

## Service unit MS-EM1FR

**FESTO**



## Characteristics

### Function

Combination of on/off valve and filter regulator

- For filtered and unlubricated compressed air supply
- Output pressure is infinitely adjustable within the pressure regulation range

### Pneumatic connection

For individual fittings that are fastened via a female thread.

### Pressure regulation range

For adjusting the pressure regulation range from 0.5 ... 7 bar.

### Filter design

Grade of filtration of 5 µm or 40 µm can be selected.

### Bowl

Bowl is protected by a plastic bowl guard.

### Condensate drain

The following functions can be selected:

- Manual
- Fully automatic, normally closed

### Alternative pressure gauge scale

The pressure regulator can be ordered with or without a pressure gauge. The interface has a thread of G1/8.

### Special material properties

[F1A]	Recommended for production plants for manufacturing lithium-ion batteries, F1A
-------	--

Metals with more than 1% copper by mass are excluded from use. Exceptions are circuit boards, cables, electrical plug connectors and coils

### Version

[B]	Second generation
-----	-------------------

Basic component with sturdy and lightweight polymer housing. Fully compatible with the MS series.

## Type code

001	Series
<b>MS</b>	MS series
002	Size
<b>4</b>	Grid dimension 40 mm
<b>6</b>	Grid dimension 62 mm
003	Function
<b>EM1FR</b>	On/off valve, manually operated with filter control valve
004	Pneumatic connection
<b>1/4</b>	Female thread G1/4
<b>1/2</b>	Female thread G1/2
005	Pressure regulation range
<b>D6</b>	0.5 – 7 bar
006	Filter design
<b>C</b>	5 µm
<b>E</b>	40 µm

007	Bowl
<b>P</b>	Plastic bowl
008	Condensate drain
<b>M</b>	Manually
<b>VC</b>	Fully automatic, normally closed
009	Pressure gauge
<b>A8</b>	Adapter for EN pressure gauge 1/8, without pressure gauge
<b>AG</b>	With pressure gauge
010	Alternative pressure gauge scale
	MS pressure gauge
<b>BAR</b>	bar
<b>MPA</b>	MPa
011	Type of mounting
<b>WP</b>	Mounting bracket basic design
<b>WPE</b>	Mounting bracket for wall mounting
012	Version
<b>B</b>	Second generation

## Datasheet

## General technical data

Size	4	6
Type of mounting	In-line installation Via mounting bracket With accessories Either:	
Mounting position	Vertical +/-5°	
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	Prepared for G1/8 With pressure gauge	

## Standard nominal flow rate

Size	4	6		
Filter design	5 µm	40 µm	5 µm	40 µm
Standard nominal flow rate, exhaust 0.6->0 MPa (6->0 bar, 87->0 psi)	1,400 l/min		3,600 l/min	
Standard nominal flow rate (standardised to DIN 1343)	1,500 l/min	1,700 l/min	4,750 l/min	5,300 l/min

## Operating and environmental conditions

Condensate drain	Manually	Fully automatic, normally closed
Operating pressure	0.1 ... 1 MPa	
Operating pressure	1 ... 10 bar	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating and pilot medium	Compatibility with ester oil not guaranteed	
Ambient temperature	-5 ... 50°C	5 ... 50°C
Media temperature	-5 ... 50°C	5 ... 50°C
Storage temperature	-5 ... 50°C	
Corrosion resistance class CRC <sup>1)</sup>	1 - Low corrosion stress	

