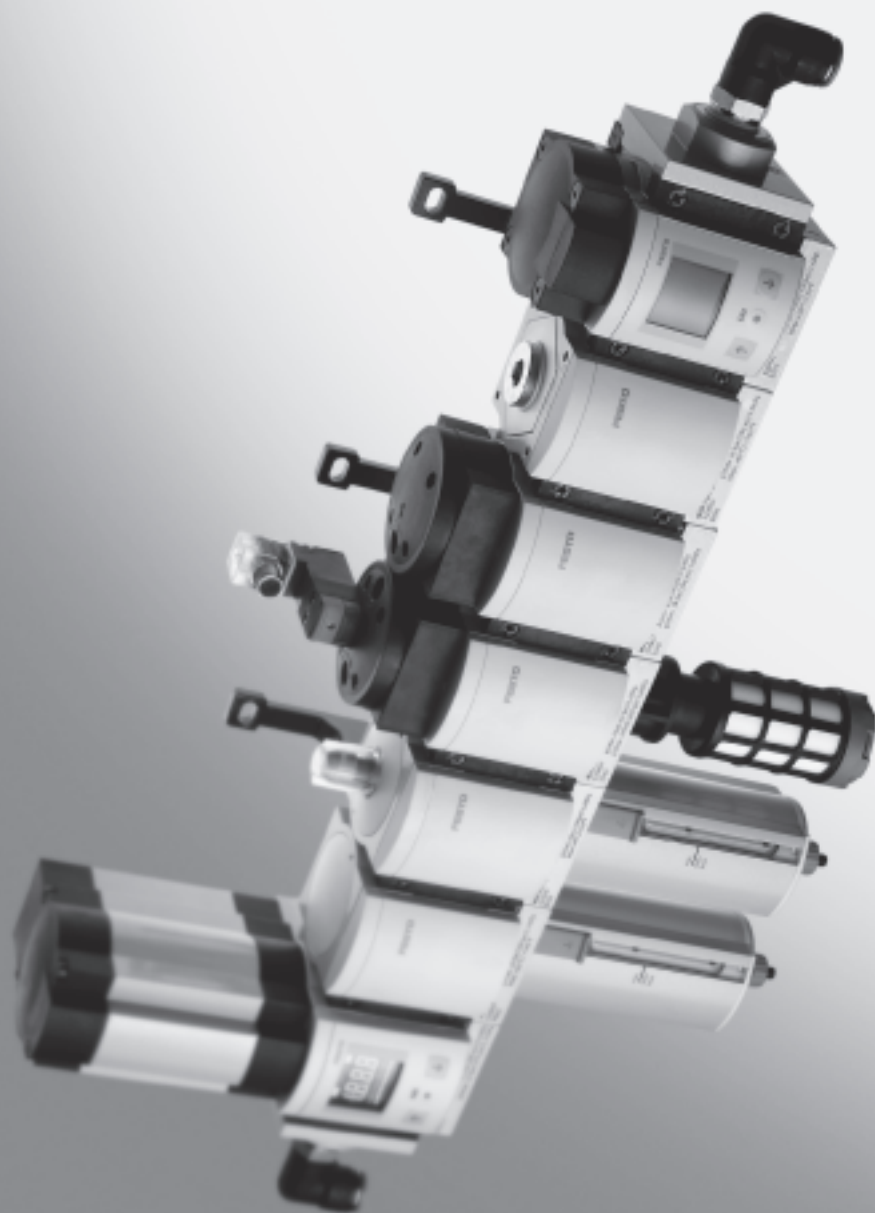


Wide range of configuration options

→ www.festo.com/en/engineering



- Three sizes:
MS4 – grid
dimension 40 mm
MS6 – grid
dimension 62 mm
MS12 – grid
dimension 124 mm
- Modular
- Easy to assemble
- Broad range of functions
- Compact with high flow rates
- Modern design
- Wide choice of variants
- Integrated safety functions

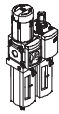
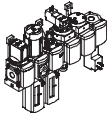
Specified types in accordance with
ATEX directive for potentially
explosive atmospheres

