

Powerful, lightweight, inexpensive Service unit component series MS-B

Filter regulators MS-LFR-B



- Pneumatic connection 1, 2: G1/4, G1/2
- Standard nominal flow rate: 1500, 1700, 4750, 5300 l/min

Pressure regulators MS-LR-B



- Pneumatic connection 1, 2: M5, QS-6, G1/4, G1/2
- Standard nominal flow rate: 170 ... 350, 1800, 6000 l/min

On/off valves MS-EE-B
Soft-start valves MS-EDE-B



- Pneumatic connection 1, 2: G1/4, G1/2
- Standard nominal flow rate: 2000 l/min, 5000 l/min

Service unit combination 2
MS-EM1FR-B



- Pneumatic connection 1, 2, 3: G1/4, G1/2
- Standard nominal flow rate: 950 ... 5500 l/min

MS-B series

- Fully compatible with the MS series
- Can be individually combined
- Lightweight thanks to modern polymer materials
- Low cost
- Easy to use

Selection and ordering

Check our electronic catalogue for the components and solutions we offer.

→ www.festo.com/xdki

Or simply contact your Festo sales engineer, who will be happy to help you.

Filter regulators MS-LFR-B

Filter regulators MS-LFR-B

- For stepless, precise adjustment of the required operating pressure
- The pressure regulator keeps the working pressure largely constant, irrespective of compressed air fluctuations in the network and due to air consumption
- Grade of filtration 5, 40 µm



Order code

001	002	003	004	005	006	007	008	009	010	011	012
MS		LFR		D6	E	P					B

001	Series	008	Condensate drain
MS	MS series	M	Manually
002	Size	VC	Fully automatic, normally closed
4	Grid dimension 40 mm	009	Pressure gauge alternatives
6	Grid dimension 62 mm	AG	MS pressure gauge
003	Function	A8	Adapter for EN pressure gauge 1/8, without pressure gauge
LFR	Filter regulator	010	Alternative pressure gauge scale
004	Pneumatic connection		None
1/4	Female thread G1/4	BAR	bar/psi
1/2	Female thread G1/2	MPA	MPa
005	Pressure regulation range	011	Special material properties
D6	0.3 ... 7 bar		None
006	Grade of filtration	F1A	Recommended for production facilities for the manufacture of lithium-ion batteries
C	5 µm	012	Version
E	40 µm	B	2nd generation
007	Bowl type		
P	Polymer		

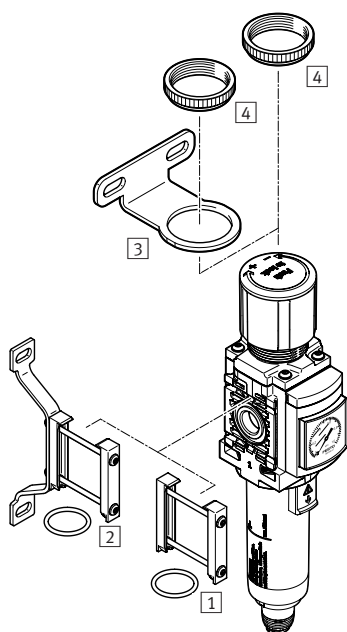
Ordering data

Size	Pneumatic connection	Grade of filtration	Pressure gauge	Pressure gauge alternatives	Pressure gauge scale	Part no.	Type
Pressure regulation range 0.3 ... 7 bar							
4	G1/4	40 µm	Manually	MS pressure gauge	bar/psi	8098258	MS4-LFR-1/4-D6-E-P-M-AG-BAR-B
					MPa	8098254	MS4-LFR-1/4-D6-E-P-M-AG-MPA-B
			Fully automatic	MS pressure gauge	bar/psi	8098264	MS4-LFR-1/4-D6-E-P-VC-AG-BAR-B
					MPa	8098256	MS4-LFR-1/4-D6-E-P-VC-AG-MPA-B
Pressure regulation range 0.3 ... 7 bar							
6	G1/2	40 µm	Manually	MS pressure gauge	bar/psi	8098304	MS6-LFR-1/2-D6-E-P-M-AG-BAR-B
					MPa	8098307	MS6-LFR-1/2-D6-E-P-M-AG-MPA-B
			Fully automatic	MS pressure gauge	bar/psi	8098312	MS6-LFR-1/2-D6-E-P-VC-AG-BAR-B
					MPa	8098305	MS6-LFR-1/2-D6-E-P-VC-AG-MPA-B