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

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

## Materials

Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L

## Additional material specifications – products for battery production

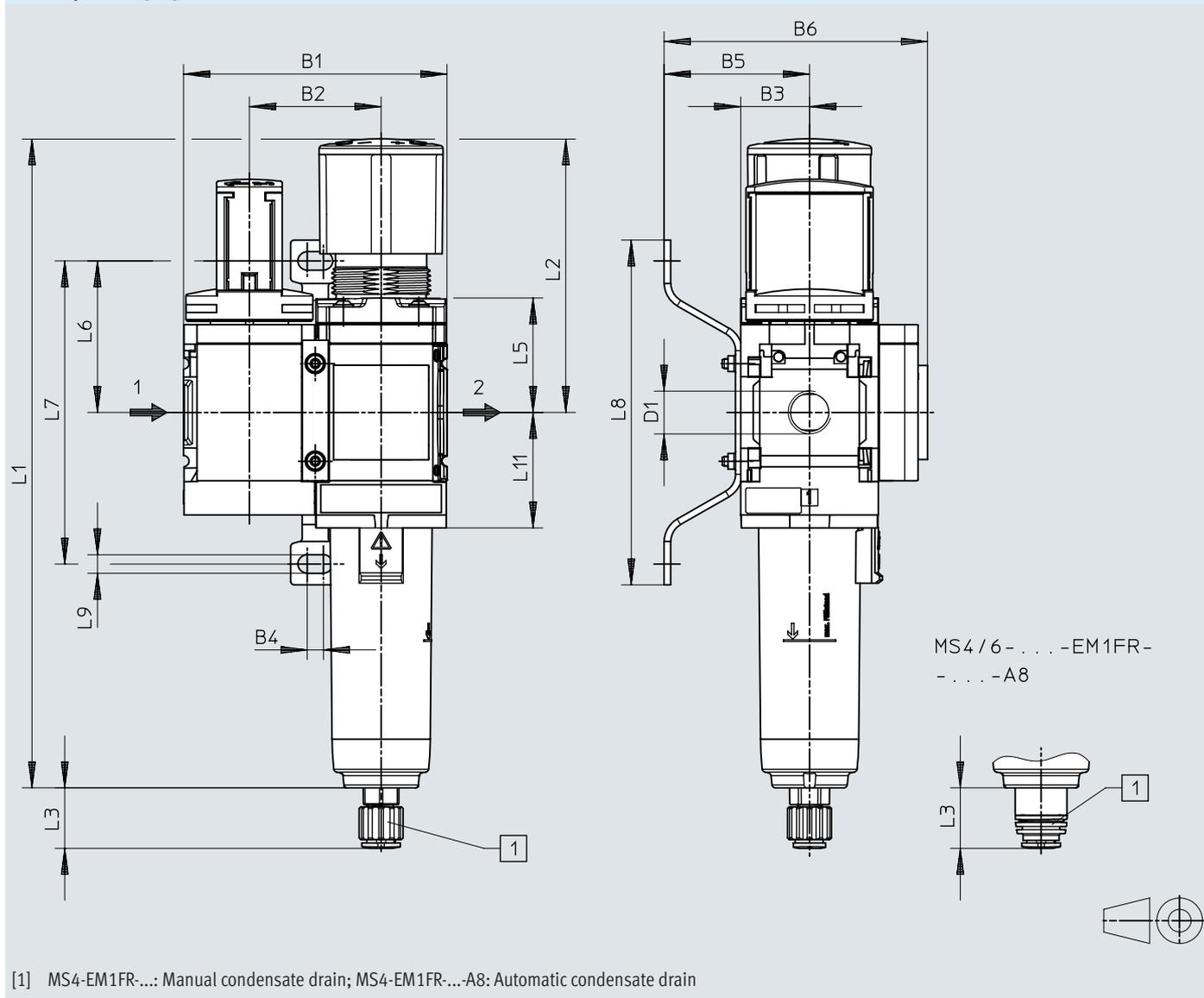
Suitability for the production of Li-ion batteries <sup>1)</sup>	Product corresponds to the internal product definition from Festo for use in battery production: Metals with more than 1% by mass of copper, zinc or nickel are excluded from use. The exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils
---	--

1) only valid for MS...-F1A-B

## Dimensions

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

Download CAD data [www.festo.com](http://www.festo.com)



	B1	B2	B3	B4	B5	B6	D1	L1
MS4-EM1FR	80,4	40,2	21	5	44,4	80,4	G1/4	199,8
MS4-EM1FR...-A8								
MS6-EM1FR	124	62	31	4,3	53,9	99,9	G1/2	288,9
MS6-EM1FR...-A8								

	L2	L3	L5	L6	L7	L8	L9	L11
MS4-EM1FR	84,4	18,6	35,2	46,6	93,2	106	5,7	35,5
MS4-EM1FR...-A8		20,8						
MS6-EM1FR	141,3	20,8	49,4	72	142	158	6,6	53,5
MS6-EM1FR...-A8		22,4						

## Ordering data

### Ordering data – MSB4/6-EM1FR....B (pressure display G1/8" prepared)

	Size	Filter design	Standard nominal flow rate (standardised to DIN 1343)	Product weight	Part no.	Type	
	4	5 µm	1,500 l/min	470 g	★ 8130949	MS4-EM1FR-1/4-D6-C-P-VC-A8-WPE-B	
			40 µm		1,700 l/min	★ 8130947	MS4-EM1FR-1/4-D6-C-P-M-A8-WPE-B
						★ 8130948	MS4-EM1FR-1/4-D6-E-P-VC-A8-WPE-B
						★ 8130950	MS4-EM1FR-1/4-D6-E-P-M-A8-WPE-B
	6	5 µm	4,750 l/min	1,250 g	★ 8130912	MS6-EM1FR-1/2-D6-C-P-M-A8-WPE-B	
					8130911	MS6-EM1FR-1/2-D6-C-P-VC-A8-WPE-B	
			40 µm		5,300 l/min	★ 8130914	MS6-EM1FR-1/2-D6-E-P-VC-A8-WPE-B
						★ 8130913	MS6-EM1FR-1/2-D6-E-P-M-A8-WPE-B

### Ordering data – MSB4/6-EM1FR....B (pressure gauge with outer scale in MPa)

	Size	Filter design	Standard nominal flow rate (standardised to DIN 1343)	Product weight	Part no.	Type	
	4	5 µm	1,500 l/min	470 g	★ 8098377	MS4-EM1FR-1/4-D6-C-P-VC-AG-MPA-WPE-B	
			40 µm		1,700 l/min	★ 8098378	MS4-EM1FR-1/4-D6-C-P-M-AG-MPA-WPE-B
						★ 8098380	MS4-EM1FR-1/4-D6-E-P-VC-AG-MPA-WPE-B
						★ 8098374	MS4-EM1FR-1/4-D6-E-P-M-AG-MPA-WPE-B
	6	5 µm	4,750 l/min	1,250 g	8098368	MS6-EM1FR-1/2-D6-C-P-VC-AG-MPA-WPE-B	
					★ 8098371	MS6-EM1FR-1/2-D6-C-P-M-AG-MPA-WPE-B	
			40 µm		5,300 l/min	★ 8098369	MS6-EM1FR-1/2-D6-E-P-M-AG-MPA-WPE-B
						★ 8098364	MS6-EM1FR-1/2-D6-E-P-VC-AG-MPA-WPE-B

