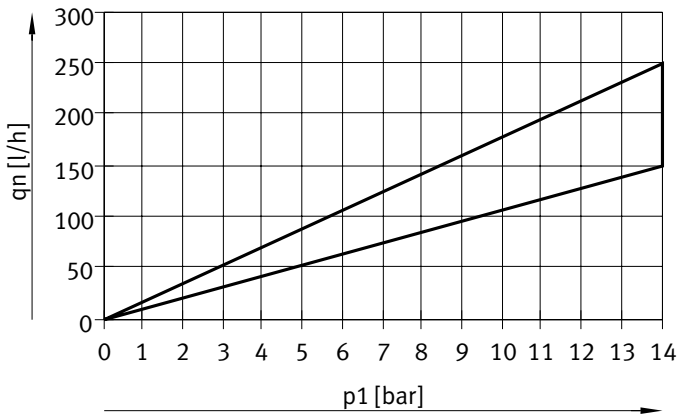
Datasheet

Internal air consumption q_n as a function of input pressure p_1

MS6-LRPB...-D2/D4



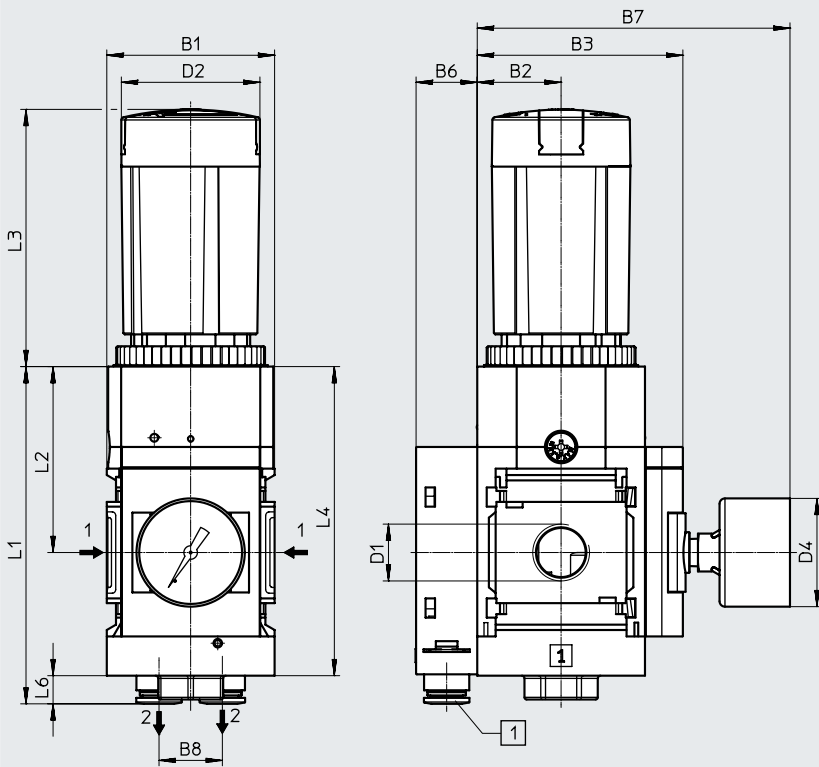
MS6-LRPB...-D5/D7/PO



Dimensions

Download CAD data → www.festo.com

- [D2]/[D4]/[D5]/[D7] Pressure regulation range, manually actuated
- [A8M] Adapter for EN pressure gauge 1/8, with precision pressure gauge
- [BD]/[BE] Angled outlet block
- [AS] Rotary knob with latch, can be locked using accessories



[1] Push-in connector
→ Flow direction

| Type | B1 | B2 | B3 | B6 | B7 | B8 | D1 | D2 ∅ | D4 ∅ | L1 | L2 | L3 | L4 | L6 |
|---------------------------------------|----|----|----|----|-----|------|------|---------|---------|-----|----|------|-----|----|
| MS6-LRPB-1/2-D2/D4/D5/D7-A8M-BD/BE-AS | 62 | 31 | 76 | 23 | 115 | 23.4 | G1/2 | 51.2 | 40 | 124 | 68 | 95.1 | 114 | 10 |

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

Datasheet

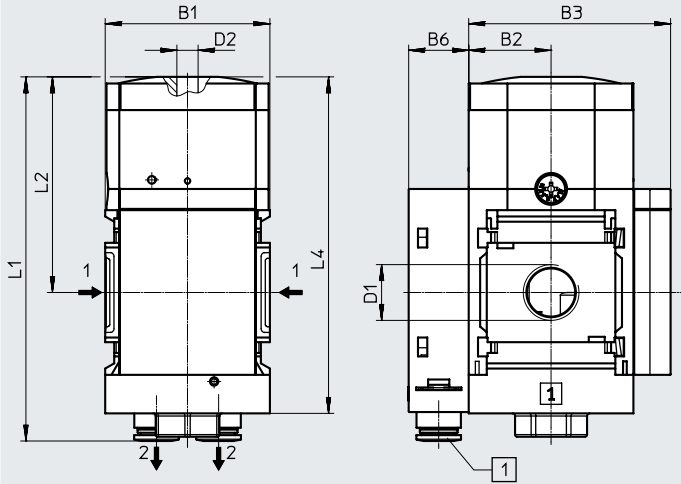
Dimensions

Download CAD data → www.festo.com

[PO] Pressure regulation range, pneumatically actuated

[VS] Cover plate

[BD]/[BE] Angled outlet block



[1] Push-in connector
→ Flow direction

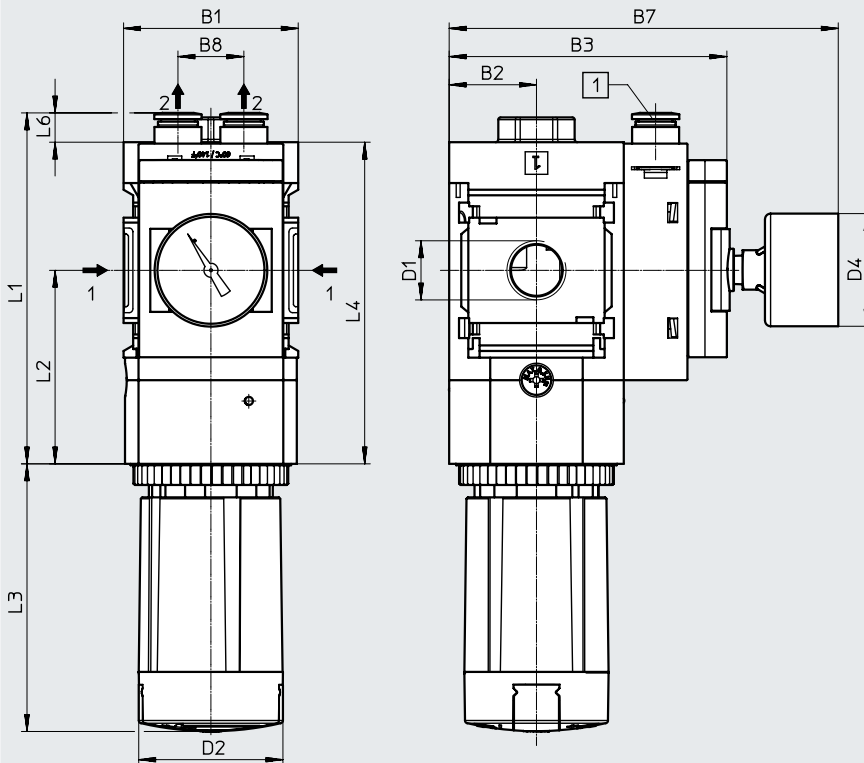
| Type | B1 | B2 | B3 | B6 | D1 | D2 | L1 | L2 | L4 |
|--------------------------|----|----|----|----|------|------|-----|----|-----|
| MS6-LRPB-1/2-PO-VS-BD/BE | 62 | 31 | 76 | 23 | G1/2 | G1/8 | 137 | 81 | 127 |

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

Dimensions – Alternative mounting position

Download CAD data → www.festo.com

[KD] Rotary knob underneath



[1] Push-in connector
→ Flow direction

| Type | B1 | B2 | B3 | B7 | B8 | D1 | D2 ∅ | D4 ∅ | L1 | L2 | L3 | L4 | L6 |
|---------------------|----|----|----|-----|------|------|---------|---------|-----|----|------|-----|----|
| MS6-LRPB-1/2-...-KD | 62 | 31 | 99 | 138 | 23.4 | G1/2 | 51.2 | 40 | 124 | 68 | 95.1 | 114 | 10 |

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

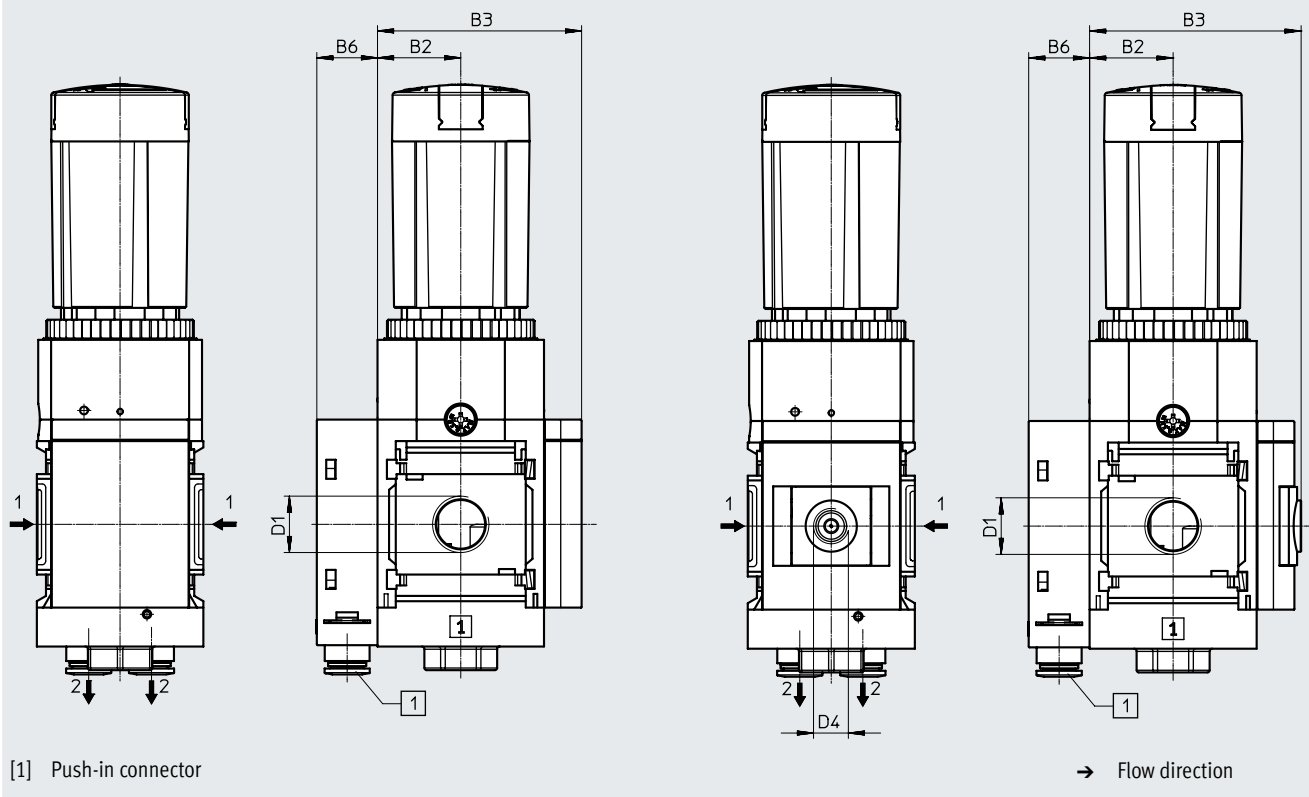
Datasheet

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

[VS] Cover plate

- [A8] Adapter for EN pressure gauge 1/8, without pressure gauge
- [A4] Adapter for EN pressure gauge 1/4, without pressure gauge



| Type | B2 | B3 | B6 | D1 | D4 |
|---------------------|----|------|----|------|------|
| MS6-LRPB-1/2-...-VS | | 76 | | | - |
| MS6-LRPB-1/2-...-A8 | 31 | 78.5 | 23 | G1/2 | G1/8 |
| MS6-LRPB-1/2-...-A4 | | 78.5 | | | G1/4 |

