

MS4-EM1FR-...-B

Service unit



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8195515

Operating instruction

8195515
2023-05a
[8195517]

Translation of the original instructions

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1 Applicable documents

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

Document	Product	Content
Operating instruction	Filter regulator MS4-LFR-...-B	–
Assembly instructions	Wall mounting kit MS4-WPE(-B)	–

Tab. 1: Applicable documents

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 on-off valve pressurises and exhausts pneumatic systems. The on/off valve is not suitable for continuous switching operation for pneumatic components.
- The filter regulator controls the compressed air in the downstream string at the set 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 skills and experience in dealing with pneumatic (open-loop) control technology.

3 Additional information

- Contact the regional Festo contact if you have technical problems
→ www.festo.com.
- Accessories → www.festo.com/catalogue.

4 Product design

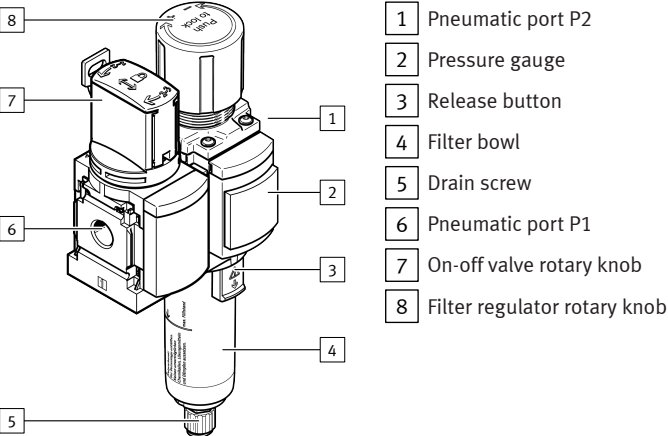


Fig. 1: Service unit MS4-EM1FR-...-B

5 Assembly

5.1 Wall mounting

- Shut-off valves are installed in the compressed air supply line.
- Fasten the product to the mounting surface with the mounting accessories
→ 3 Additional information.

6 Installation, pneumatic

1. Screw the fittings into the pneumatic ports.
2. Note the maximum screw-in depth of the connector thread. Screwing in deeper will reduce the flow rate and can damage the housing. Maximum screw-in depth: 8.5 mm
3. Note the maximum screw-in depth of the connector thread. Screwing in deeper will reduce the flow rate and can damage the housing. Maximum screw-in depth: 13.5 mm
4. Insert suitable tubing into the fitting to the stop.
 - Position tubing axial to the pneumatic ports.
 - Do not bend the tubing more than the minimum bending radius.

7 Commissioning

1. Unlock the filter regulator rotary knob [8] by pulling it.
2. Turn the filter regulator rotary knob [8] anti-clockwise in the – direction to the stop.
3. Pressurise the system slowly:
 - The on/off valve rotary knob [7] is fitted with a lock function. When using the lock function: open and remove the lock.
 - Turn the on/off valve rotary knob [7] anticlockwise to the stop, 90°. The housing will overflow when the rotary knob is turned to its end positions during pressurisation and exhaust of the on/off valve.
 - Turn the filter regulator rotary knob [8] in the + direction until the desired pressure is reached.
4. Maintain the permissible pressure regulation range → 11 Technical data.
5. Press the filter regulator rotary knob [8] to lock it.

8 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 (operating pressure is lost with air consumption).	Constriction in the supply line.	– Check the line.
	The filter cartridge is dirty.	– Replace the filter cartridge → 1 Applicable documents.
The pressure increases above the set working pressure.	The valve disc at the sealing seat is defective.	– Replace the product.
Continuous audible blowing noise at rotary knob	The valve seat is damaged.	– Replace the product.
Audible blowing noise at the drain screw.	The drain screw is leaking.	– Replace the product.

Tab. 2: Fault clearance

10 Disassembly

1. Exhaust the complete system and the product.
2. Release interlock at the fittings by pressing it and pull out the tubing lines.
3. Release and unscrew the fittings at the connecting flanges.

11 Technical data

11.1 Technical data, mechanical

MS4-EM1FR-...-B	-M	-VC
Mounting position [°]	Vertical ± 5	
Condensate drain function	Manual rotating	Manual non-detenting
		Fully automatic
Vibration resistance in accordance with IEC 60068-2-6	Severity level 1	
Shock resistance in accordance with IEC 60068-2-27	Severity level 1	
Pneumatic port P1	G 1/4	
Pneumatic port P2		
Temperature of medium [°C]	–5 ... +50	5 ... 50
Ambient temperature [°C]	–5 ... +50	5 ... 50
Storage temperature [°C]	–5 ... +50	

Tab. 3: Technical data, service unit MS4-EM1FR-...-B

MS4-LFR-...-B
Technical data, mechanical
→ 1 Applicable documents

Tab. 4: Technical data, filter regulator MS4-LFR-...-B

Type of severity level (SL)					
Vibration load					
Frequency range [Hz]		Acceleration [m/s²]		Deflection [mm]	
SL1	SL2	SL1	SG2	SL1	SL2
2 ... 8	2 ... 8	–	–	±3.5	±3.5
8 ... 27	8 ... 27	10	10	–	–
27 ... 58	27 ... 60	–	–	±0.15	±0.35
58 ... 160	60 ... 160	20	50	–	–
160 ... 200	160 ... 200	10	10	–	–
Shock load					
Acceleration [m/s²]		Duration [ms]		Shocks per direction	
SL1	SL2	SL1	SL2	SL1	SL2
±150	±300	11	11	5	5
Continuous shock load					
Acceleration [m/s²]		Duration [ms]		Shocks per direction	
±150		6		1000	

Tab. 5: Type of severity level (SL)

11.2 Technical data, pneumatic

MS4-EM1FR-...-B		-M	-VC
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]	
		Information on the operating medium	
Information on the operating medium		Lubricated operation possible, in which case lubricated operation will always be required	
		Not compatible with ester oil	
Pressure regulation range	[MPa]	0.03 ... 0.7	
	[bar]	0.3 ... 7	
	[psi]	4.35 ... 105	
Operating pressure	[MPa]	0.1 ... 1	0.2 ... 1
	[bar]	1 ... 10	2 ... 10
	[psi]	15 ... 145	29 ... 145
Air purity class at the output			
MS4-LFR-...-C Grade of filtration 5 µm		Compressed air to ISO 8573-1:2010 [6:4:4]	
MS4-LFR-...-E Grade of filtration 40 µm		Compressed air to ISO 8573-1:2010 [7:4:4]	
Standard nominal flow rate			
MS4-LFR-...-C Grade of filtration 5 µm		[l/min]	1500
MS4-LFR-...-E Grade of filtration 40 µm		[l/min]	1700

Tab. 6: Technical data, service unit MS4-EM1FR-...-B

MS4-LFR-...-B	
Technical data, pneumatic	➔ 1 Applicable documents

Tab. 7: Technical data, filter regulator MS4-LFR-...-B