→ www.festo.com/en/ex

MS series service units

Product range overview

FESTO

Type	Size	Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]						Grade of filtration [µm]			
				0.05 ... 0.7	0.05 ... 2.5	0.1 ... 4	0.3 ... 7	0.1 ... 12	0.5 ... 16	0.01	1	5	40
Code			AG...	D2	D4	D5	D6	D7	D8	A	B	C	E
Service units													
MSB-FRC 	4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	■	■	–	–	–	■	■
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	■	■	–	–	–	■	■
	12	–											
Service unit combinations (further variants can be ordered using the configurator → www.festo.com/en/engineering)													
MSB 	4	G1/4	G1/8, G1/4, G3/8	–	–	–	■	■	–	–	–	■	■
	6	G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	■	■	–	–	–	■	■
	12	–											
Individual devices													
Filter regulators MS-LFR 	4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	■	■	■	–	–	–	■	■
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	■	■	■	■	–	–	■	■
	12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	■	■	■	–	–	■	■
Filters MS-LF 	4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–	–	■	■
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–	■	■
	12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–	–	■	■
Fine and micro filters MS-LFM 	4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	■	■	–	–
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	■	■	–	–
	12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	■	■	–	–
Activated carbon filters MS-LFX 	4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–	–	–	–
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–	–	–
	12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–	–	–	–
Pressure regulators MS-LR 	4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	■	■	■	–	–	–	–	–
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	■	■	■	■	–	–	–	–
	12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	■	■	■	–	–	–	–
Pressure regulators MS-LRB 	4	G1/4	G1/8, G1/4, G3/8	–	–	■	■	■	–	–	–	–	–
	6	G1/2	G1/4, G3/8, G1/2, G3/4	–	–	■	■	■	■	–	–	–	–
	12	–											
Precision pressure regulators MS-LRP 	4	–											
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	–	■	–	–	–	–	–
	12	–											
Precision pressure regulators MS-LRPB 	4	–											
	6	G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	–	■	–	–	–	–	–
	12	–											

MS series service units

Product range overview

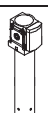
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Type	Size	Bowl guard		Condensate drains				Pressure indicator					Actuator lock		Options		→ Page
		Plastic bowl guard	Metal bowl	Manual rotary	Semi-automatic	Fully automatic	External, fully-automatic, electrical	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter for EN pressure gauge G $\frac{1}{8}$	Adapter for EN pressure gauge G $\frac{1}{4}$	Pressure sensor with display	Rotary knob, lockable	Rotary knob, long	Silencer	Flow direction from right to left	
Code		R	U	M	H	V	E...	VS	AG	A8	A4	AD...	AS	LD	S	Z	
Service units																	
MSB-FRC	4	■	–	■	–	■	–	–	■	–	–	–	■	–	–	■	2-2
	6	■	■	■	–	■	–	–	■	–	–	–	■	–	–	■	
	12	–															
Service unit combinations																	
MSB	4	■	■	■	–	■	–	–	■	–	–	–	■	–	–	■	2-2
	6	■	■	■	–	■	–	–	■	–	–	–	■	–	–	■	
	12	–															
Individual devices																	
Filter regulators MS-LFR	4	■	■	■	■	■	–	■	■	■	■	■	■	■	–	■	3-2
	6	■	■	■	■	■	■	■	■	–	■	■	■	■	–	■	
	12	–	■	■	–	■	■	■	■	■	–	■	–	■	■	–	■
Filters MS-LF	4	■	■	■	■	■	–	–	–	–	–	–	–	–	–	■	4-2, 4-4
	6	■	■	■	■	■	■	–	–	–	–	–	–	–	–	■	
	12	–	■	■	–	■	■	–	–	–	–	–	–	–	–	–	■
Fine and micro filters MS-LFM	4	■	■	■	■	■	–	–	–	–	–	–	–	–	–	■	4-2, 4-12
	6	■	■	■	■	■	■	–	–	–	–	–	–	–	–	■	
	12	–	■	■	–	■	■	–	–	–	–	–	–	–	–	–	■
Activated carbon filters MS-LFX	4	■	■	■	–	–	–	–	–	–	–	–	–	–	–	■	4-2, 4-20
	6	■	■	■	–	–	–	–	–	–	–	–	–	–	–	■	
	12	–	■	–	–	–	–	–	–	–	–	–	–	–	–	–	■
Pressure regulators MS-LR	4	–	–	–	–	–	–	■	■	■	■	■	■	■	–	■	5-2, 5-7
	6	–	–	–	–	–	–	■	■	–	■	■	■	■	–	■	
	12	–	–	–	–	–	–	■	■	–	■	–	■	■	–	■	5-58
Pressure regulators MS-LRB	4	–	–	–	–	–	–	■	■	■	■	■	■	■	–	■	5-2, 5-16
	6	–	–	–	–	–	–	■	■	–	■	■	■	■	–	■	
	12	–															
Precision pressure regulators MS-LRP	4	–															5-24, 5-29
	6	–	–	–	–	–	–	■	–	–	■	■	■	■	–	■	
	12	–															
Precision pressure regulators MS-LRPB	4	–															5-24, 5-38
	6	–	–	–	–	–	–	■	–	–	■	■	■	■	–	■	
	12	–															

