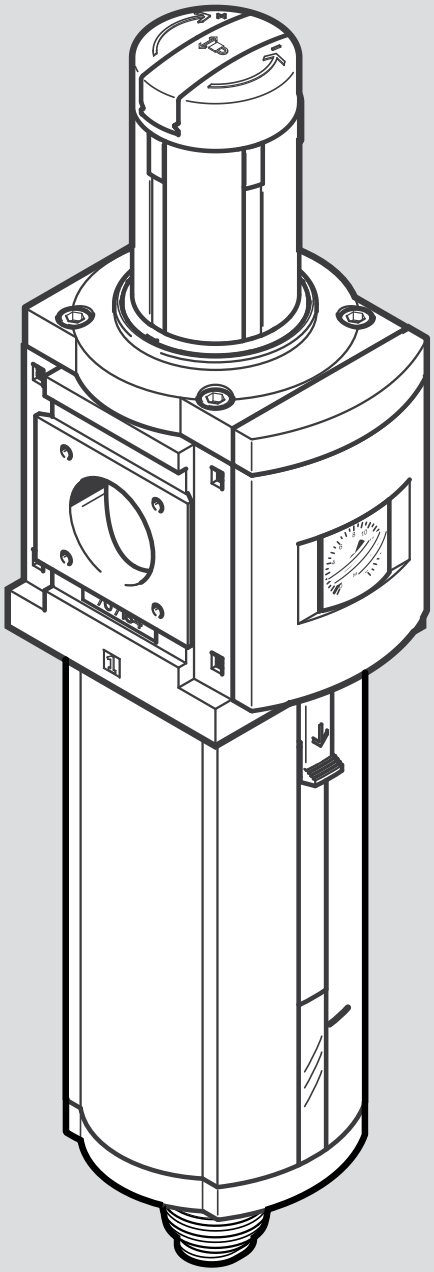
MS9-LFR
Filter regulator



FESTO

Operating instruction

8207671

8207671
2024-11e
[8207673]

Original instructions

Table of contents

1 Applicable documents

All available documents for the product ➔ www.festo.com/sp.

2 Safety

2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications.
- Only use the product if it is in perfect technical condition.
- Observe the identifications on the product.
- Take into account the ambient conditions at the location of use.
- Before working on the product, switch off the compressed air supply and lock it to prevent it from being switched on again.

2.2 Intended use

The filter regulator controls the compressed air in the downstream string at the specified outlet pressure. The filter regulator smooths pressure fluctuations and removes dirt particles and condensate from the compressed air.

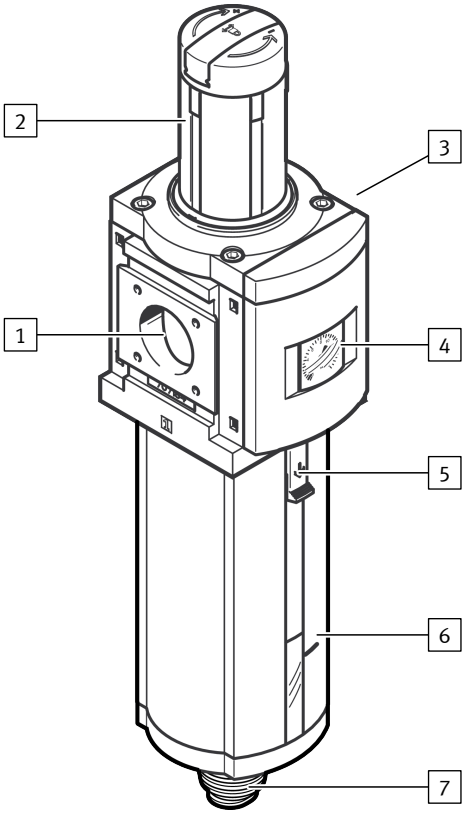
2.3 Training of qualified personnel

Work on the product may only be carried out by qualified personnel who can evaluate the work and detect dangers. The qualified personnel have knowledge and experience in pneumatics.

3 Additional information

- Contact the regional Festo contact if you have technical problems ➔ www.festo.com.
- Accessories and spare parts ➔ www.festo.com/catalogue.

4 Product design



1 Pneumatic port 1
2 Rotary knob
3 Pneumatic port 2
4 Pressure gauge
5 Lock release
6 Filter bowl
7 Drain screw, drain button

Fig. 1: Product design

5 Mounting

5.1 Direct fastening

Requirements:
- Space required above the product: ≥ 60 mm
- Space required under the product: ≥ 150 mm
- Shut-off valves are installed in the compressed air supply line.

1. Align the product vertically in the flow direction from 1 to 2. The numbers on the housing are provided for orientation.
2. Use an extraction tool to press the protective caps out of the connection plates from back to front.
3. Mount the product with 4 M6 screws.
   - Minimum length of screws: 90 mm
   - Distance between drilled holes:
     - Width: 90 mm
     - Height: 66 mm

5.2 Wall mounting

Requirements:
- Space required above the product: ≥ 60 mm
- Space required under the product: ≥ 150 mm
- Shut-off valves are installed in the compressed air supply line.

1. Align the product vertically in the flow direction from 1 to 2. The numbers on the housing are provided for orientation.