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

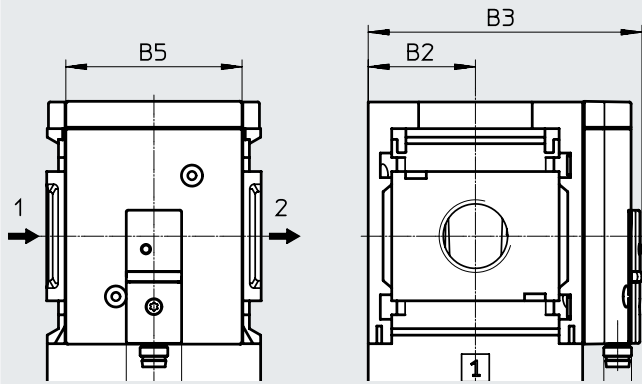
Datasheet

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

[AD7 ... 10] Pressure sensor without LCD display (switching status indicator only)

Datasheets → Internet: sde5



Variant AD7:
SDE5-D10-O-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/O contact

Variant AD9:
SDE5-D10-O3-...-P-M8 with 3-pin plug M8x1, window comparator, 1 switching output PNP, N/O contact

Variant AD8:
SDE5-D10-C-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/C contact

Variant AD10:
SDE5-D10-C3-...-P-M8 with 3-pin plug M8x1, window comparator, 1 switching output PNP, N/C contact

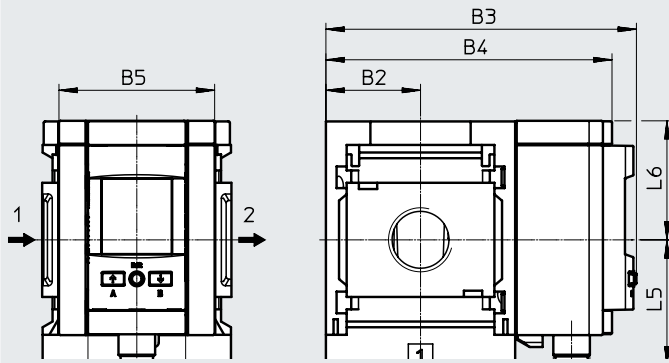
→ Flow direction

| Type | B2 | B3 | B5 | B6 | D6 | L5 | L6 |
|-------------------------------|----|------|----|----|------|----|----|
| MS6-LRPB-...-AD7/AD8/AD9/AD10 | 31 | 79.1 | 51 | 16 | M8x1 | - | - |

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

[AD11/AD12] Pressure sensor with LCD display

Datasheets → Internet: spau



Variant AD11:
SPAU-P10R-MS-L-PNLK-M12 with plug M12, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA

Variant AD12:
SPAU-P10R-MS-L-PNLK-M8 with plug M8, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA

→ Flow direction

| Type | B2 | B3 | B4 | B5 | B6 | D6 | L5 | L6 |
|-------------------|----|-------|------|----|----|-------|------|----|
| MS6-LRPB-...-AD11 | 31 | 101.8 | 93.7 | 51 | 32 | M12x1 | 41.2 | 39 |
| MS6-LRPB-...-AD12 | 31 | 101.8 | 93.7 | 51 | 32 | M8x1 | 37.9 | 39 |

Datasheet

Dimensions – Rotary knob

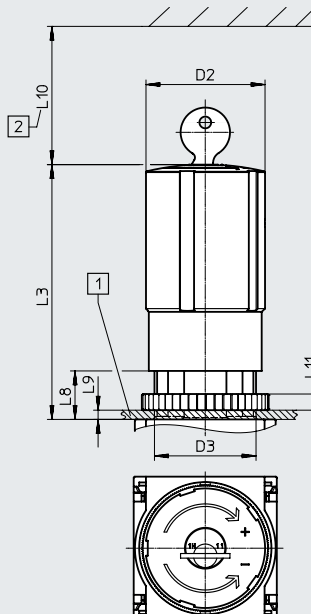
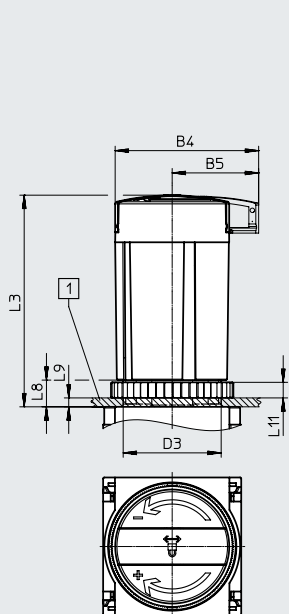
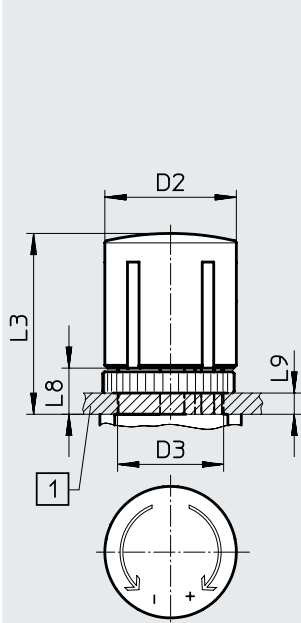
Download CAD data → www.festo.com

For control panel installation

[] Rotary knob with latch

[AS] Rotary knob with latch, can be locked using accessories

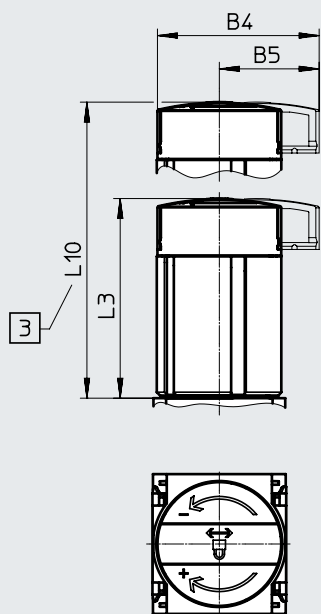
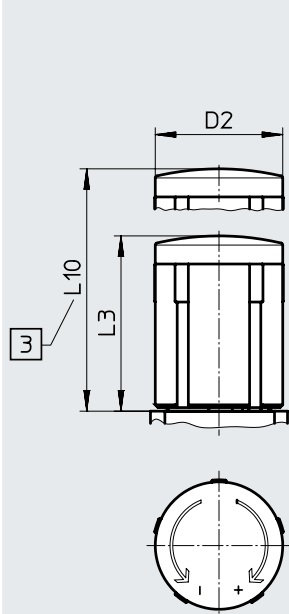
[E11] Rotary knob with integrated lock



- [1] Max. control panel thickness
- [2] Installation dimension

[LD] Rotary knob, long, with latch

[LD-AS] Rotary knob, long, with latch, can be locked using accessories



- [3] For pressure adjustment: fully pull out telescopic rotary knob

| Type | B4 | B5 | D2 | D3 | L3 | L8 | L9 | L10 |
|-------------------|------|------|------|-------|------|----|----|-------|
| MS6-LRPB... | - | - | 51.2 | M44x1 | 86 | 21 | 14 | - |
| MS6-LRPB...-AS | 64.4 | 38.8 | | | 95.1 | 12 | 5 | |
| MS6-LRPB...-E11 | - | - | | | 110 | 21 | 14 | |
| MS6-LRPB...-LD | - | - | 51.2 | - | 86 | - | - | 139 |
| MS6-LRPB...-LD-AS | 64.4 | 38.8 | | | 95.5 | | | 148.5 |

Datasheet

| Ordering data | | | | |
|------------------------|---------------------------|--------------------|---------------|------------------------------|
| Pneumatic connection 1 | Pressure regulation range | Flow direction | Part no. | Type |
| MS6-LRPB... | | | | |
| G1/2 | 0.05 ... 0.7 bar | From left to right | 534865 | MS6-LRPB-1/2-D2-A8-BD |
| | 0.05 ... 2.5 bar | From left to right | 534914 | MS6-LRPB-1/2-D4-A8 |
| | 0.1 ... 4 bar | From left to right | 534917 | MS6-LRPB-1/2-D5-A8 |
| | 0.1 ... 12 bar | From left to right | 534874 | MS6-LRPB-1/2-D7-A8-BD |

Ordering data – Modular product system

| Ordering table | | Conditions | Code | Enter code |
|-------------------------------------|---|-------------|--------------|------------|
| Grid dimension [mm] | 62 | | | |
| Module no. | 535007 | | | |
| Series | Standard | | MS | MS |
| Size | 6 | | 6 | 6 |
| Function | Precision pressure regulator for manifold assembly | | -LRPB | -LRPB |
| Pneumatic connection | Female thread G1/2 | [1] | -1/2 | |
| | Connecting plate G1/4 | | -AGB | |
| | Connecting plate G3/8 | | -AGC | |
| | Connecting plate G1/2 | | -AGD | |
| | Connecting plate G3/4 | | -AGE | |
| Pressure regulation range/actuation | 0.05 ... 0.7 bar, manually actuated | | -D2 | |
| | 0.05 ... 2.5 bar, manually actuated | | -D4 | |
| | 0.1 ... 4 bar, manually actuated | | -D5 | |
| | 0.1 ... 12 bar, manually actuated | | -D7 | |
| | 0.1 ... 12 bar, pneumatically actuated (pressure range determined by pilot regulator) | [1] [2] | -PO | |
| Pressure gauge alternatives | Cover plate | [3] | -VS | |
| | Adapter for EN pressure gauge 1/8, without pressure gauge | [4] | -A8 | |
| | Adapter for EN pressure gauge 1/8, with precision pressure gauge | [4] | -A8M | |
| | Adapter for EN pressure gauge 1/4, without pressure gauge | [4] | -A4 | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/O contact | [1] [5] [6] | -AD7 | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/C contact | [1] [5] [6] | -AD8 | |
| | Pressure sensor with status indicator, plug M8, window comparator, PNP, N/O contact | [1] [5] [6] | -AD9 | |
| | Pressure sensor with status indicator, plug M8, window comparator, PNP, N/C contact | [1] [5] [6] | -AD10 | |
| | Pressure sensor with LCD display, plug M12, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA | [1] [4] [5] | -AD11 | |
| | Pressure sensor with LCD display, plug M8, 4-pin, IO-Link®, PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA | [1] [4] [5] | -AD12 | |

- [1] 1/2, PO, AD7 ... AD10, AD11/AD12, KD, E11, WPM Not with EU EX4 certification.
- [2] PO Not with long rotary knob LD. Not with locking options AS, E11. Not with mounting type WR.
- [3] VS Must be selected with outlet direction Z without alternative mounting position KD or without alternative pressure output BD, BE. Must be selected with alternative mounting position KD without outlet direction Z or without alternative pressure output BD, BE.
- [4] A8, A8M, A4, AD11/AD12 In combination with outlet direction Z only with alternative mounting position KD.
- [5] AD7 ... AD10, AD11/AD12 Measuring range max. 10 bar. Not with pressure regulation range/actuation D2, D4.
- [6] AD7 ... AD10 In combination with outlet direction Z only with alternative pressure output BD, BE or in combination with outlet direction Z only with alternative mounting position KD