MS series service units

Product range overview

FESTO

Type	Size	Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]				Supply voltage			
				0.3 ... 4	0.3 ... 7	0.5 ... 12	0.5 ... 16	24 V DC (connection pattern to EN 175301)	24 V DC (connection pattern M12 to DESINA)	110 V AC (connection pattern to EN 175301)	230 V AC (connection pattern to EN 175301)
Code			AG...	D5	D6	D7	D8	V24	V24P	V110	V230
Individual devices											
Electrical pressure regulators MS-LRE		4	–					–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	■	–	–	–
		12	–								
Lubricators MS-LOE		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–
On-off valves MS-EM(1)		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–
On-off valves MS-EE		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	■	–	■
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	■	–	■
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	■	■	■
Soft-start valves MS-DL		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–
Soft-start valves MS-DE		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	■	–	■
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	■	–	■
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	■	■	■
Membrane air dryers MS-LDM1		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–
		12	–								
Branching modules MS-FRM		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–
Flow sensors MS-SFE		4	–								
		6	G1/2	G1/2	–	–	–	–	–	–	–
		12	–								

MS series service units

Product range overview

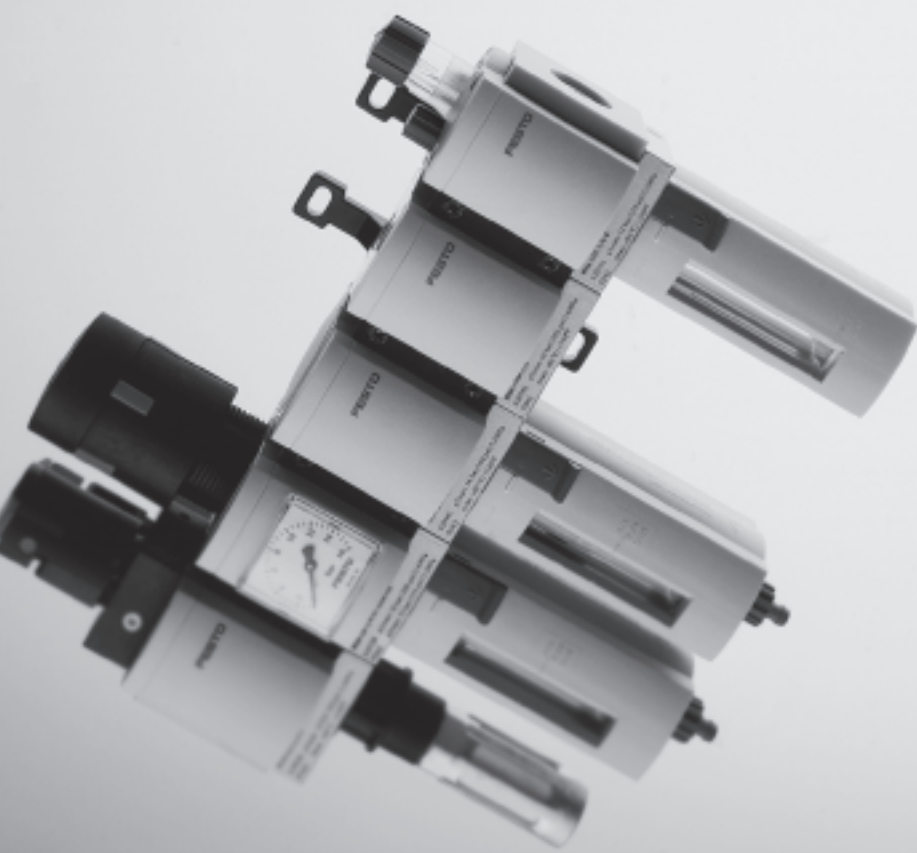
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Type	Size	Bowl guard		Pressure indicator					Switch output		Options		→ Page