Ordering data

Size	Pneumatic connection	Grade of filtration	Pressure gauge	Pressure gauge alternatives	Pressure gauge scale	Part no.	Type
Recommended for production facilities for the manufacture of lithium-ion batteries							
Pressure regulation range 0.3 ... 7 bar							
4	G1/4	5 µm	Manually	MS pressure gauge	bar/psi	8175802	MS4-LFR-1/4-D6-C-P-M-AG-BAR-F1A-B
					MPa	8175801	MS4-LFR-1/4-D6-C-P-M-AG-MPA-F1A-B
				Without pressure gauge	None	8175803	MS4-LFR-1/4-D6-C-P-M-A8-F1A-B
		40 µm	Manually	MS pressure gauge	bar/psi	8175799	MS4-LFR-1/4-D6-E-P-M-AG-BAR-F1A-B
					MPa	8175798	MS4-LFR-1/4-D6-E-P-M-AG-MPA-F1A-B
				Without pressure gauge	None	8175800	MS4-LFR-1/4-D6-E-P-M-A8-F1A-B
Pressure regulation range 0.3 ... 7 bar							
6	G1/4	5 µm	Manually	MS pressure gauge	bar/psi	8175823	MS6-LFR-1/2-D6-C-P-M-AG-BAR-F1A-B
					MPa	8175822	MS6-LFR-1/2-D6-C-P-M-AG-MPA-F1A-B
				Without pressure gauge	None	8175824	MS6-LFR-1/2-D6-C-P-M-A8-F1A-B
		40 µm	Manually	MS pressure gauge	bar/psi	8175820	MS6-LFR-1/2-D6-E-P-M-AG-BAR-F1A-B
					MPa	8175819	MS6-LFR-1/2-D6-E-P-M-AG-MPA-F1A-B
				Without pressure gauge	None	8175821	MS6-LFR-1/2-D6-E-P-M-A8-F1A-B

Accessories



- 1 Module connector MS...-MV1, for connecting the modules
→ page 10
- 2 Wall mounting kit MS...-WPE-B, for connecting the modules for wall mounting → page 10
- 3 Mounting bracket MS...-WR-B, for wall mounting, knurled nut included in the scope of delivery → page 10
- 4 Nut MS...-WRS, for front panel mounting → page 10

Without illustration

- 6 Pressure gauge PAGN → page 10
- Filter cartridge MS...-LFP1 → page 10

Pressure regulators MS-LR-B

Pressure regulators MS-LR-B

- For stepless, precise adjustment of the required operating pressure
- The pressure regulator keeps the working pressure largely constant, irrespective of compressed air fluctuations in the network and due to air consumption



Order code

001	002	003	004	005	006	007	008	009
MS		LR		D6				B

001	Series
MS	MS series
002	Size
2	Grid dimension 25 mm
4	Grid dimension 40 mm
6	Grid dimension 62 mm
003	Function
LR	Pressure regulator
004	Pneumatic connection
M5	Female thread M5
QS6	Push-in connector 6 mm
1/4	Female thread G1/4
1/2	Female thread G1/2
005	Pressure regulation range
D6	0.5 ... 7 bar, 0.3 ... 7 bar

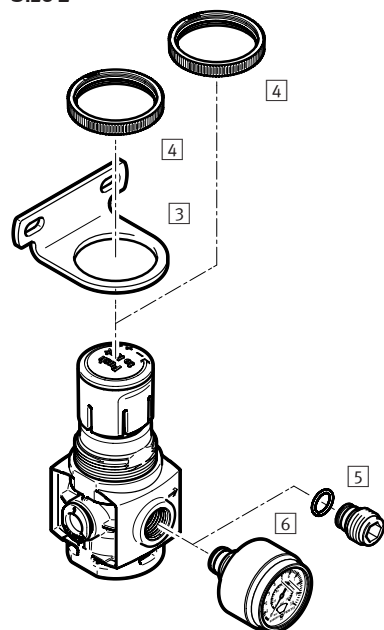
006	Pressure gauge alternatives
AR	With pressure gauge
AG	MS pressure gauge
A8	Adapter for EN pressure gauge 1/8, without pressure gauge
007	Alternative pressure gauge scale
	None
BAR	bar/psi
MPA	MPa
008	Special material properties
	None
F1A	Recommended for production facilities for the manufacture of lithium-ion batteries
009	Version
B	2nd generation