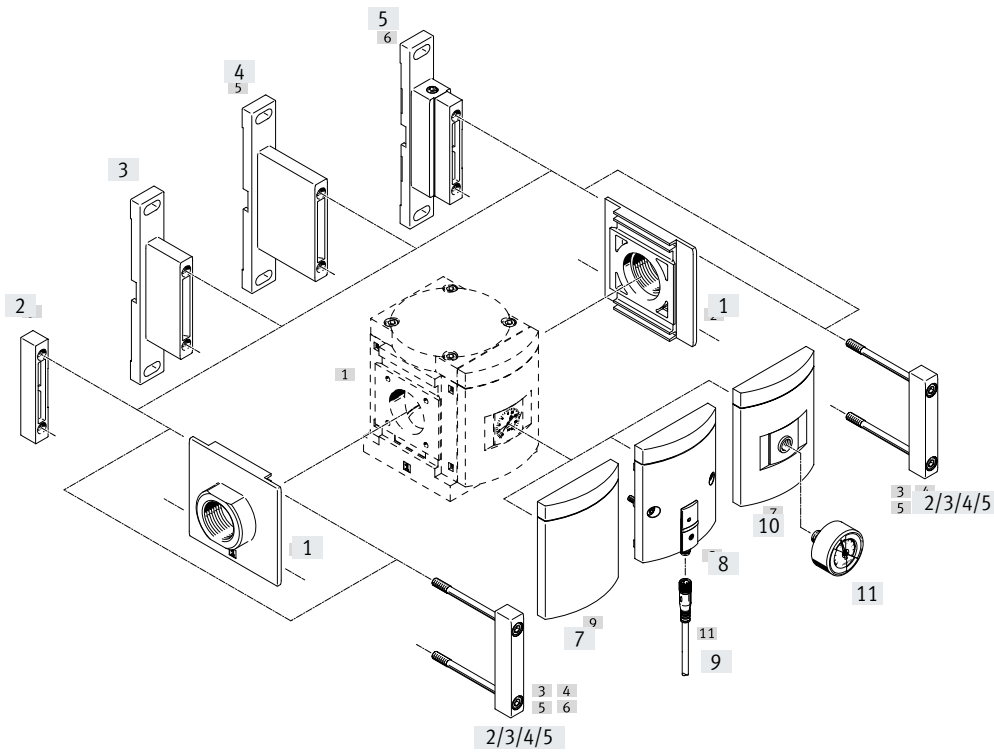
Ordering data – Modular product system


| Ordering table | | Grid dimension | [mm] | 62 | Conditions | Code | Enter code |
|---|---|----------------|------|--------------|------------|-------------|------------|
| Rotary knob | Standard | | | | | | |
| | Long rotary knob | | | [7] | | -LD | |
| Alternative mounting position | None | | | | | | |
| | Rotary knob underneath | | | [1] [8] | | -KD | |
| Locking option | None | | | | | | |
| | Lockable using accessories | | | | | -AS | |
| | With integrated lock | | | [1] | | -E11 | |
| Alternative pressure output (p max = 10 bar) | None | | | | | | |
| | Angled outlet block QS-8 | | | | | -BD | |
| | Angled outlet block QS-10 | | | | | -BE | |
| Type of mounting | Without mounting bracket | | | | | | |
| | Mounting bracket with knurled nut for regulator head | | | [9] [10] | | -WR | |
| | Mounting bracket standard design | | | [11] [12] | | -WP | |
| | Mounting bracket for hooking in service unit components | | | [1] [9] [11] | | -WPM | |
| | Mounting bracket for large wall gap | | | [11] [13] | | -WPB | |
| | Mounting bracket centrally at the rear (wall mounting top and bottom), connecting plates not required | | | [9] | | -WB | |
| EU certification | None | | | | | | |
| | II 2GD to EU Explosion Protection Directive (ATEX) | | | | | -EX4 | |
| UL certification | None | | | | | | |
| | cULus, ordinary location for Canada and USA | | | | | -UL1 | |
| Outlet direction | Pressure output at the rear | | | | | | |
| | Pressure output at the front (without angled outlet block, no pressure gauge) | | | | | -Z | |

- [7] LD Not with locking option E11.
- [8] KD In combination with pressure gauge alternatives A8, A4, AD7 ... AD10 only with outlet direction Z.
- [9] WR, WB, WPM Only with outlet direction Z.
Not with alternative mounting position KD.
- [10] WR Only with outlet direction Z.
Not with long rotary knob LD.
- [11] WP, WPM, WPB Only with connecting plate AGB, AGC, AGD or AGE.
- [12] WP Not with alternative mounting position KD.
Either only with outlet direction Z or only with alternative pressure output BD, BE.
- [13] WPB Not with alternative mounting position KD.
Not with alternative pressure output BD, BE.
Not with outlet direction Z.

Peripherals overview

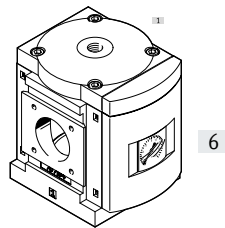
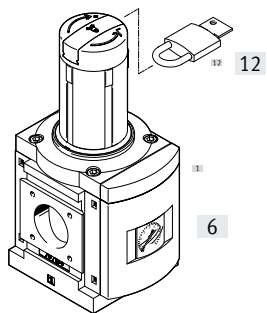
Pressure regulator MS9-LR



-  - **Note**
 Additional accessories:
 • Module connectors for combination with size MS6, MS9 or MS12
 → Internet: rmv, armv

Manually actuated

Pneumatically actuated



Peripherals overview

| Mounting attachments and accessories | | Individual device | | | Combination Module without connecting thread, without connecting plate | → Page/ Internet |
|--------------------------------------|---|--------------------|-------------------------------|-----------------------|---|---------------------|
| | | With female thread | With connecting plate | | | |
| | | | Without EU certifica- tion | With EU certification | | |
| [1] | Connecting plate SET MS9-AG... | – | ■ | ■ | ■ | ms9-ag |
| | Connecting plate SET MS9-AQ... | – | ■ | – | ■ | ms9-aq |
| [2] | Module connector MS9-MV | – | – | – | ■ | ms9-mv |
| [3] | Mounting bracket MS9-WP | ■ | ■ | ■ | ■ | ms9-wp |
| [4] | Mounting bracket MS9-WPB | ■ | ■ | ■ | ■ | ms9-wp |
| [5] | Mounting bracket MS9-WPM | ■ | ■ | – | ■ | ms9-wp |
| [6] | MS pressure gauge AG | ■ | ■ | ■ | ■ | 90 |
| [7] | Cover plate VS | ■ | ■ | ■ | ■ | 90 |
| [8] | Pressure sensor without display AD7 ... AD10 | ■ | ■ | – | ■ | 90 |
| [9] | Connecting cable NEBU-M8...-LE3 | ■ | ■ | – | ■ | 102 |
| [10] | Adapter for EN pressure gauge 1/4 A4 | ■ | ■ | ■ | ■ | 90 |
| [11] | Pressure gauge MA | ■ | ■ | ■ | ■ | 102 |
| [12] | Padlock LRVS-D | ■ | ■ | ■ | ■ | 102 |

Type codes

| | |
|------------|---------------|
| 001 | Series |
| MS | MS series |

| | |
|------------|----------------------|
| 002 | Size |
| 9 | Grid dimension 90 mm |

| | |
|------------|--------------------|
| 003 | Function |
| LR | Pressure regulator |

| | |
|-------------|---|
| 004 | Pneumatic connection |
| 3/4 | Female thread G3/4 |
| 1 | Female thread G1 |
| AGD | Sub-base G1/2 |
| AGE | Sub-base G3/4 |
| AGF | Sub-base G1 |
| AGG | Sub-base G11/4 |
| AGH | Sub-base G11/2 |
| N3/4 | NPT3/4 |
| N1 | NPT1 |
| AQR | Sub-base NPT1/2 |
| AQS | Sub-base NPT3/4 |
| AQT | Sub-base NPT1 |
| AQU | Sub-base NPT11/4 |
| AQV | Sub-base NPT11/2 |
| G | Module without connecting thread, without sub-base |
| NG | Module without connecting thread, without sub-base (inch) |

| | |
|------------|--|
| 005 | Pressure regulation range |
| D5 | 0.3 ... 4 bar |
| D6 | 0.3 ... 7 bar |
| D7 | 0.5 ... 12 bar |
| D8 | 0.5 ... 16 bar |
| PO | Max. 16 bar, pneumatically actuated (pressure range determined by pilot regulator) |

| | |
|------------|-----------------------|
| 006 | Regulator type |
| | Pilot actuated |
| DI | Directly actuated |

| | |
|-------------|---|
| 007 | Pressure gauge alternatives |
| AG | MS pressure gauge |
| VS | Cover plate |
| A4 | Adapter for EN pressure gauge 1/4, without pressure gauge |
| RG | Integrated pressure gauge, red/green scale |
| AD7 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O |
| AD8 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/C |
| AD9 | Pressure sensor with switching display, M8 plug, window comparator, PNP, N/O |
| AD10 | Pressure sensor with operational status indicator, M8 plug, window comparator, PNP, N/C |

| | |
|------------|---|
| 008 | Alternative pressure gauge scale |
| | MS pressure gauge |
| PSI | psi |
| MPA | MPa |
| BAR | bar |

| | |
|------------|-----------------------------|
| 009 | Secondary exhausting |
| | With secondary exhausting |
| OS | Without secondary exhaust |

| | |
|------------|--------------------------------------|
| 010 | Alternative mounting position |
| | None |
| KD | Rotary knob underneath |

| | |
|------------|---------------------------------|
| 011 | Lockability |
| | None |
| AS | Can be locked using accessories |
| E11 | With integrated lock |

| | |
|------------|---|
| 012 | Type of mounting |
| | Without mounting bracket |
| WP | Mounting bracket basic design |
| WPM | Mounting bracket for hooking in service unit components |
| WPB | Mounting bracket for large wall gap |

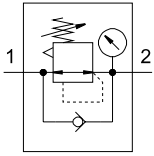
| | |
|------------|-------------------------|
| 013 | EU certification |
| | None |
| EX4 | II 2GD |

| | |
|------------|--|
| 014 | UL certification |
| | None |
| UL1 | cULus ordinary location for Canada and USA |

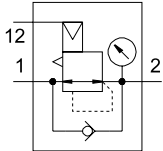
| | |
|------------|-----------------------------------|
| 015 | Flow direction |
| | Flow direction from left to right |
| Z | Flow direction from right to left |





Datasheet

Pressure regulation range/actuation, manually actuated



Pressure regulation range/actuation, pneumatically actuated



-  Flow rate
11000 ... 26000 l/min
-  Temperature range
-10 ... +60°C
-  Operating pressure
1 ... 20 bar
-  www.festo.com



The pressure regulator maintains an essentially constant output pressure p2, independently of pressure fluctuations in the system and air consumption. The output pressure p2 can be set within the pressure regulation range either manually using the rotary knob or pneumatically via pilot pressure p12 by an external pilot regulator. When the operating pressure is switched off, the output pressure p2 is exhausted via port 3 (secondary exhausting).

- Good regulation characteristics with minimal hysteresis and input pressure compensation
- High flow rate performance with minimal pressure drop
- Piloted or directly actuated diaphragm regulator
- Four pressure regulation ranges: 0.5 ... 4 bar, 0.5 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Available with or without secondary exhausting
- Actuator lock to protect the set values from being adjusted
- Return flow option for exhausting from output 2 to output 1 already integrated
- Optional pressure sensor
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

General technical data

| | | | | |
|---|-------------------|---|---|------------|
| Pneumatic connection 1, 2 | | Female thread | | G3/4 or G1 |
| Connecting plate | | [AG...] | G1/2, G3/4, G1, G1 1/4 or G1 1/2 | |
| | | [AQ...] | 1/2 NPT, 3/4 NPT, 1 NPT, 1 1/4 NPT or 1 1/2 NPT | |
| Module without connecting thread/connecting plate | | [G]/[ING] | - | |
| Pilot air port 12 | | G1/4 (MS9-LR-...-PO) | | |
| Design | | Piloted diaphragm regulator | | |
| | | Directly actuated diaphragm regulator | | |
| Regulator function | Piloted | Output pressure constant, with return flow, with input pressure compensation, with secondary exhausting | | |
| | Directly actuated | Output pressure constant, with return flow, with/without secondary exhausting | | |
| Type of mounting | | Via accessories | | |
| | | In-line installation | | |
| | | Front panel mounting | | |
| Mounting position | | Any ¹⁾ | | |
| Actuator lock | | Rotary knob with latch, can be locked using accessories | | |
| | | Rotary knob with integrated lock | | |
| Pressure regulation range/actuation | [D5] | [bar] | 0.5 ... 4, manually actuated | |
| | [D6] | [bar] | 0.5 ... 7, manually actuated | |
| | [D7] | [bar] | 0.5 ... 12, manually actuated (0.5 ... 10 with pressure sensor) | |
| | [D8] | [bar] | 0.5 ... 16, manually actuated (0.5 ... 10 with pressure sensor) | |
| | [PO] | [bar] | 0.5 ... 16, pneumatically actuated ²⁾ | |
| Max. pressure hysteresis | | [bar] | 0.4 | |

1) The pressure regulator must be mounted vertically when combined with a pressure sensor as condensate must not collect in the pressure sensor.
2) Output pressure p2 corresponds roughly to the applied pilot pressure p12.