		Plastic bowl guard	Metal bowl	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter for EN pressure gauge G1/8	Adapter for EN pressure gauge G1/4	Pressure sensor with display	2x PNP	2x NPN	Silencer	Flow direction from right to left	
Individual devices													
Electrical pressure regulators MS-LRE	4	-											5-46
	6	-	-	■	■	-	■	-	-	-	-	■	
	12	-											
Lubricators MS-LOE	4	■	■	-	-	-	-	-	-	-	-	■	6-2
	6	■	■	-	-	-	-	-	-	-	-	■	
	12	-	■	-	-	-	-	-	-	-	-	-	■
On-off valves MS-EM(1)	4	-	-	■	■	■	■	■	-	-	■	■	7-2, 7-5
	6	-	-	■	■	-	■	■	-	-	■	■	
	12	-	-	■	■	-	■	-	-	-	■	■	7-30, 7-33
On-off valves MS-EE	4	-	-	■	■	■	■	■	-	-	■	■	7-2, 7-10
	6	-	-	■	■	-	■	■	-	-	■	■	
	12	-	-	■	■	-	■	-	-	-	■	■	7-30, 7-37
Soft-start valves MS-DL	4	-	-	■	■	■	■	■	-	-	-	■	7-2, 7-18
	6	-	-	■	■	-	■	■	-	-	-	■	
	12	-	-	■	■	-	■	-	-	-	-	■	7-30, 7-41
Soft-start valves MS-DE	4	-	-	■	■	■	■	■	-	-	-	■	7-2, 7-23
	6	-	-	■	■	-	■	■	-	-	-	■	
	12	-	-	■	■	-	■	-	-	-	-	■	7-30, 7-45
Membrane air dryers MS-LDM1	4	-	■	-	-	-	-	-	-	-	-	■	8-2
	6	-	■	-	-	-	-	-	-	-	-	■	
	12	-											
Branching modules MS-FRM	4	-	-	■	■	■	■	■	-	-	-	■	9-2
	6	-	-	■	■	-	■	■	-	-	-	■	
	12	-	-	■	-	-	-	-	-	-	-	-	9-14
Flow sensors MS-SFE	4	-											10-2
	6	-	-	-	-	-	-	-	■	■	-	■ ¹⁾	
	12	-											

1) To be ordered via configurator software only → www.festo.com/en/engineering

Wide range of configuration options

→ www.festo.com/en/engineering



- MS4 – grid
dimension 40 mm
MS6 – grid
dimension 62 mm
- Modular
- Easy to assemble
- Broad range of functions
- Compact with high flow rates
- Modern design
- Wide choice of variants
- Integrated safety functions