Ordering data

Size	Pneumatic connection	Pressure gauge alternatives	Pressure gauge scale	Part no.	Type
Pressure regulation range 0.3 ... 7 bar					
4	G1/4	MS pressure gauge	bar/psi	8099358	MS4-LR-1/4-D6-AG-BAR-B
			MPa	8099359	MS4-LR-1/4-D6-AG-MPA-B
Pressure regulation range 0.3 ... 7 bar					
6	G1/2	MS pressure gauge	bar/psi	8099205	MS6-LR-1/2-D6-AG-BAR-B
			MPa	8099204	MS6-LR-1/2-D6-AG-MPA-B
Recommended for production facilities for the manufacture of lithium-ion batteries					
Pressure regulation range 0.5 ... 7 bar					
2	M5	With pressure gauge	bar/psi	8167258	MS2-LR-M5-D6-AR-BAR-F1A-B
			MPa	8167259	MS2-LR-M5-D6-AR-MPA-F1A-B
		Without pressure gauge	None	8167260	MS2-LR-M5-D6-A8-F1A-B
	QS-6	MS pressure gauge	bar/psi	8167261	MS2-LR-QS6-D6-AR-BAR-F1A-B
			MPa	8167262	MS2-LR-QS6-D6-AR-MPA-F1A-B
		Without pressure gauge	None	8167263	MS2-LR-QS6-D6-A8-F1A-B
Pressure regulation range 0.3 ... 7 bar					
4	G1/4	MS pressure gauge	bar/psi	8175241	MS4-LR-1/4-D6-AG-BAR-F1A-B
			MPa	8175242	MS4-LR-1/4-D6-AG-MPA-F1A-B
		Without pressure gauge	None	8175243	MS4-LR-1/4-D6-A8-F1A-B
Pressure regulation range 0.3 ... 7 bar					
6	G1/2	MS pressure gauge	bar/psi	8175354	MS6-LR-1/2-D6-AG-BAR-F1A-B
			MPa	8175353	MS6-LR-1/2-D6-AG-MPA-F1A-B
		Without pressure gauge	None	8175352	MS6-LR-1/2-D6-A8-F1A-B

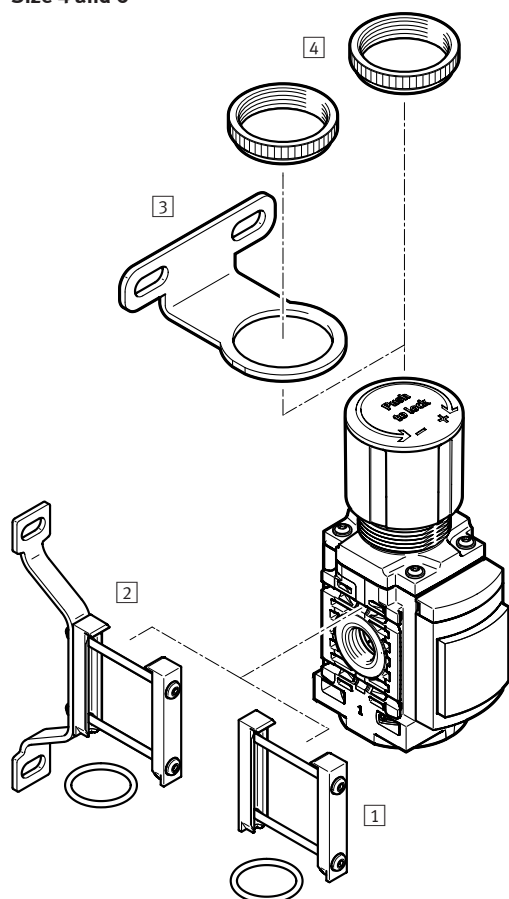
Accessories

Size 2



- [3] Mounting bracket MS2-WR-B, for wall mounting, knurled nut included in the scope of delivery → page 10
- [4] Nut MS2-WRS, for front panel mounting → page 10
- [5] Plug screw MS2-G18S → page 10
- [6] Pressure gauge PAGN → page 10