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

Datasheet

| General technical data | |
|------------------------|--|
| Pressure indication | Via pressure sensor for indicating the output pressure and electrical output |
| | Via pressure gauge for indicating the output pressure |
| | Via pressure gauge with red/green scale for indicating the output pressure |
| | Prepared for G1/4 |

| Standard nominal flow rate $q_{nN}^{1)2)}$ [l/min] | | | | | |
|--|------|-----------------------------|---------------------|--|---------------------|
| Design | | Piloted diaphragm regulator | | Directly actuated diaphragm regulator DI | |
| Pneumatic connection | | G3/4, NPT3/4 | G1, NPT1 | G3/4, NPT3/4 | G1, NPT1 |
| Pressure regulation range | [D5] | 19000 ³⁾ | 26000 ³⁾ | 14000 ³⁾ | 20000 ³⁾ |
| | [D6] | 17000 | 20000 | 14000 | 11000 |
| | [D7] | 17000 | 20000 | – | – |
| | [D8] | 17000 | 20000 | – | – |
| | [PO] | 21000 | 25000 | – | – |

- 1) All values $\pm 15\%$
 2) Measured at $p_1 = 10$ bar and $p_2 = 6$ bar, $\Delta p = 1$ bar
 3) Measured at $p_1 = 10$ bar and $p_2 = 4$ bar, $\Delta p = 1$ bar

| Operating and environmental conditions | | |
|--|---|-----------------------------------|
| EU certification | [] | [EX4] |
| Operating pressure [bar] | 1 ... 20 | |
| 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 lubrication will always be required) | Lubricated operation not possible |
| Ambient temperature [°C] | -10 ... +60 (0 ... +50) ¹⁾ | |
| Temperature of medium [°C] | -10 ... +60 (0 ... +50) ¹⁾ | |
| Storage temperature [°C] | -10 ... +60 | |
| Corrosion resistance class CRC ²⁾ | 2 | |
| UL certification ³⁾ | c UL us - Recognized (OL) | |

- 1) Value in brackets applies to MS9-LR with pressure sensor.
 2) More information www.festo.com/x/topic/crc
 3) More information: www.festo.com/catalogue/ms9-lr → Support/Downloads.

| ATEX | |
|--|---|
| EU certification | [EX4] |
| ATEX category for gas | II 2G |
| Type of (ignition) protection for gas | Ex h IIC T6 Gb X |
| ATEX category for dust | II 2D |
| Type of (ignition) protection for dust | Ex h IIIC T60°C Db X |
| Explosion ambient temperature | $-10^\circ\text{C} \leq T_a \leq +60^\circ\text{C}$ |
| Explosion protection certification outside the EU | EPL Db (GB) |
| | EPL Gb (GB) |
| CE marking (see declaration of conformity) ¹⁾ | To EU Explosion Protection Directive (ATEX) |
| UKCA marking (see declaration of conformity) ¹⁾ | To UK regulations for explosions |

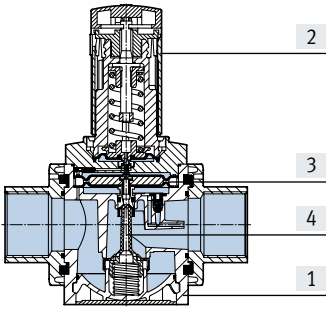
- 1) More information: www.festo.com/catalogue/ms9-lr → Support/Downloads.

| Weight [g] | |
|--|------|
| Pressure regulator | 1400 |
| Pressure regulator with rotary knob with integrated lock | 1700 |

Datasheet

Materials

Sectional view

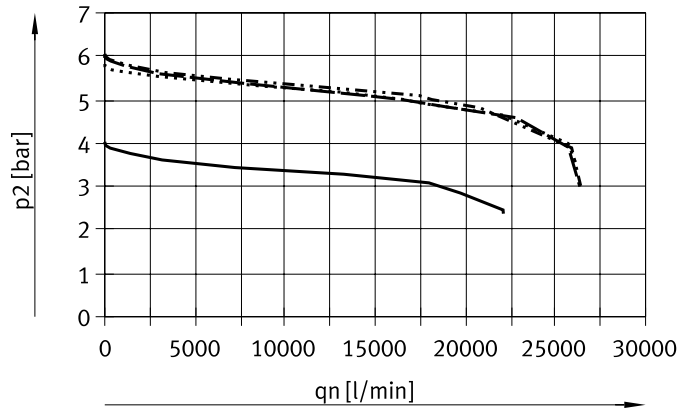


| Pressure regulator | | |
|------------------------|--|-----------------------------------|
| [1] | Housing | Die-cast aluminium |
| [2] | Rotary knob | PA |
| | Rotary knob with integrated lock | Aluminium |
| [3] | Diaphragm | NBR |
| [4] | Valve tappet | Wrought aluminium alloy, NBR, POM |
| - | Covering | Reinforced PA |
| - | Connecting plate, module connector, mounting bracket | Die-cast aluminium |
| - | Seals | NBR |
| Note on materials | | RoHS-compliant |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L |

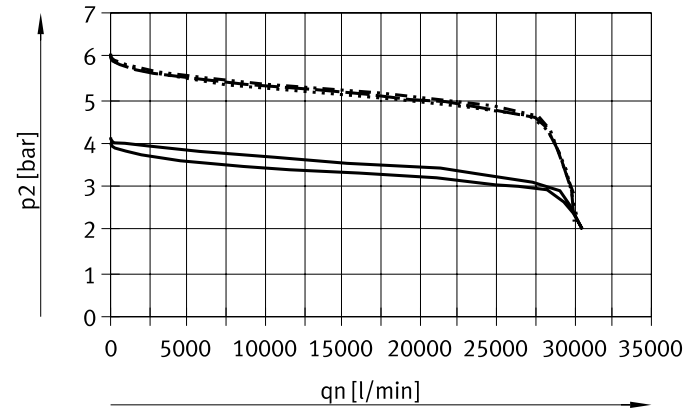
Standard flow rate qn as a function of output pressure p2 (p1 = 10 bar)

Piloted diaphragm regulator

Pneumatic connection G3/4, NPT3/4



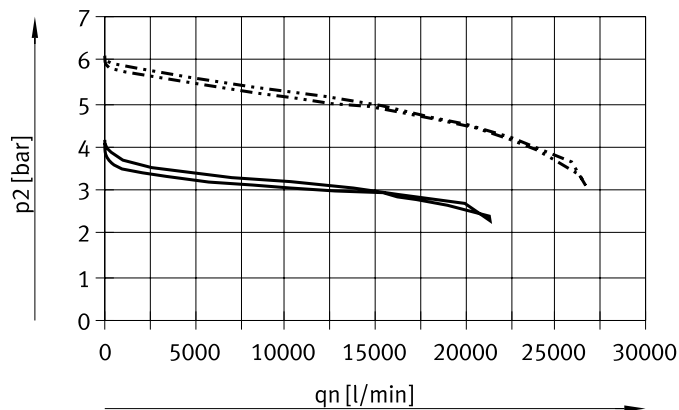
Pneumatic connection G1, NPT1



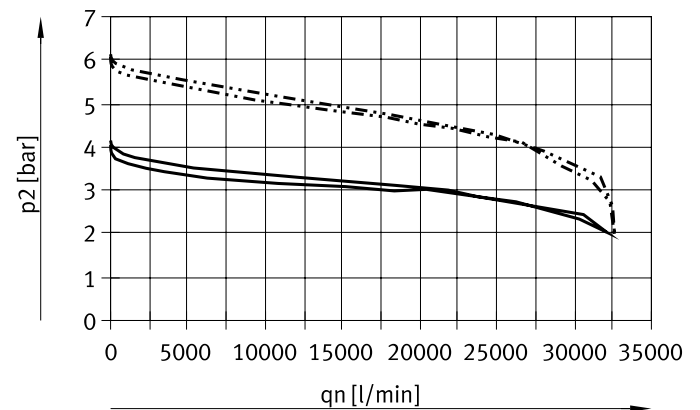
— [D5]: 0.5 ... 4 bar - - - [D7]: 0.5 ... 12 bar
 - · - · [D6]: 0.5 ... 7 bar · · · · · [D8]: 0.5 ... 16 bar

Directly actuated diaphragm regulator

Pneumatic connection G3/4, NPT3/4



Pneumatic connection G1, NPT1



— [D5]: 0.5 ... 4 bar
 - · - · [D6]: 0.5 ... 7 bar

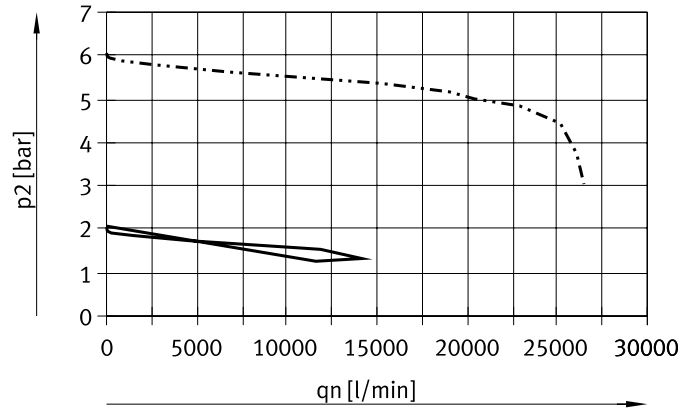
Datasheet

Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 10$ bar)

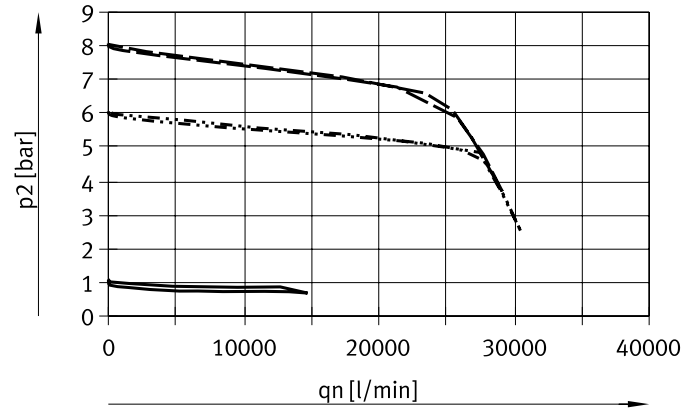
External pilot regulator

Pressure regulation range, pneumatically actuated

Pneumatic connection G3/4, NPT3/4



Pneumatic connection G1, NPT1



Dimensions – Basic version

Download CAD data → www.festo.com

[D5]/[D6]/[D7]/[D8] Pressure regulation range, manually actuated

[G]/[NG] Module without connecting thread, without connecting plate

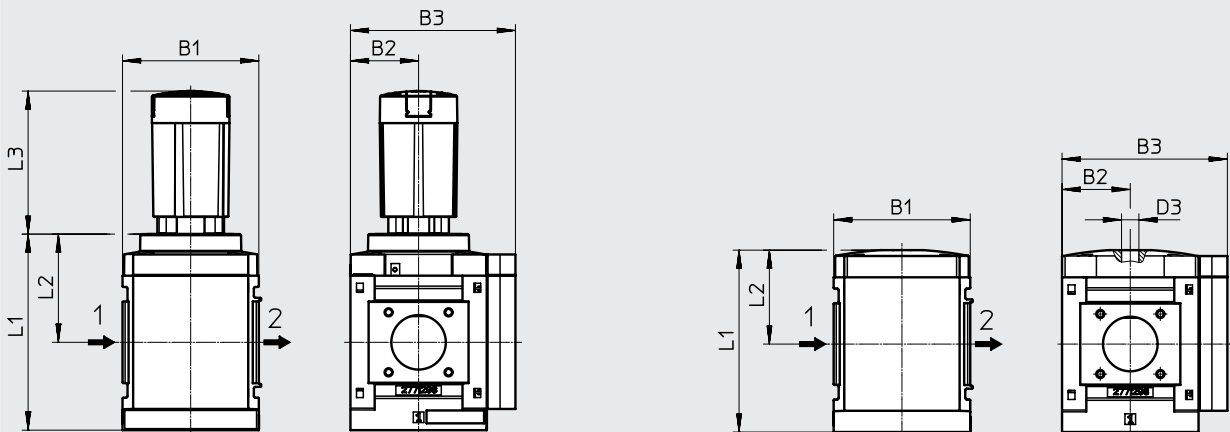
[VS] Cover plate

[AS] Rotary knob with latch, can be locked using accessories

[PO] Pressure regulation range, pneumatically actuated

[G]/[NG] Module without connecting thread, without connecting plate

[VS] Cover plate



→ Flow direction

| Type | B1 | B2 | B3 | D3 | L1 | | L2 | | L3 |
|-------------------------|----|----|-----|------|---------|-------------------|---------|-------------------|------|
| | | | | | Piloted | Directly actuated | Piloted | Directly actuated | |
| MS9-LR-G/NG-D5/D6/D7/D8 | 90 | 45 | 109 | – | 129 | 122 | 71.4 | 64 | 94.5 |
| MS9-LR-G/NG-PO | | | | G1/4 | 120 | – | 62 | – | – |