Specified types in accordance with
ATEX directive for potentially
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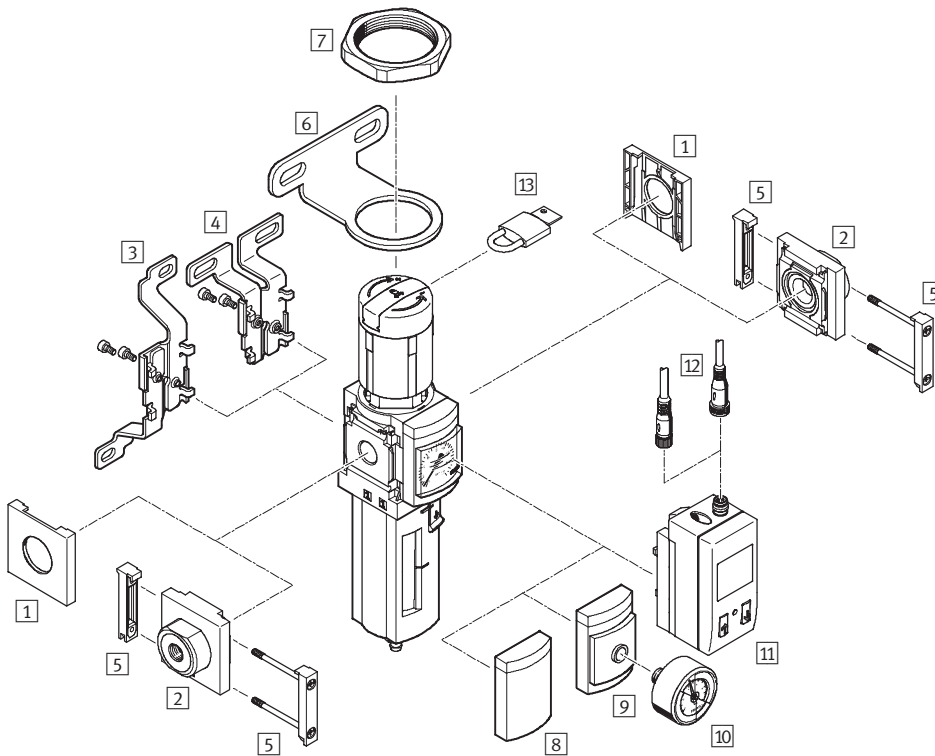
→ www.festo.com/en/ex



Filter regulators MS4/MS6-LFR, MS series

Peripherals overview

FESTO



Mounting attachments and accessories					
		Individual unit		Combination → 3/2.11-0	
		without connect- ing plate	with connecting plate	without connect- ing plate	with connecting plate
1	Cover cap MS4/6-END	■	–	■	–
2	Connecting plate MS4/6-AG...	–	■	–	■
3	Mounting bracket MS4/6-WB	■	■	–	–
4	Mounting bracket MS4-WBM	■	■	–	–
5	Module connector MS4/6-MV	–	■	■	■
6	Regulator wall bracket MS4/6-WR	■	■	–	–
7	Hex nut MS4/6-WRS	■	■	■	■
8	Cover plate VS	■	■	■	■
9	Adapter for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■
10	Pressure gauge MA	■	■	■	■
11	Pressure sensor SDE1-...-MS AD1 ... AD4	■	■	■	■
12	Plug socket with cable SIM-M8-3.../SIM-M12-4...	■	■	■	■
13	Padlock LRVS-D	■	■	■	■
–	Mounting bracket MS4/6-WP/WPB/WPM	–	■	■	■

Filter regulators MS4/MS6-LFR, MS series

Type codes

FESTO

		MS	6	-	LFR	-	1/2	-	D7	-	E	R	M	-	AS
Series															
MS	Standard service unit														
Size															
4	Grid dimension 40 mm														
6	Grid dimension 62 mm														
Service function															
LFR	Filter regulator														
Pneumatic connection															
1/8	Thread G1/8														
1/4	Thread G1/4														
3/8	Thread G3/8														
1/2	Thread G1/2														
Pressure regulation range															
D6	Pressure regulation range 0.3 ... 7 bar														
D7	Pressure regulation range 0.5 ... 12 bar														
Grade of filtration															
C	5 µm														
E	40 µm														
Bowl guard															
R	Plastic bowl guard														
U	Metal bowl														
Condensate drain															
M	Manual rotary														
V	Fully automatic														
Actuator lock															
AS	Lockable standard type rotary knob														