Size 4 and 6



- [1] Module connector MS...-MV1, for connecting the modules → page 10
- [2] Wall mounting kit MS...-WPE-B, for connecting the modules for wall mounting → page 10
- [3] Mounting bracket MS...-WR-B, for wall mounting, knurled nut included in the scope of delivery → page 10
- [4] Nut MS...-WRS, for front panel mounting → page 10

On/off valves MS-EE-B, Soft-start valves MS-EDE-B

On/off valves MS-EE-B

- Solenoid actuated on/off valve for pressurising and exhausting pneumatic systems
- Ducted exhaust air is possible via threaded connection at port 3 with silencer
- Detenting and non-detenting manual override



Soft-start valves MS-EDE-B

- Electrically operated soft-start valve for slowly pressurising and exhausting pneumatic systems
- The drives move slowly and safely to the initial position
- Sudden and unpredictable movements are avoided
- Adjustable switching time delay
- Detenting and non-detenting manual override



Order code

001	002	003	004	005	006	007			
MS		-		-	V24	-		-	B

001	Series
MS	MS series
002	Size
4	Grid dimension 40 mm
6	Grid dimension 62 mm
003	Function
EE	On/off valve, electric
EDE	Soft-start valve, electrically actuated
004	Pneumatic connection
1/4	Female thread G1/4
1/2	Female thread G1/2

005	Supply voltage
V24	24 V DC (connection pattern to EN 175301)
006	Special material properties
	None
F1A	Recommended for production facilities for the manufacture of lithium-ion batteries
007	Version
B	2nd generation