2. Mount the product on the mounting surface with the mounting accessories ➔ 3 Additional information.

6 Installation

1. Use fittings, seals and suitable tubing from the Festo catalogue ➔ 3 Additional information.
2. Screw the fittings into the pneumatic ports.
3. Insert suitable tubing into the fitting to the stop.
   – Position the tubing axial to the pneumatic ports.

7 Commissioning

1. Pull the rotary knob to unlock it.
2. Turn the rotary knob completely in the [–] direction.
3. Slowly pressurise the system. Turn the rotary knob in the [+] direction until the desired pressure is reached.
   – Observe the permissible pressure ranges ➔ 10.2 Technical data, pneumatic. The input pressure p1 should always be at least 0.05 MPa (0.5 bar; 7.3 psi) higher than the set output pressure p2.
4. Press the rotary knob to lock it.

8 Maintenance

8.1 Draining condensate

For MS9-LFR-...-M

When the condensate level reaches the mark on the inspection window of the filter bowl:

1. Turn the drain screw anticlockwise as seen from below.
   ⇨ The condensate is drained.
2. Turn the drain screw clockwise as seen from below.

For MS9-LFR-...-H

Option 1:

- Briefly exhaust the product.
  ⇨ The condensate drains automatically.

Option 2:

1. Turn the drain screw anticlockwise as seen from below.
   ⇨ The condensate is drained.
2. Turn the drain screw clockwise as seen from below.

For MS9-LFR-...-V/-VC

The product drains automatically.
The condensate can also be drained manually.

- Press the drain push button from bottom to top.
  ⇨ The condensate is drained.

For MS9-LFR-...-E...

The product drains automatically ➔ Operating instructions for condensate drain PWEA-AC/-AP.

8.2 Changing filter

Replace the filter cartridge if the flow rate is reduced even though the pressure setting is unchanged.

1. Exhaust the product.
2. Pull down the lock release on the filter bowl.
3. Turn the filter bowl anticlockwise (as seen from below) until the stop can be felt.
4. Remove the filter bowl from the housing.
5. Unscrew the filter plate anticlockwise when viewed from below.
6. Remove the old filter.
7. Place the new filter with the larger diameter on the support.
8. Screw in the filter plate. Maximum tightening torque: 0.5 Nm
9. Mount the filter bowl:
   – Align the lock release of filter bowl with the cutout on the housing and insert it.
   – Turn the filter bowl clockwise until the lock audibly engages at the stop.

8.3 Cleaning

- Clean the outside of the product as required with a soft cloth.
  Permissible cleaning agents:
  – Soap solution, maximum +60 °C
  – Petroleum ether, free of aromatic compounds

9 Fault clearance

Malfunction	Cause	Remedy
Low flow rate. The operating pressure drops during air consumption.	The compressed air supply line is constricted.	– Check the compressed air supply line.
	The filter cartridge is dirty.	– Replace the filter cartridge.
The operating pressure rises above the set working pressure.	The valve disc at the sealing seat is defective.	– Replace the product.
Audible, continuous leakage at the rotary knob.	The valve seat is damaged.	– Replace the product.
Audible leakage at the condensate drain.	The condensate drain is leaking.	– Replace the product.

Tab. 1: Fault clearance

10 Technical data

10.1 Technical data, general

MS9-LFR-...		-M	-H	-V/-VC	-E...
Certificates, declaration of conformity		➔ www.festo.com/sp			
Mounting position	[°]	Vertical ± 5			
Condensate drain function		Manual rotating	Semi-automatic	Fully automatic, mechanical	Fully automatic, electric
Storage temperature	[°C]	–10 ... +60			+1 ... +60
Temperature of medium[1)]	[°C]	–10 ... +60			+1 ... +60
Ambient temperature	[°C]	–10 ... +60			+1 ... +60
Pneumatic port 1					
MS9-LFR-3/4		G 3/4			
MS9-LFR-G1		G1			
Pneumatic port 2					
MS9-LFR-3/4		G 3/4			
MS9-LFR-G1		G1			

1) When using products with condensate drain, the operating medium must have a pressure dew point of ≤ −10 °C.

Tab. 2: Technical data, general

10.2 Technical data, pneumatic

MS9-LFR-...		-M	-H	-V/-VC	-E...
Operating medium		Compressed air to ISO 8573-1:2010 [–:4:–]		Compressed air to ISO 8573-1:2010 [7:4:–]	Compressed air to ISO 8573-1:2010 [–:4:–]
		Inert gases			
Information on the operating medium		Not compatible with ester oil			
Operating pressure	[MPa]	1 ... 2	0.15 ... 1.2	0.2 ... 1.2	0.1 ... 1.6
	[bar]	1 ... 20	1.5 ... 12	2 ... 12	1 ... 16
	[psi]	14.5 ... 290	21.8 ... 174	29 ... 174	14.5 ... 232
Pressure regulation range					
MS9-LFR-...-D5	[MPa]	0.05 ... 0.4			
	[bar]	0.5 ... 4			
	[psi]	7.25 ... 58			
MS9-LFR-...-D6	[MPa]	0.05 ... 0.7			
	[bar]	0.5 ... 7			
	[psi]	7.25 ... 102			
MS9-LFR-...-D7	[MPa]	0.05 ... 1.2			
	[bar]	0.5 ... 12			
	[psi]	7.25 ... 174			
MS9-LFR-...-D8	[MPa]	0.05 ... 1.6			
	[bar]	0.5 ... 16			
	[psi]	7.25 ... 232			

Tab. 3: Technical data, pneumatic

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