Further variants can be ordered using the modular system

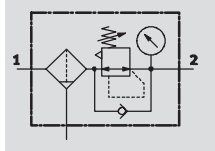
Filter regulators LFR → 3-14

- Connecting plates
- Pressure regulation range
- Condensate drain
- Pressure gauge alternatives
- Alternative pressure gauge scale
- Secondary venting
- Rotary knob
- Type of mounting
- Alternative flow direction

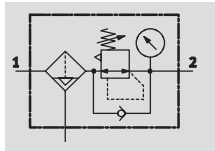
Filter regulators MS4/MS6-LFR, MS series

Technical data

Function
Condensate drain
manual rotary
with pressure gauge



Condensate drain
semi or fully automatic
with pressure gauge



-  - Flow rate
850 ... 7,200 l/min
-  - Temperature range
-10 ... +60 °C
-  - Input pressure
0.8 ... 20 bar
-  - [www.festo.com/en/
Spare_parts_service](http://www.festo.com/en/Spare_parts_service)

Wearing parts kits
➔ 3-12

With this device, the filter and pressure regulator are combined into a single unit. The sintered filter with water separator removes contamination, pipe sinter, rust and condensate from the compressed air.



- Good control characteristics with low hysteresis and primary pressure compensation
- Good particle and condensate separation
- High flow rates
- Directly actuated diaphragm regulator
- Four pressure regulation ranges: 0.3 ... 4 bar, 0.3 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Lockable rotary knob
- Available with or without secondary venting
- Two pressure gauge connections for different fitting options
- Return flow option for exhausting from output 2 to output 1
- Optional pressure sensor with display
- Choice of filter cartridges: 5 µm or 40 µm
- Filter cartridges ➔ 11-10

General technical data					
Size		MS4		MS6	
Pneumatic connection 1, 2		G1/8	G1/4	G1/4	G3/8 G1/2
Design		Filter regulator with/without pressure indicator			
Regulating function		With/without secondary venting			
		With return flow function			
		Output pressure constant			
Type of mounting		Via accessories			
		In-line installation			
		Front panel mounting			
Assembly position		Vertical ±5°			
Grade of filtration [µm]		5 (air purity class at the output 3.7.– to DIN ISO 8573-1)			
		40 (air purity class at the output 5.7.– to DIN ISO 8573-1)			
Bowl guard		Plastic bowl guard			
		Metal bowl			
Condensate drain		Manual rotary			
		Semi-automatic			
		Fully automatic			
		–		Fully automatic, electrical actuated	
Actuator lock		Rotary knob with detent			
		Lockable with accessories			
Pressure regulation range	D5 [bar]	0.3 ... 4			
	D6 [bar]	0.3 ... 7			
	D7 [bar]	0.5 ... 12 (0.5 ... 10 with variant pressure sensor AD...)			
	D8 [bar]	–		0.5 ... 16	
Max. hysteresis [bar]		0.25			
Pressure indicator		With pressure sensor for the output pressure display and with electric output			
		With pressure gauge for the output pressure display			
Max. condensate volume [cm³]		19 (with plastic bowl guard)		38	
		25 (with metal bowl)			

Filter regulators MS4/MS6-LFR, MS series

Technical data

Standard nominal flow rate qnN ¹⁾ [l/min]						
Size	MS4			MS6		
Pneumatic connection	G1/8	G1/4	G1/4	G3/8	G1/2	
D5 – Pressure regulation range 0.3 ... 4 bar						
Grade of filtration	5 µm	900 ²⁾	1,800 ²⁾	2,000 ²⁾	5,500 ²⁾	6,900 ²⁾
	40 µm	1,100 ²⁾	1,900 ²⁾	2,200 ²⁾	6,000 ²⁾	7,200 ²⁾
D6 – Pressure regulation range 0.3 ... 7 bar						
Grade of filtration	5 µm	900	1,500	2,700	5,000	5,600
	40 µm	1,000	1,700	2,800	5,700	6,200
D7 – Pressure regulation range 0.5 ... 12 bar						
Grade of filtration	5 µm	850	1,200	2,200	3,500	4,000
	40 µm	900	1,500	2,500	4,000	4,500
D8 – Pressure regulation range 0.5 ... 16 bar						
Grade of filtration	5 µm	–	–	2,000	3,300	3,800
	40 µm	–	–	2,300	3,500	4,000