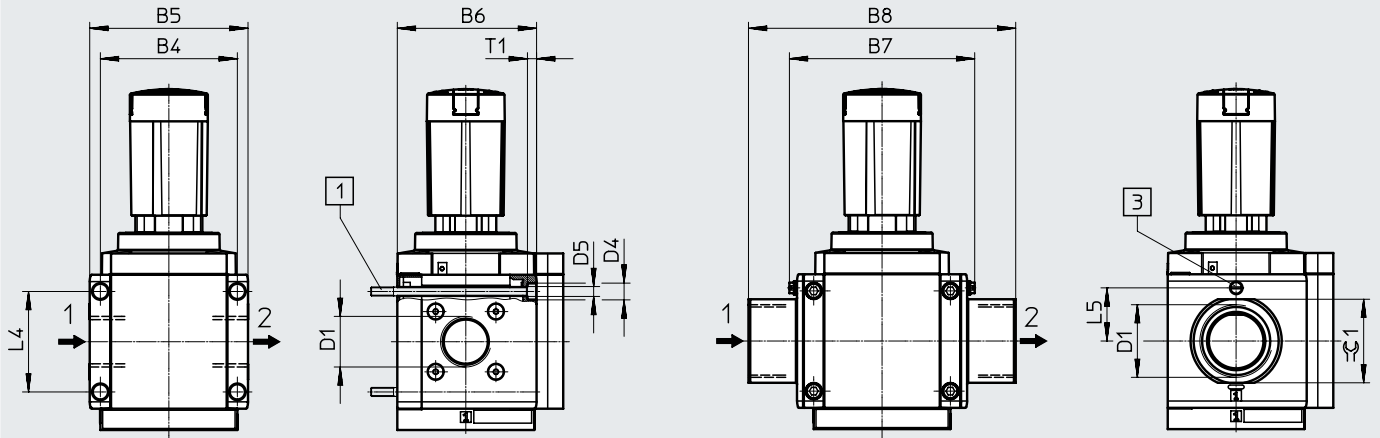
Datasheet

Dimensions – Connecting thread/connecting plate

Download CAD data → www.festo.com

[3/4]/[1]/[N3/4]/[N1] Female thread

[AG...]/[AQ...] Connecting plate



[1] Retaining screw M6xmin. 90 to DIN 912 (not included in the scope of delivery) for wall mounting without mounting bracket

[3] Earthing screw M4x8 (only with MS9-...-EX4)

→ Flow direction

| Type | B4 | B5 | B6 | B7 | | B8 | D1 | D4 | D5 | L4 | L5 | | T1 | ≅ 1 |
|-------------|----|-----|------|-----|-------|----|---------|----|-----|----|----|-------|----|-----|
| | | | | | [EX4] | | | | | | | [EX4] | | |
| MS9-LR-3/4 | 90 | 104 | 91.5 | - | - | - | G3/4 | 11 | 6.5 | 66 | - | 6 | - | |
| MS9-LR-1 | | | | | | | G1 | | | | | | | |
| MS9-LR-AGD | - | - | - | 112 | 122 | - | 132 | - | - | - | 35 | - | 30 | |
| MS9-LR-AGE | | | | | | | 132 | | | | | | 36 | |
| MS9-LR-AGF | | | | | | | 142 | | | | | | 41 | |
| MS9-LR-AGG | | | | | | | 162 | | | | | | 50 | |
| MS9-LR-AGH | | | | | | | 176 | | | | | | 55 | |
| MS9-LR-N3/4 | 90 | 104 | 91.5 | - | - | - | 3/4 NPT | 11 | 6.5 | 66 | - | 6 | - | |
| MS9-LR-N1 | | | | | | | 1 NPT | | | | | | | |
| MS9-LR-AQR | - | - | - | 112 | 122 | - | 132 | - | - | - | 35 | - | 30 | |
| MS9-LR-AQS | | | | | | | 132 | | | | | | 36 | |
| MS9-LR-AQT | | | | | | | 142 | | | | | | 41 | |
| MS9-LR-AQU | | | | | | | 162 | | | | | | 50 | |
| MS9-LR-AQV | | | | | | | 176 | | | | | | 55 | |

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

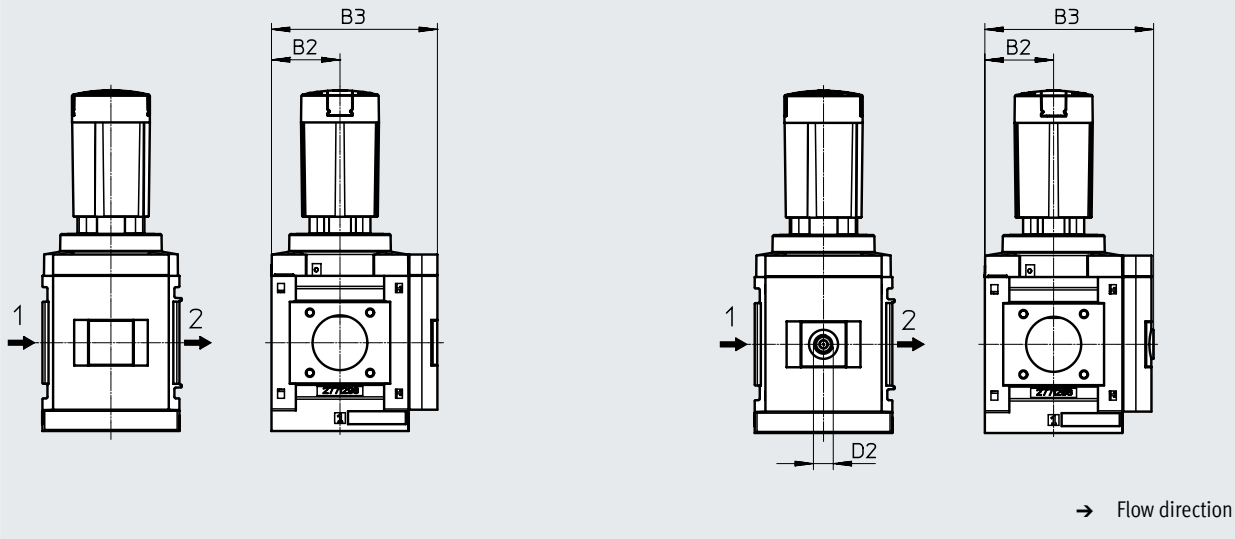
Datasheet

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

- [AG] Integrated MS pressure gauge with standard scale
- [RG] Integrated MS pressure gauge with red/green scale

- [A4] Adapter for EN pressure gauge 1/4, without pressure gauge



| Type | B2 | B3 | D2 |
|------------------|----|-----|------|
| MS9-LR-...-AG/RG | 45 | 109 | - |
| MS9-LR-...-A4 | | 110 | G1/4 |

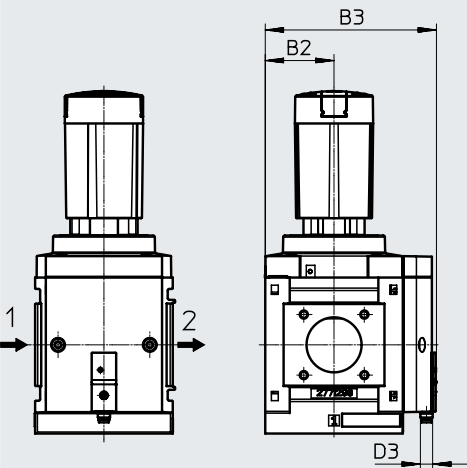
† Note: This product conforms to ISO 1179-1 and ISO 228-1.

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

- [AD7 ... 10] Pressure sensor without LCD display (switching status indicator only)

Datasheets → Internet: sde5



Variant AD7:
SDE5-D10-0-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/O contact

Variant AD9:
SDE5-D10-03-...-P-M8 with 3-pin plug M8x1, window comparator, 1 switching output PNP, N/O contact

Variant AD8:
SDE5-D10-C-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/C contact

Variant AD10:
SDE5-D10-C3-...-P-M8 with 3-pin plug M8x1, window comparator, 1 switching output PNP, N/C contact

| Type | B2 | B3 | D3 |
|-----------------------------|----|-----|----|
| MS9-LR-...-AD7/AD8/AD9/AD10 | 45 | 112 | M8 |

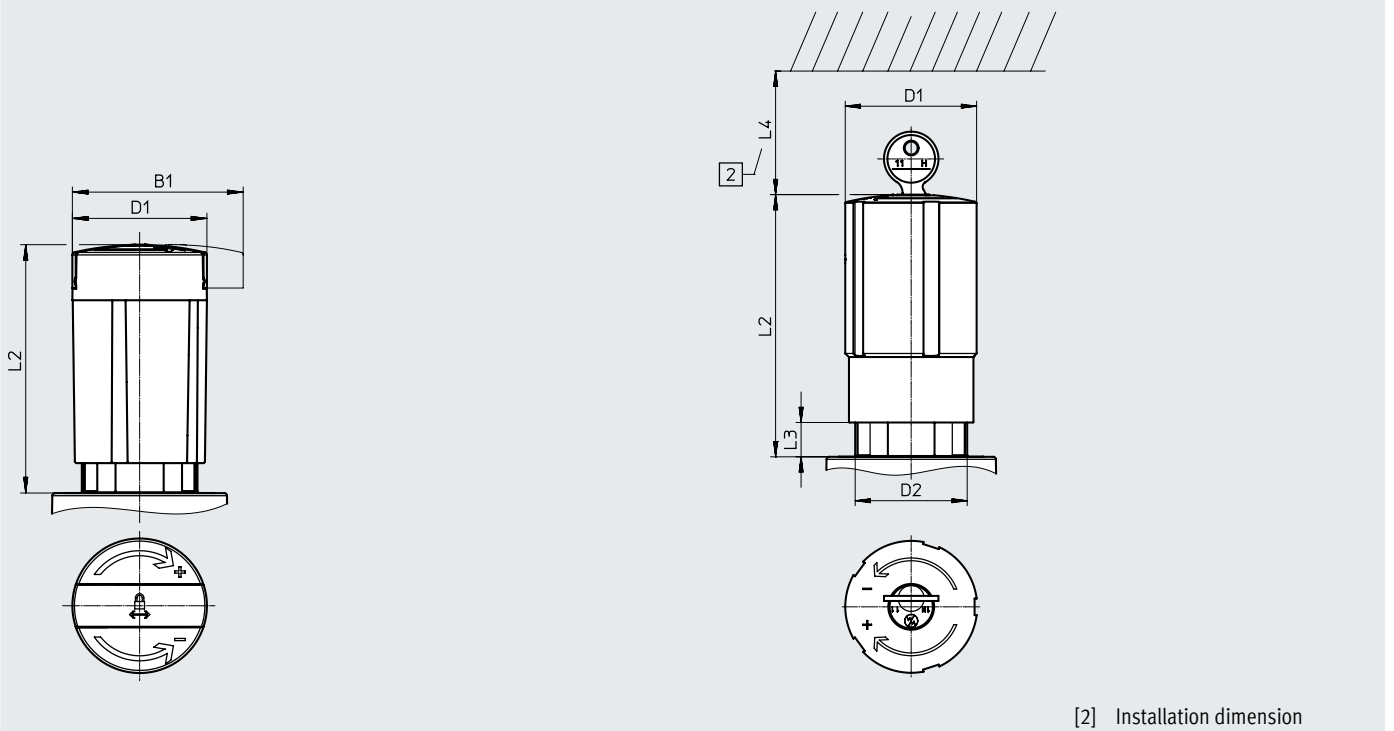
Datasheet

Download CAD data → www.festo.com

Dimensions – Rotary knob

[AS] Rotary knob with latch, can be locked using accessories

[E11] Rotary knob with integrated lock



[2] Installation dimension

| Type | B1 | D1 | D2 | L2 | L3 | L4 |
|---------------|------|------|-------|-------|------|----|
| MS9-LR...-AS | 64.4 | 51.2 | - | 94.5 | - | - |
| MS9-LR...-E11 | - | | M44x1 | 103.5 | 13.5 | 60 |

Ordering data

| Design | Pressure regulation range | Flow direction | Part no. | Type |
|---------------------------------------|---------------------------|--------------------|----------|---------------------------|
| MS9-LR... | | | | |
| Piloted diaphragm regulator | 0.5 ... 4 bar | From left to right | 564134 | MS9-LR-G-D5-AG-BAR-AS |
| | 0.5 ... 7 bar | From left to right | 564136 | MS9-LR-G-D6-AG-BAR-AS |
| | 0.5 ... 12 bar | From left to right | 564138 | MS9-LR-G-D7-AG-BAR-AS |
| Directly actuated diaphragm regulator | 0.5 ... 4 bar | From left to right | 564135 | MS9-LR-G-D5-DI-AG-BAR-AS |
| | | From left to right | 564140 | MS9-LR-NG-D5-DI-AG-PSI-AS |
| | 0.5 ... 7 bar | From left to right | 564137 | MS9-LR-G-D6-DI-AG-BAR-AS |
| | | From left to right | 564142 | MS9-LR-NG-D6-DI-AG-PSI-AS |