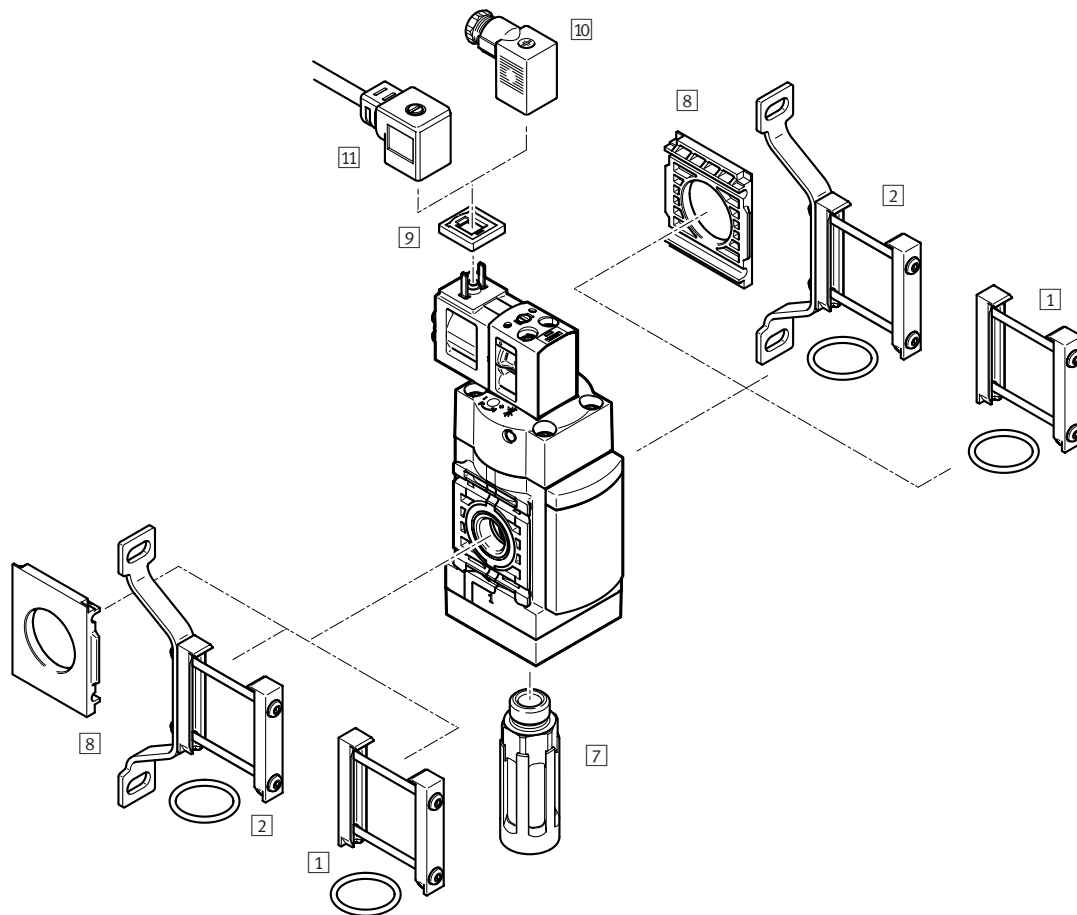
Ordering data – On/off valves MS-EE-B

Size	Pneumatic connection	Part no.	Type
Operating pressure 0.3 ... 7 bar			
4	G1/4	8091771	MS4-EE-1/4-V24-B
Operating pressure 0.3 ... 7 bar			
6	G1/2	8091578	MS6-EE-1/2-V24-B
Recommended for production facilities for the manufacture of lithium-ion batteries			
Operating pressure 0.3 ... 7 bar			
4	G1/4	8176512	MS4-EE-1/4-V24-F1A-B
Operating pressure 0.3 ... 7 bar			
6	G1/2	8176514	MS6-EE-1/2-V24-F1A-B

Ordering data – Soft-start valves MS-EDE-B

Size	Pneumatic connection	Part no.	Type
Operating pressure 0.3 ... 7 bar			
4	G1/4	8080815	MS4-EDE-1/4-V24-B
Operating pressure 0.3 ... 7 bar			
6	G1/2	8080855	MS6-EDE-1/2-V24-B
Recommended for production facilities for the manufacture of lithium-ion batteries			
Operating pressure 0.3 ... 7 bar			
4	G1/4	8176511	MS4-EDE-1/4-V24-F1A-B
Operating pressure 0.3 ... 7 bar			
6	G1/2	8176513	MS6-EDE-1/2-V24-F1A-B

Accessories



- | | |
|--|--|
| 1 Module connector MS...-MV1, for connecting the modules
→ page 10 | 9 Illuminating seal MEB-LD → page 11 |
| 2 Wall mounting kit MS...-WPE-B, for connecting the modules for wall
mounting → page 10 | 10 Plug socket MSSD-EB → page 11 |
| 7 Silencer U → page 10 | 11 Plug socket with cable KMEB → page 11 |
| 8 Mounting plate MS...-AEND; wall mounting kit MS...-WPE-B 2 is
required for mounting → page 10 | |

Service unit combination 2, MS-EM1FR-B

Combination 2

- For filtered and unlubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range
- Variants recommended for production systems for manufacturing lithium-ion batteries



- Flow rate
950 ... 5500 l/min
- Temperature range
-10 ... +60 °C
- Pressure regulation range
0.5 ... 12 bar
- Comprising:
 - On/off valve MS...-EM1, manually operated
 - Filter regulator MS...-LFR with pressure gauge
 - Mounting bracket MS...-WP
- With manual condensate drain
- Fully automatic condensate drain

Order code – Service unit combination 2

001	002	003	004	005	006	007	008	009	010	011	012	013
MS		EM1FR		D6		P						B

001	Series
MS	MS series

002	Size
4	Grid dimension 40 mm
6	Grid dimension 62 mm

003	Function
EM1FR	On/off valve, manually operated, filter regulator with pressure gauge

004	Pneumatic connection
1/4	Female thread G1/4
1/2	Female thread G1/2

005	Pressure regulation range
D6	0.5 ... 7 bar

006	Grade of filtration
C	5 µm
E	40 µm

007	Bowl
P	Plastic bowl

008	Condensate drain
M	Manual
VC	Fully automatic

009	Pressure gauge
A8	Adapter for EN pressure gauge 1/8, without pressure gauge
AG	With pressure gauge

010	Alternative pressure gauge scale
	None
BAR	bar
MPA	MPa

011	Type of mounting
WP	Mounting bracket
WPE	Wall mounting kit

012	Special material properties
	None
F1A	Recommended for production facilities for the manufacture of lithium-ion batteries