### Ordering data – MSB4/6-EM1FR....B (pressure gauge with outer scale in bar and inner scale in psi)

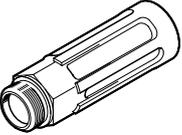
	Size	Filter design	Standard nominal flow rate (standardised to DIN 1343)	Product weight	Part no.	Type	
	4	5 µm	1,500 l/min	470 g	★ 8098372	MS4-EM1FR-1/4-D6-C-P-VC-AG-BAR-WPE-B	
			40 µm		1,700 l/min	★ 8098373	MS4-EM1FR-1/4-D6-C-P-M-AG-BAR-WPE-B
						★ 8098379	MS4-EM1FR-1/4-D6-E-P-VC-AG-BAR-WPE-B
						★ 8098376	MS4-EM1FR-1/4-D6-E-P-M-AG-BAR-WPE-B
	6	5 µm	4,750 l/min	1,250 g	★ 8098370	MS6-EM1FR-1/2-D6-C-P-VC-AG-BAR-WPE-B	
					★ 8098363	MS6-EM1FR-1/2-D6-C-P-M-AG-BAR-WPE-B	
			40 µm		5,300 l/min	★ 8098367	MS6-EM1FR-1/2-D6-E-P-VC-AG-BAR-WPE-B
						★ 8098365	MS6-EM1FR-1/2-D6-E-P-M-AG-BAR-WPE-B

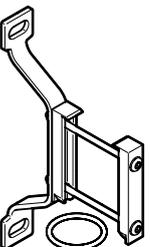
## Ordering data

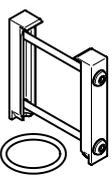
Ordering data – MSB4/6-EM1FR....B (pressure display G1/8" prepared)						
	Size	Filter design	Standard nominal flow rate (standardised to DIN 1343)	Product weight	Part no.	Type
	4	5 µm	1,500 l/min	470 g	8176525	MS4-EM1FR-1/4-D6-C-P-M-A8-WP-F1A-B
					8176522	MS4-EM1FR-1/4-D6-C-P-M-AG-MPA-WP-F1A-B
					8176521	MS4-EM1FR-1/4-D6-C-P-M-AG-BAR-WP-F1A-B
		40 µm	1,700 l/min		8176526	MS4-EM1FR-1/4-D6-E-P-M-A8-WP-F1A-B
					8176524	MS4-EM1FR-1/4-D6-E-P-M-AG-MPA-WP-F1A-B
					8176523	MS4-EM1FR-1/4-D6-E-P-M-AG-BAR-WP-F1A-B
	6	5 µm	4,750 l/min	1,250 g	8176531	MS6-EM1FR-1/2-D6-C-P-M-A8-WP-F1A-B
					8176527	MS6-EM1FR-1/2-D6-C-P-M-AG-BAR-WP-F1A-B
		40 µm	5,300 l/min		8176528	MS6-EM1FR-1/2-D6-C-P-M-AG-MPA-WP-F1A-B
					8176530	MS6-EM1FR-1/2-D6-E-P-M-AG-MPA-WP-F1A-B
				8176529	MS6-EM1FR-1/2-D6-E-P-M-AG-BAR-WP-F1A-B	
				8176532	MS6-EM1FR-1/2-D6-E-P-M-A8-WP-F1A-B	

## Accessories

Pressure gauge MA					
	Conforms to standard	Pneumatic connection	Product weight	Part no.	Type
	EN 837-1	R1/8	60 g	162835	MA-40-10-1/8-EN
				525725	MA-40-10-R1/8-E-RG
				526778	MA-40-1,0-R1/8-MPA-E-RG

Silencer U				
	Pneumatic connection	Product weight	Part no.	Type
	G1/4	7.7 g	★ 2316	U-1/4
	G1/2	58.2 g	★ 2310	U-1/2

Mounting bracket MS...-WPE-B				
	Size	Product weight	Part no.	Type
	4	30 g	★ 8118600	MS4-WPE-B
	6	58 g	★ 8118599	MS6-WPE-B

Module connector MS...-MV1					
	Size	Suitability for the production of Li-ion batteries <sup>1)</sup>	Product weight	Part no.	Type
	4		13 g	★ 8119201	MS4-MV1
		F1a	36 g	8176695	MS4-MV1-F1A
	6		33 g	★ 8119204	MS6-MV1
		F1a	54 g	8176697	MS6-MV1-F1A

1) More information: [www.festo.com/x/topic/bat](http://www.festo.com/x/topic/bat)