Ordering data – Modular product system

| Ordering table | | Grid dimension [mm] | 90 | Conditions | Code | Enter code |
|---|--|---------------------|---------|--------------|--------------|------------|
| Module no. | 562530 | | | | | |
| Series | Standard | | | | MS | MS |
| Size | 9 | | | | 9 | 9 |
| Function | Pressure regulator | | | | -LR | -LR |
| Pneumatic connection | Female thread G3/4 | | [1] | | -3/4 | |
| | Female thread G1 | | [1] | | -1 | |
| | Connecting plate G1/2 | | | | -AGD | |
| | Connecting plate G3/4 | | | | -AGE | |
| | Connecting plate G1 | | | | -AGF | |
| | Connecting plate G1 1/4 | | | | -AGG | |
| | Connecting plate G1 1/2 | | | | -AGH | |
| | Female thread 3/4 NPT | | [1] | | -N3/4 | |
| | Female thread 1 NPT | | [1] | | -N1 | |
| | Connecting plate 1/2 NPT | | [1] | | -AQR | |
| | Connecting plate 3/4 NPT | | [1] | | -AQS | |
| | Connecting plate 1 NPT | | [1] | | -AQT | |
| | Connecting plate 1 1/4 NPT | | [1] | | -AQU | |
| | Connecting plate 1 1/2 NPT | | [1] | | -AQV | |
| | Module without connecting thread, without connecting plate | | [1] | | -G | |
| | Module without connecting thread, without connecting plate (inch) | | [1] | | -NG | |
| Pressure regulation range/actuation | 0.5 ... 4 bar, manually actuated | | | | -D5 | |
| | 0.5 ... 7 bar, manually actuated | | | | -D6 | |
| | 0.5 ... 12 bar, manually actuated | | | | -D7 | |
| | 0.5 ... 16 bar, manually actuated | | [1] | | -D8 | |
| | Max. 16 bar, pneumatically actuated (pressure range determined by pilot regulator) | | [2] | | -PO | |
| Regulator type | Piloted | | | | | |
| | Directly actuated | | [3] | | -DI | |
| Pressure gauge/pressure gauge alternatives | MS pressure gauge | | | | -AG | |
| | Cover plate | | | | -VS | |
| | Adapter for EN pressure gauge 1/4, without pressure gauge | | | | -A4 | |
| | Integrated pressure gauge, red/green scale | | [4] | | -RG | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/O contact | | [1] [5] | | -AD7 | |
| | Pressure sensor with status indicator, plug M8, threshold value comparator, PNP, N/C contact | | [1] [5] | | -AD8 | |
| | Pressure sensor with status indicator, plug M8, window comparator, PNP, N/O contact | | [1] [5] | | -AD9 | |
| Pressure sensor with status indicator, plug M8, window comparator, PNP, N/C contact | | [1] [5] | | -AD10 | | |

[1] 3/4, 1, N3/4, N1, Not with EU EX4 certification
 AQR, AQS, AQT,
 AQU, AQV, G, NG,
 D8, AD7, AD8,
 AD9, AD10, E11,
 WPM

[2] PO Not with regulator type DI.
 Not with locking options AS, E11.

[3] DI Not with pressure regulation range D7, D8.

[4] RG Not with alternative pressure gauge scale PSI, PSI scale is only used as an auxiliary scale.

[5] AD7 ... AD10 Measuring range max. 10 bar.

Ordering data – Modular product system

| Ordering table | | Grid dimension [mm] | 90 | Conditions | Code | Enter code |
|----------------------------------|---|---------------------|----|------------|-------------|------------|
| Alternative pressure gauge scale | psi | | | [6] | -PSI | |
| | MPa | | | [6] | -MPA | |
| | bar | | | [6] | -BAR | |
| Secondary exhausting | With secondary exhausting | | | | | |
| | Without secondary exhausting | | | [7] | -OS | |
| Alternative mounting position | None | | | | | |
| | Rotary knob underneath (connection underneath with PO) | | | | -KD | |
| Locking option | Without (locking option AS is predefined) | | | | | |
| | Lockable using accessories | | | | -AS | |
| | With integrated lock | | | [1] | -E11 | |
| Type of mounting | Without mounting bracket | | | | | |
| | Mounting bracket standard design | | | [8] | -WP | |
| | Mounting bracket for hooking in service unit components | | | [1] [8] | -WPM | |
| | Mounting bracket for large wall gap | | | [8] | -WPB | |
| EU certification | None | | | | | |
| | II 2GD to EU Explosion Protection Directive (ATEX) | | | | -EX4 | |
| UL certification | None | | | | | |
| | cULus, ordinary location for Canada and USA | | | | -UL1 | |
| Flow direction | Flow direction from left to right | | | | | |
| | Flow direction from right to left | | | | -Z | |

[1] 3/4, 1, N3/4, N1, AQR, AQS, AQT, AQU, AQV, G, NG, D8, AD7, AD8, AD9, AD10, E11, WPM
Not with EU EX4 certification

[6] **PSI, MPA, BAR**

Not with pressure gauge alternatives VS, A4, AD7, AD8, AD9, AD10

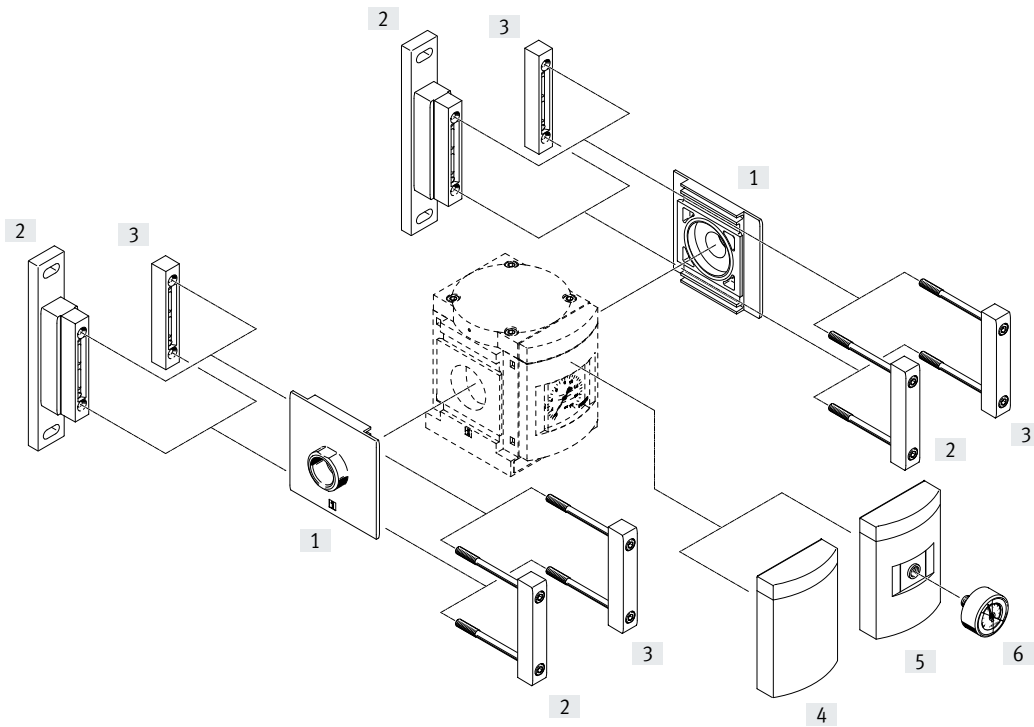
[7] **OS** Only with regulator type DI


[8] **WP, WPM, WPB**

Not with pneumatic connection G, NG

Peripherals overview

Pressure regulator MS12-LR

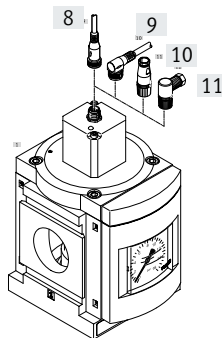
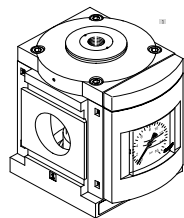
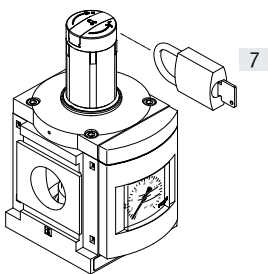


-  - **Note**
 Additional accessories:
 • Module connectors for combination with size MS9 → Internet: armv

Manually actuated

Pneumatically actuated

Electrically actuated



Peripherals overview

| Mounting attachments and accessories | | → Page/Internet |
|--------------------------------------|---|-----------------|
| [1] | Connecting plate SET MS12-AG... | ms12-ag |
| [2] | Mounting bracket MS12-WP | ms12-wp |
| [3] | Module connector MS12-MV | ms12-mv |
| [4] | Cover plate VS | 101 |
| [5] | Adapter for EN pressure gauge 1/4 A4 | 101 |
| [6] | Pressure gauge MA | 102 |
| [7] | Padlock LRVS-D | 102 |
| [8] | Connecting cable NEBU-M12G...-LE4 | 102 |
| [9] | Connecting cable NEBU-M12W...-LE4 | 102 |
| [10] | Sensor socket SIE-GD | 102 |
| [11] | Angled plug socket SIE-WD | 102 |

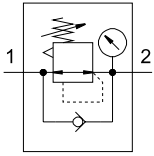
Type codes

| | | |
|------------|--|--|
| 001 | Series | |
| MS | MS series | |
| 002 | Size | |
| 12 | Grid dimension 124 mm | |
| 003 | Function | |
| LR | Pressure regulator | |
| 004 | Pneumatic connection | |
| AGF | Sub-base G1 | |
| AGG | Sub-base G11/4 | |
| AGH | Sub-base G11/2 | |
| AGI | Sub-base G2 | |
| G | Module without connecting thread, without sub-base | |
| 005 | Pressure regulation range | |
| D6 | 0.3 ... 7 bar | |
| D7 | 0.5 ... 12 bar | |
| D8 | 0.5 ... 16 bar | |
| PO | Max. 16 bar, pneumatically actuated (pressure range determined by pilot regulator) | |
| PE6 | 0.15 ... 6 bar, solenoid actuated (pilot control by proportional-pressure regulator) | |

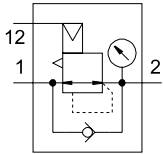
| | | |
|------------|---|--|
| 006 | Pressure gauge alternatives | |
| | None | |
| VS | Cover plate | |
| A4 | Adapter for EN pressure gauge 1/4, without pressure gauge | |
| 007 | Alternative pressure gauge scale | |
| | MS pressure gauge | |
| PSI | psi | |
| MPA | MPa | |
| 008 | Rotary knob alternative | |
| | None | |
| LD | Long rotary knob | |
| 009 | Type of mounting | |
| | Without mounting bracket | |
| WP | Mounting bracket basic design | |
| 010 | Flow direction | |
| | Flow direction from left to right | |
| Z | Flow direction from right to left | |

Datasheet

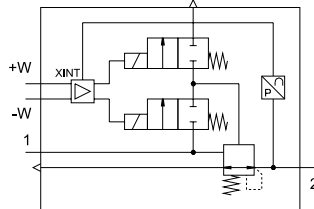
Pressure regulation range/actuation, manually actuated







Pressure regulation range/actuation, pneumatically actuated



Pressure regulation range/actuation, electrically actuated



-  - Flow rate
12000 ... 22000 l/min
-  - Temperature range
-10 ... +60°C
-  - Operating pressure
0.08 ... 2.1 MPa
-  - www.festo.com



The pressure regulator maintains an essentially constant output pressure p2, independently of pressure fluctuations in the system and air consumption. The output pressure p2 can be set within the pressure regulation range either manually using the rotary knob, pneumatically via pilot pressure p12 by an external pilot regulator, or electrically via setpoint signals.

When the operating pressure or the voltage for the setpoint signals is switched off, the output pressure p2 is exhausted via port 3 (secondary exhausting).

- Good regulation characteristics with minimal hysteresis and input pressure compensation
- High flow rate performance with minimal pressure drop
- Actuator lock to protect the set values from being adjusted
- With secondary exhausting
- Pressure gauge connection for different fitting options

| General technical data | | [D6] | [D7] | [D8] | [PO] | [PE6] |
|---|-------|---|---------------------------------|---------------------------------|--------------------------------------|-----------------------|
| Pressure regulation range/actuation | | | | | | |
| Pneumatic connection 1, 2 | | G1, G1 1/4, G1 1/2 or G2 | | | | |
| Connecting plate [AG...] | | - | | | | |
| Module without connecting thread/connecting plate [G] | | - | | | | |
| Pilot air port 12 | | G1/4 (MS12-LR-...-PO) | | | | |
| Design | | Pressure regulator with/without pressure gauge | | | | |
| | | Piloted diaphragm regulator (MS12-LR-...-D6/D7/D8/PE6) | | | | |
| | | Diaphragm regulator (MS12-LR-...-PO) | | | | |
| Regulator function | | Output pressure constant, with primary pressure compensation, with return flow, with secondary exhausting | | | | |
| Type of mounting | | Via accessories | | | | |
| | | In-line installation | | | | |
| Mounting position | | Any | | | | |
| Actuator lock | | Rotary knob with latch, can be locked using accessories | | | | |
| | | Rotary knob with integrated lock | | | | |
| Pressure regulation range | [MPa] | 0.03 ... 0.7 | 0.05 ... 1.2 | 0.05 ... 1.6 | 0.05 ... 1.6 | 0.015 ... 0.6 |
| | [bar] | 0.3 ... 7 | 0.5 ... 12 | 0.5 ... 16 | 0.5 ... 16 | 0.15 ... 6 |
| | [psi] | 4.35 ... 102 | 7.25 ... 174 | 7.25 ... 232 | 7.25 ... 232 | 2.175 ... 87 |
| Actuation | | Manually actuated ¹⁾ | Manually actuated ¹⁾ | Manually actuated ¹⁾ | Pneumatically actuated ¹⁾ | Electrically actuated |
| Max. pressure hysteresis | [MPa] | 0.04 | | | | 0.004 |
| | [bar] | 0.4 | | | | 0.04 |
| | [psi] | 5.8 | | | | 0.58 |
| Pressure indication | | With pressure gauge | | | | |

1) Prerequisite $P_1 = P_2 + 1 \text{ bar}$.