013	Version
B	2nd generation

Ordering data – Service unit combination 2 MSB4/6-EM1FR-...-B

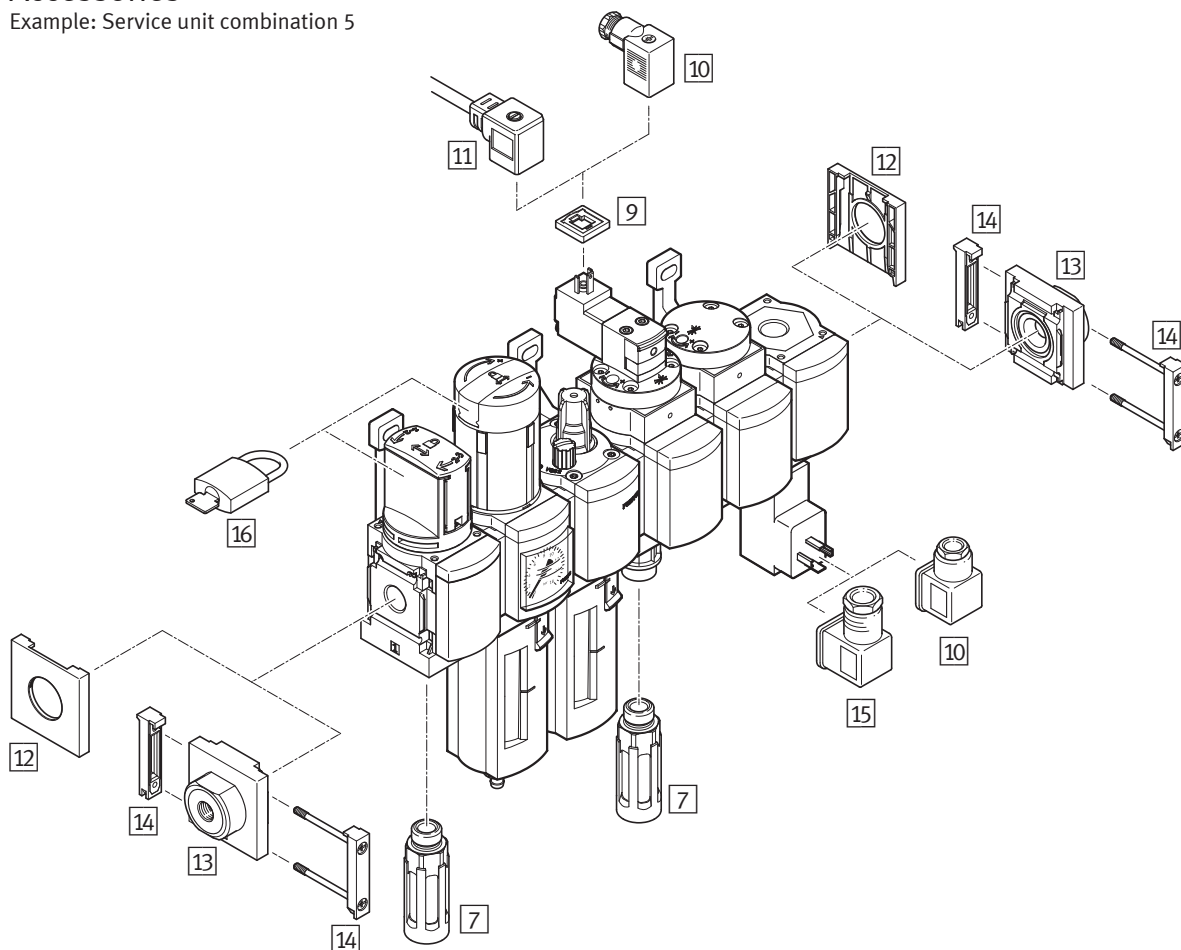
Size	Pneumatic connection	Grade of filtration [µm]	Part no.	Type	Part no.	Type
				Manual condensate drain	Fully automatic condensate drain	
Pressure indication prepared for G1/8"						
4	G1/4	5	8130947	MS4-EM1FR-1/4-D6-C-P-M-A8-WPE-B	8130949	MS4-EM1FR-1/4-D6-C-P-VC-A8-WPE-B
		40	8130950	MS4-EM1FR-1/4-D6-E-P-M-A8-WPE-B	8130948	MS4-EM1FR-1/4-D6-E-P-VC-A8-WPE-B
6	G1/2	5	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	8130913	MS6-EM1FR-1/2-D6-E-P-M-A8-WPE-B	8130914	MS6-EM1FR-1/2-D6-E-P-VC-A8-WPE-B
Pressure gauge with outer scale in MPa						
4	G1/4	5	8098378	MS4-EM1FR-1/4-D6-C-P-M-AG-MPA-WPE-B	8098377	MS4-EM1FR-1/4-D6-C-P-VC-AG-MPA-WPE-B
		40	8098374	MS4-EM1FR-1/4-D6-E-P-M-AG-MPA-WPE-B	8098380	MS4-EM1FR-1/4-D6-E-P-VC-AG-MPA-WPE-B
6	G1/2	5	8098371	MS6-EM1FR-1/2-D6-C-P-M-AG-MPA-WPE-B	8098368	MS6-EM1FR-1/2-D6-C-P-VC-AG-MPA-WPE-B
		40	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
Pressure gauge with outer scale in bar and inner scale in psi						
4	G1/4	5	8098373	MS4-EM1FR-1/4-D6-C-P-M-AG-BAR-WPE-B	8098372	MS4-EM1FR-1/4-D6-C-P-VC-AG-BAR-WPE-B
		40	8098376	MS4-EM1FR-1/4-D6-E-P-M-AG-BAR-WPE-B	8098379	MS4-EM1FR-1/4-D6-E-P-VC-AG-BAR-WPE-B
6	G1/2	5	8098363	MS6-EM1FR-1/2-D6-C-P-M-AG-BAR-WPE-B	8098370	MS6-EM1FR-1/2-D6-C-P-VC-AG-BAR-WPE-B
		40	8098365	MS6-EM1FR-1/2-D6-E-P-M-AG-BAR-WPE-B	8098367	MS6-EM1FR-1/2-D6-E-P-VC-AG-BAR-WPE-B