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

Datasheet

| Flow rates | | |
|--|-----------------------------------|---------------------|
| Pressure regulation range/actuation | [D6]/[D7]/[D8]/[PO] ¹⁾ | [PE6] ²⁾ |
| Standard nominal flow rate q _{nN} ³⁾ [l/min] | | |
| q _{nN} 1 → 2 | G1 | 13000 |
| | G1 1/4 | 13500 |
| | G1 1/2 | 16000 |
| | G2 | 22000 |
| Secondary exhaust flow rate [l/min] | | |
| q _n 2 → 3 | ≤ 600 | ≤ 600 |

- 1) Measured at p₁ = 10 bar and p₂ = 6 bar, Δp = 0.5 bar
- 2) Measured at p₁ = 7 bar and p₂ = 6 bar, Δp = 0.5 bar
- 3) Dependent on the selected connecting plate; must be ordered separately as an accessory → Internet: ms12-ag

| Electrical data | | |
|-------------------------------------|--------|---------------|
| Pressure regulation range/actuation | [PE6] | |
| Operating voltage range | [V DC] | 21.6 ... 26.4 |
| Nominal operating voltage | [V DC] | 24 |
| Residual ripple | [%] | 10 |
| Analogue input signal range | [V] | 0 ... 10 |
| Max. current consumption | [A] | 0.15 |
| Max. electrical power consumption | [W] | 3.6 |
| Degree of protection | | IP65 |

| Operating and environmental conditions | | |
|--|---|---|
| Pressure regulation range/actuation | [D6]/[D7]/[D8]/[PO] | [PE6] |
| Operating pressure | [MPa] | 0.08 ... 2.1 |
| | [bar] | 0.8 ... 21 |
| | [psi] | 11.6 ... 304.5 |
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] | |
| | Inert gases | |
| Ambient temperature | [°C] | -10 ... +60 |
| Temperature of medium | [°C] | -10 ... +60 |
| Storage temperature | [°C] | -10 ... +60 |
| Corrosion resistance class CRC ¹⁾ | | 2 |
| CE marking (see declaration of conformity) ²⁾ | - | To EU EMC Directive To EU RoHS Directive |
| UKCA marking (see declaration of conformity) ²⁾ | - | To UK EMC regulations To UK RoHS regulations |
| KC marking | - | KC EMC |

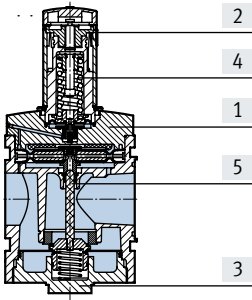
- 1) More information www.festo.com/x/topic/crc
- 2) More information: www.festo.com/catalogue/ms12-lr → Support/Downloads.
If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

| Weight [g] | |
|--|------|
| Pressure regulator | 4000 |
| Pressure regulator with rotary knob with integrated lock | 4300 |

Datasheet

Materials

Sectional view



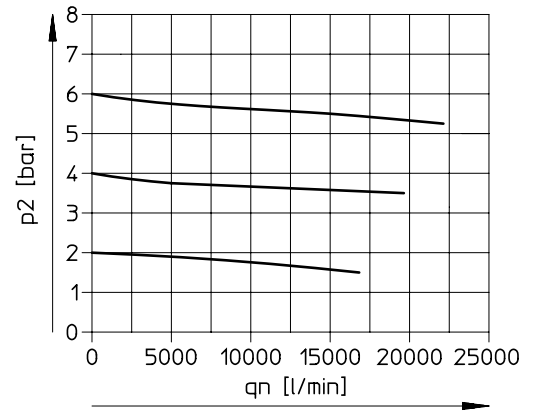
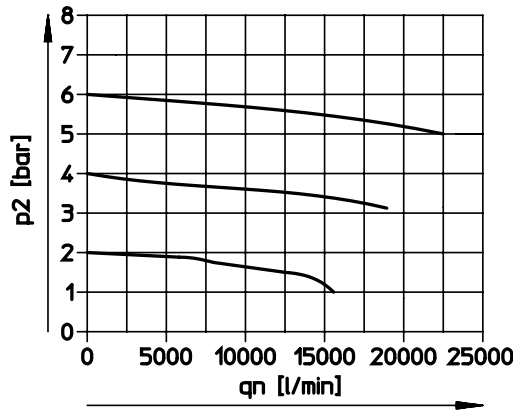
| Pressure regulator | | |
|------------------------|----------------------------------|--|
| [1] | Housing | Die-cast aluminium |
| [2] | Rotary knob | Reinforced PA, POM |
| | Rotary knob with integrated lock | Wrought aluminium alloy |
| [3] | Bottom cover | Wrought aluminium alloy |
| [4] | Spring | Spring steel |
| [5] | Valve tappet | Wrought aluminium alloy, NBR, high-alloy stainless steel |
| - | Seals, diaphragm | NBR |
| Note on materials | | RoHS-compliant |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L |

Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 10$ bar) (MS12-LR-...-D6/D7/D8/PO only)

Pneumatic connection G1 with connecting plate MS12-AGF

Pneumatic connection G1 1/4 with connecting plate MS12-AGG

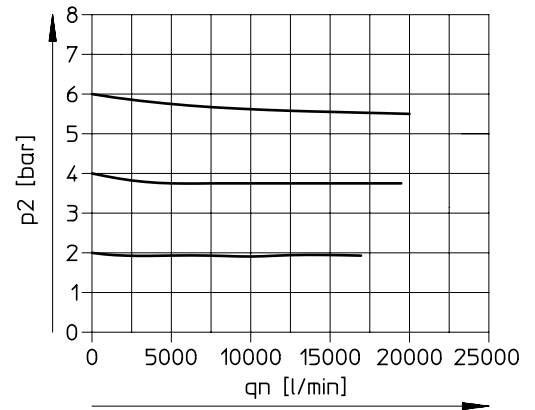
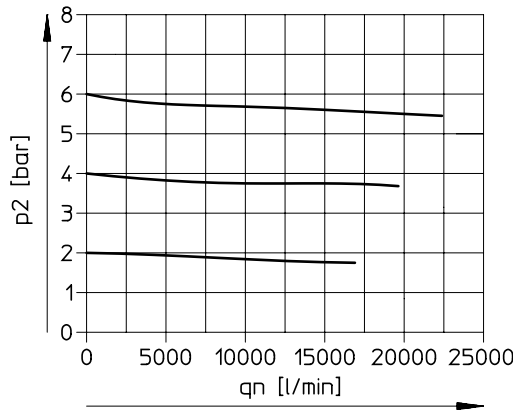
Input pressure $p_1 = 10$ bar



Pneumatic connection G1 1/2 with connecting plate MS12-AGH

Pneumatic connection G2 with connecting plate MS12-AGI

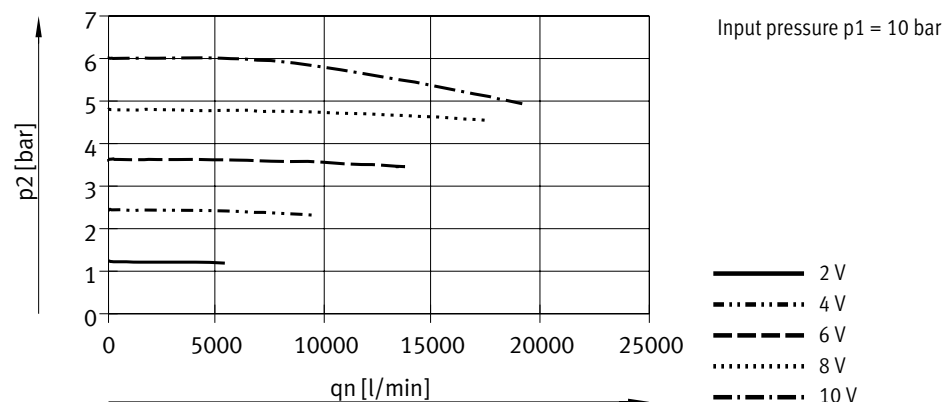
Input pressure $p_1 = 10$ bar



Datasheet

Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 10$ bar) (MS12-LR-...-PE6 only)

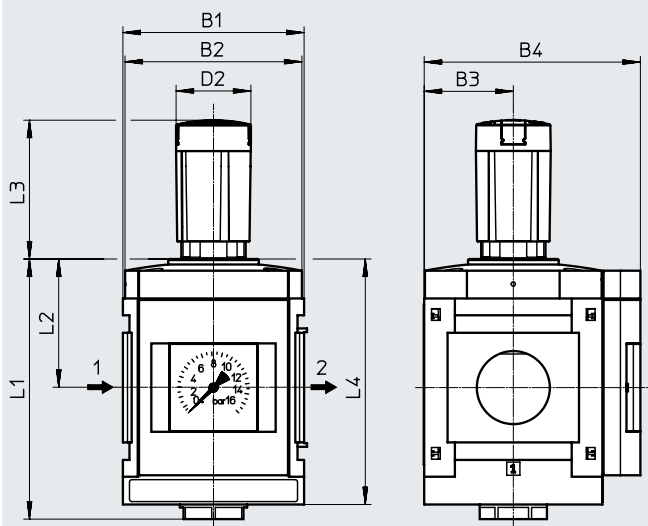
Pneumatic connection G1 1/2 with connecting plate MS12-AGH



Dimensions – Basic version

Download CAD data → www.festo.com

- [D6]/[D7]/[D8] Pressure regulation range, manually actuated
- [G] Module without connecting thread, without connecting plate
- [] Integrated MS pressure gauge with standard scale
- [LD-AS] Rotary knob, long, with latch, can be locked using accessories



| Type | B1 | B2 | B3 | B4 | D2 ∅ | L1 | L2 | L3 | L4 |
|----------------------|-----|-----|----|-----|---------|-----|----|----|-----|
| MS12-LR-...-D6/D7/D8 | 124 | 122 | 61 | 148 | 51.2 | 178 | 88 | 95 | 168 |

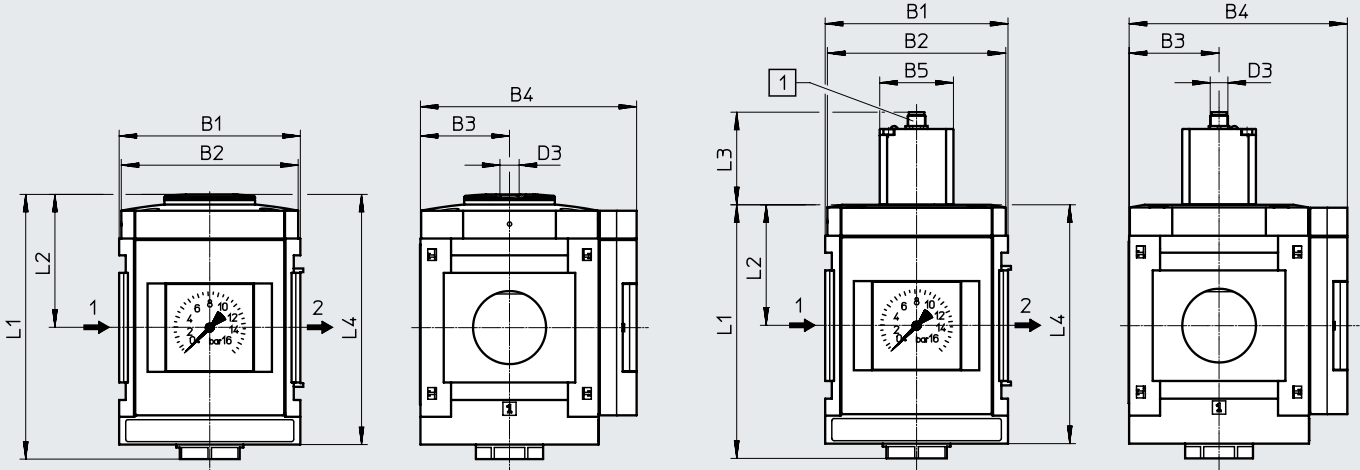
Datasheet

Dimensions – Pressure regulation range

Download CAD data → www.festo.com

- [PO] Pressure regulation range, pneumatically actuated
- [G] Module without connecting thread, without connecting plate
- [] Integrated MS pressure gauge with standard scale