Ordering data – Service unit combination 2 MSB4/6-EM1FR-...-F1A-B for battery production

Size	Pneumatic connection	Grade of filtration [µm]	Part no.	Type
			Manual condensate drain	
Pressure indication prepared for G1/8"				
4	G1/4	5	8176525	MS4-EM1FR-1/4-D6-C-P-M-A8-WP-F1A-B
		40	8176526	MS4-EM1FR-1/4-D6-E-P-M-A8-WP-F1A-B
6	G1/2	5	8176531	MS6-EM1FR-1/2-D6-C-P-M-A8-WP-F1A-B
		40	8176532	MS6-EM1FR-1/2-D6-E-P-M-A8-WP-F1A-B
Pressure gauge with outer scale in MPa				
4	G1/4	5	8176522	MS4-EM1FR-1/4-D6-C-P-M-AG-MPA-WP-F1A-B
		40	8176524	MS4-EM1FR-1/4-D6-E-P-M-AG-MPA-WP-F1A-B
6	G1/2	5	8176528	MS6-EM1FR-1/2-D6-C-P-M-AG-MPA-WP-F1A-B
		40	8176530	MS6-EM1FR-1/2-D6-E-P-M-AG-MPA-WP-F1A-B
Pressure gauge with outer scale in bar and inner scale in psi				
4	G1/4	5	8176521	MS4-EM1FR-1/4-D6-C-P-M-AG-BAR-WP-F1A-B
		40	8176523	MS4-EM1FR-1/4-D6-E-P-M-AG-BAR-WP-F1A-B
6	G1/2	5	8176527	MS6-EM1FR-1/2-D6-C-P-M-AG-BAR-WP-F1A-B
		40	8176529	MS6-EM1FR-1/2-D6-E-P-M-AG-BAR-WP-F1A-B

Accessories

Example: Service unit combination 5



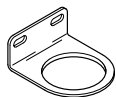
- 7 Silencer U → page 10
- 9 Illuminating seal MEB-LD → page 11
- 10 Plug socket MSSD-EB → page 11
- 11 Plug socket with cable KMEB → page 11
- 12 Cover cap MS4/6-END → [ms4-end](#), [ms6-end](#)
- 13 Sub-base-SET MS4/6-AG... → [ms4-ag](#), [ms6-ag](#)
- 14 Module connector MS4/6-MV1 → [ms4-mv1](#), [ms6-mv1](#)
- 15 Angled plug socket PEV-1/4-WD-LED → page 11
- 16 Padlock LRVS-D → page 11

Without illustration

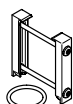
- 2 Wall mounting kit MS...-WPE-B, for connecting the modules for wall mounting → page 10
- 3 Mounting bracket MS...-WR-B, for wall mounting, knurled nut included in the scope of delivery → page 10

Filter cartridge MS4-LFP1-E

Size	Part no.	Type
Grade of filtration 5 µm		
4	8129064	MS4-LFP1-C
6	8129063	MS6-LFP1-C
Grade of filtration 40 µm		
4	8129062	MS4-LFP1-E
6	8129061	MS6-LFP1-E

Mounting bracket HR

Description	Part no.	Type
For wall mounting	159503	HR-1/4-P
Suitability for the production of Li-ion batteries		
For wall mounting	8175928	HR-1/4-P-F1A

1 Module connector MS...-MV1

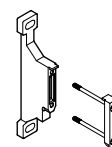
Size	Part no.	Type
For connecting the modules		
4	8119201	MS4-MV1
6	8119204	MS6-MV1
Suitability for the production of Li-ion batteries		
4	8176695	MS4-MV1-F1A
6	8176697	MS6-MV1-F1A

2 Wall mounting kit MS...-WPE-B

Size	Part no.	Type
For connecting the modules for wall mounting		
4	8118600	MS4-WPE-B
6	8118599	MS6-WPE-B

3 Mounting bracket MS...-WR-B

Size	Part no.	Type
For wall mounting, knurled nut included in the scope of delivery		
4	8149680	MS4-WR-B
6	8149681	MS6-WR-B
Suitability for the production of Li-ion batteries		
2	8167322	MS2-WR-F1A-B
4	8176693	MS4-WR-F1A-B
6	8176696	MS6-WR-F1A-B

Mounting bracket MS...-WP

Size	Part no.	Type
For connecting the modules for wall mounting, knurled nut included in the scope of delivery		
4	532184	MS4-WP
6	532195	MS6-WP
Suitability for the production of Li-ion batteries		
4	8176694	MS4-WP-F1A
6	8176698	MS6-WP-F1A

4 Nut MS...-WRS

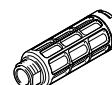
Size	Part no.	Type
For front panel mounting		
2	8098037	MS2-WRS
4	532187	MS4-WRS
6	532188	MS6-WRS

5 Plug screw MS2-G18S

Size	Part no.	Type
MS2	8095766	MS2-G18S

6 Pressure gauge PAGN

Display range	Part no.	Type
Nominal size: 26, Pneumatic connection: G1/8 with sealing ring		
0 ... 10 bar	8088985	PAGN-26-10-G18S
0 ... 1 MPa, 0 ... 10 bar	8088986	PAGN-26-1M-G18S

7 Silencer U

Pneumatic connection	Part no.	Type
Material cushioning insert: PE		
G1/4	2316	U-1/4
G1/2	2310	U-1/2

8 Mounting plate MS...-AEND

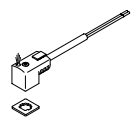
Size	Part no.	Type
In combination with mounting bracket MS...-WPE-B for wall mounting an individual component		
4	542966	MS4-AEND
6	535408	MS6-AEND1

9 Illuminating seal MEB-LD

Operating voltage range	Part no.	Type
For plug socket with cable KMEB and plug socket MSSD-EB		
12 ... 24 V DC	151717	MEB-LD-12-24DC

10 Plug socket MSSD

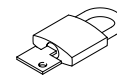
Electrical connection	Part no.	Type
3-pin, clamping screws	151687	MSSD-EB
3-pin, clamping screws	171157	MSSD-C-4P
4-pin, insulation displacement technology	192745	MSSD-EB-S-M14

11 Plug socket with cable KMEB

Cable length	Switching status indication	Part no.	Type
Operating voltage 24 V DC, 2-pin			
2.5 m	LED	547268	KMEB-3-24-2.5-LED
5 m	LED	547269	KMEB-3-24-5-LED
2.5 m	–	547270	KMEB-3-24-2.5
5 m	–	547271	KMEB-3-24-5
Operating voltage 24 V DC, 3-pin			
2.5 m	LED	151688	KMEB-1-24-2.5-LED
5 m	LED	151689	KMEB-1-24-5-LED
10 m	LED	193457	KMEB-1-24-10-LED

15 Angled plug socket PEV

Operating voltage range	Part no.	Type
4-pin, with switching status indication yellow LED		
15 ... 30 V DC	164274	PEV-1/4-WD-LED-24
≤230 V AC, ≤180 V DC	164275	PEV-1/4-WD-LED-230

16 Padlock LRVS

Description	Part no.	Type
For filter and pressure regulators	193786	LRVS-D