- [PE6] Pressure regulation range, electrically actuated
- [G] Module without connecting thread, without connecting plate
- [] Integrated MS pressure gauge with standard scale



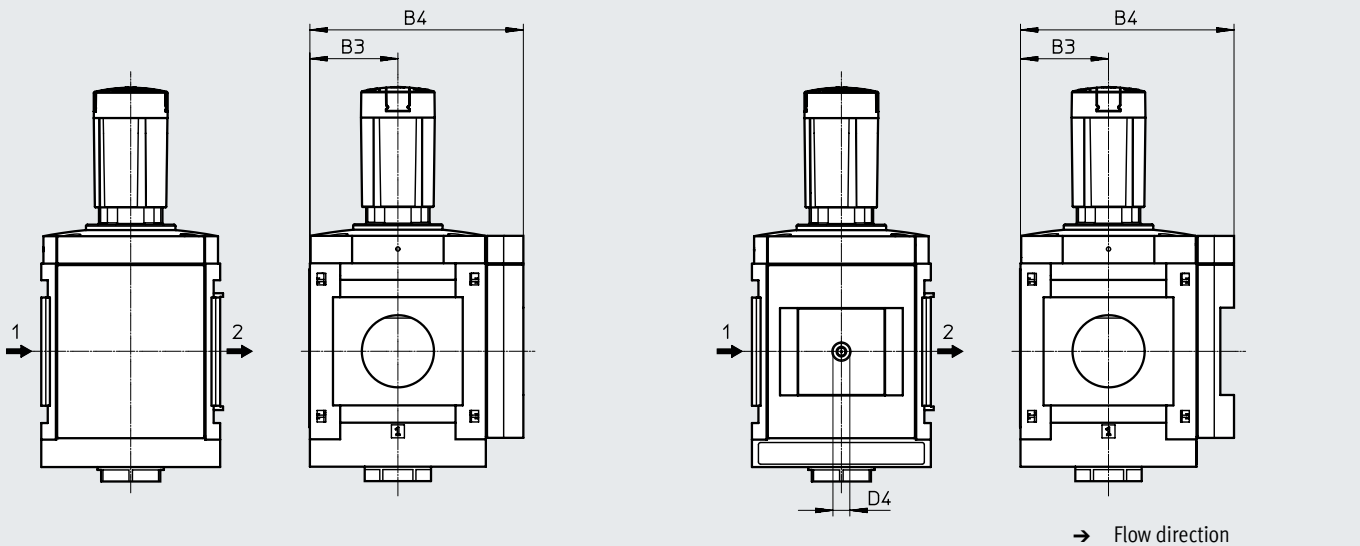
- [1] Suitable for
 - Connecting cable NEBU-M12G...-LE4/ NEBU-M12W...-LE4
 - Sensor socket SIE-GD
 - Angled plug socket SIE-WD-TR
- Flow direction

| Type | B1 | B2 | B3 | B4 | B5 | D3 | L1 | L2 | L3 | L4 |
|----------------|-----|-----|----|-----|----|------|-----|----|------|-----|
| MS12-LR...-PO | 124 | 122 | 61 | 148 | – | G1/4 | 181 | 91 | – | 171 |
| MS12-LR...-PE6 | | | | | 50 | M12 | 172 | 82 | 62.7 | 162 |

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

- [VS] Cover plate
- [A4] Adapter for EN pressure gauge 1/4, without pressure gauge



| Type | B3 | B4 | D4 |
|---------------|----|-----|------|
| MS12-LR...-VS | 61 | 148 | – |
| MS12-LR...-A4 | 61 | 148 | G1/4 |

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

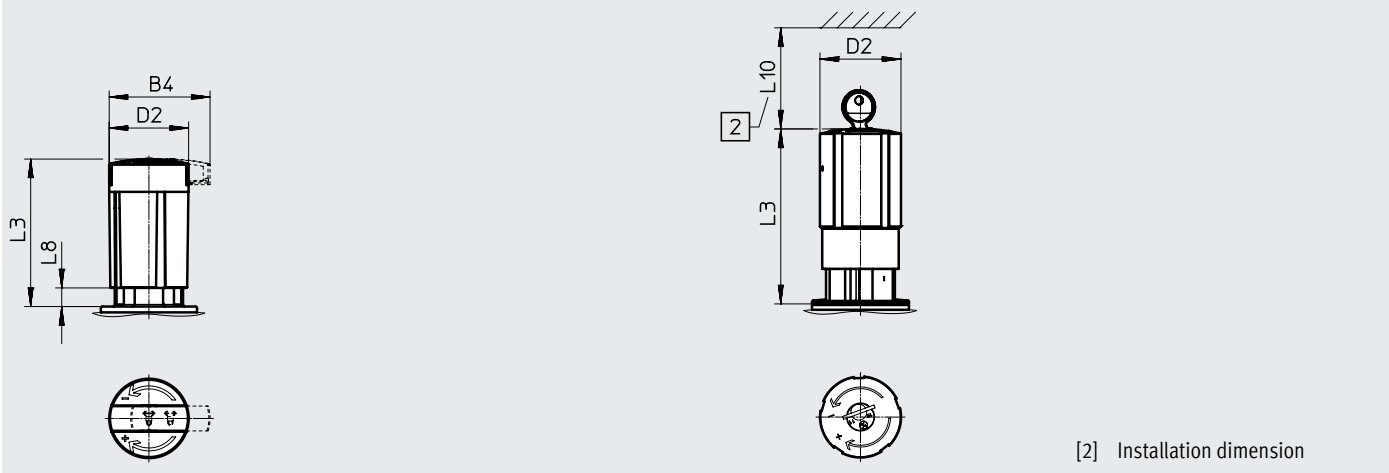
Datasheet

Dimensions – Rotary knob

Download CAD data → www.festo.com

[LD-AS] Rotary knob, long, with latch, can be locked using accessories

[E11] Rotary knob with integrated lock



| Type | B4 | D2 ∅ | L3 | L8 | L10 |
|-------------------|------|---------|-----|----|-----|
| MS12-LR-...-LD-AS | 64.4 | 51.2 | 95 | 12 | – |
| MS12-LR-...-E11 | – | 51.8 | 112 | – | 60 |

Ordering data


| Design | Pressure regulation range | Flow direction | Part no. | Type |
|-----------------------------|---------------------------|--------------------|----------|--------------------|
| MS12-LR... | | | | |
| Piloted diaphragm regulator | 0.15 ... 6 bar | From left to right | 564888 | MS12-LR-G-PE6 |
| | 0.5 ... 12 bar | From left to right | 537148 | MS12-LR-G-D7-LD-AS |
| Diaphragm regulator | 0.5 ... 16 bar | From left to right | 541680 | MS12-LR-G-PO |

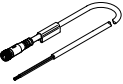
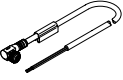
Ordering data – Modular product system

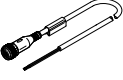
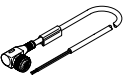
| Ordering table | | Grid dimension [mm] | 124 | Conditions | Code | Enter code |
|-------------------------------------|--|---------------------|---------|------------|-------------|------------|
| Module no. | | 535021 | | | | |
| Series | Standard | | | | MS | MS |
| Size | 12 | | | | 12 | 12 |
| Function | Pressure regulator | | | | -LR | -LR |
| Pneumatic connection | Connecting plate G1 | | | | -AGF | |
| | Connecting plate G1 1/4 | | | | -AGG | |
| | Connecting plate G1 1/2 | | | | -AGH | |
| | Connecting plate G2 | | | | -AGI | |
| | Module without connecting thread, without connecting plate | | | | -G | |
| Pressure regulation range/actuation | 0.3 ... 7 bar, manually actuated | | | | -D6 | |
| | 0.5 ... 12 bar, manually actuated | | | | -D7 | |
| | 0.5 ... 16 bar, manually actuated | | | | -D8 | |
| | Max. 16 bar, pneumatically actuated (pressure range determined by pilot regulator) | | [1] [2] | | -PO | |
| | 0.15... 6 bar, electrically actuated (pilot control using proportional pressure regulator) | | [1] [2] | | -PE6 | |
| Pressure gauge alternatives | MS pressure gauge | | | | | |
| | Cover plate | | | | -VS | |
| | Adapter for EN pressure gauge 1/4, without pressure gauge | | | | -A4 | |
| Alternative pressure gauge scale | MS pressure gauge, bar | | | | | |
| | psi | | [3] | | -PSI | |
| | MPa | | [3] | | -MPA | |
| Rotary knob alternative | None | | | | | |
| | Long rotary knob | | [2] | | -LD | |
| Locking option | None | | [4] | | | |
| | Lockable using accessories | | [5] | | -AS | |
| | With integrated lock | | | | -E11 | |
| Type of mounting | Without mounting bracket | | | | | |
| | Mounting bracket standard design | | [6] | | -WP | |
| Flow direction | Flow direction from left to right | | | | | |
| | Flow direction from right to left | | | | -Z | |


- [1] PO, PE6 Not with rotary knob alternative LD.
Not with locking option AS.
- [2] PO, PE6, LD Not with locking option E11.
- [3] PSI, MPA Not with pressure gauge alternatives VS, A4.
- [4] Must be selected if pressure regulation range/actuation PO, PE6 is selected.
Not with pressure regulation range/actuation D6, D7, D8.
Not with rotary knob alternative LD.
- [5] AS Only with rotary knob alternative LD.
- [6] WP Only with connecting plate AGF, AGG, AGH or AGI.


Accessories

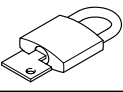
| Ordering data – Pressure gauge MA | | | | | | |
|--|--|----------------------|---------------|-----------|------------------|----------------------------|
| | Nominal size | Pneumatic connection | Display range | | Part no. | Type |
| | | | [bar] | [psi] | | |
|  | Pressure gauge MA, EN 837-1 | | | | | Datasheets → Internet: ma |
| | 40 | R1/4 | 0 ... 16 | 0 ... 232 | 187080 | MA-40-16-R1/4-EN |
| | | G1/4 | 0 ... 16 | 0 ... 232 | 183901 | MA-40-16-G1/4-EN |
| | Pressure gauge MA, EN 837-1, with red/green range | | | | | Datasheets → Internet: ma |
| | 40 | R1/8 | 0 ... 16 | – | 525726 | MA-40-16-R1/8-E-RG |
| | 50 | R1/4 | 0 ... 16 | – | 525729 | MA-50-16-R1/4-E-RG |
| | Precision pressure gauge MAP, EN 837-1 | | | | | Datasheets → Internet: map |
| | 40 | R1/8 | 0 ... 1 | 0 ... 15 | 161126 | MAP-40-1-1/8-EN |
| | | | 0 ... 4 | 0 ... 58 | 162842 | MAP-40-4-1/8-EN |
| | | | 0 ... 6 | 0 ... 87 | 161127 | MAP-40-6-1/8-EN |
| 0 ... 16 | | | 0 ... 232 | 161128 | MAP-40-16-1/8-EN | |

| Ordering data – Connecting cable NEBU-M8 | | | | | Datasheets → 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 |
| | | 4 | 2.5 | 541342 | NEBU-M8G4-K-2.5-LE4 |
|  | M8x1, angled socket | 3 | 2.5 | ★ 541338 | NEBU-M8W3-K-2.5-LE3 |
| | | | 5 | ★ 541341 | NEBU-M8W3-K-5-LE3 |
| | | 4 | 2.5 | 541344 | NEBU-M8W4-K-2.5-LE4 |

| Ordering data – Connecting cable NEBU-M12 | | | | | Datasheets → 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 |
| | | 5 | 2.5 | 541330 | NEBU-M12G5-K-2.5-LE5 |
| | | | 5 | 541331 | NEBU-M12G5-K-5-LE5 |
| | | | 5 | 541332 | NEBU-M12G5-K-5-LE5 |
|  | M12x1, angled socket | 4 | 2.5 | 550325 | NEBU-M12W5-K-2.5-LE4 |
| | | | 5 | 541329 | NEBU-M12W5-K-5-LE4 |

| Ordering data – Sensor socket SIE-GD | | | | Datasheets → Internet: sie-gd |
|--|-----------------------|----------|--------|-------------------------------|
| | Electrical connection | Part no. | Type | |
|  | M12x1, 4-pin | 18494 | SIE-GD | |

| Ordering data – Angled plug socket SIE-WD | | | | Datasheets → Internet: sie-wd |
|--|-----------------------|----------|-----------|-------------------------------|
| | Electrical connection | Part no. | Type | |
|  | M12x1, 4-pin | 12956 | SIE-WD-TR | |

| Ordering data – Padlock LRVS-D | | | |
|--|------------|----------|--------|
| | Weight [g] | Part no. | Type |
|  | 120 | 193786 | LRVS-D |