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

Operating and environmental conditions							
Condensate drain	Manual rotary		Semi-automatic		Fully automatic		Fully automatic, electrical actuated
	M		H		V		E...
Size	MS4	MS6	MS4	MS6	MS4	MS6	MS6
Supply pressure [bar]	0.8 ... 14	0.8 ... 20	1.5 ... 12	1.5 ... 12	2 ... 12	2 ... 12	0.8 ... 16
Operating medium without pressure sensor AD...	Compressed air						
Operating medium with pressure sensor AD...	Filtered compressed air, lubricated or unlubricated, grade of filtration 40 µm						
Ambient temperature without pressure sensor AD... [°C]	-10 ... +60		+5 ... +60		+5 ... +60		+1 ... +60
Ambient temperature with pressure sensor AD... [°C]	0 ... +50		+5 ... +50		+5 ... +50		+1 ... +50
Medium temperature without pressure sensor AD... [°C]	-10 ... +60		+5 ... +60		+5 ... +60		+1 ... +60
Medium temperature with pressure sensor AD... [°C]	0 ... +50		+5 ... +50		+5 ... +50		+1 ... +50
Storage temperature [°C]	-10 ... +60		-10 ... +60		-10 ... +60		+1 ... +60
Corrosion resistance CRC ¹⁾	2						

1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weights [g]	
Size	MS4
With plastic bowl guard	275
With metal bowl	475
With metal bowl and fully automatic, electrically actuated condensate drain	–
	MS6
With plastic bowl guard	875
With metal bowl	1,087
With metal bowl and fully automatic, electrically actuated condensate drain	1,800

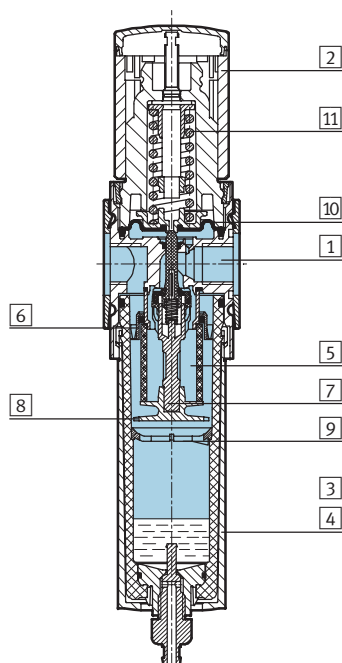
Filter regulators MS4/MS6-LFR, MS series

Technical data

FESTO

Materials

Sectional view



Filter regulator

1	Body	Die-cast aluminium
2	Regulating knob	Polyamide/polyacetate
3	Plastic bowl guard	Polycarbonate/polyamide
4	Metal bowl	Aluminium
	Viewing window	Polyamide
5	Filter element	Polyethylene
6	Spin disc	Polyacetate
7	Filter holder	Polyacetate
8	Separating plate	Polyacetate
9	Stabilising disc	Polyacetate
10	Diaphragm	Nitrile rubber
11	Spring	Steel
-	Seals	Nitrile rubber
	Note on materials	Free of copper and PTFE only with cover plate VS

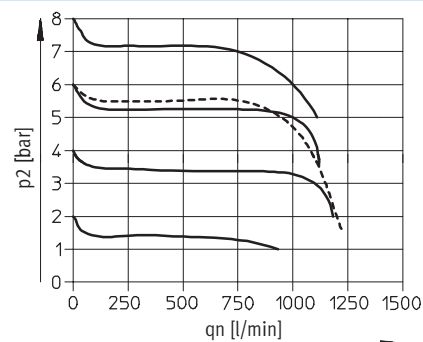
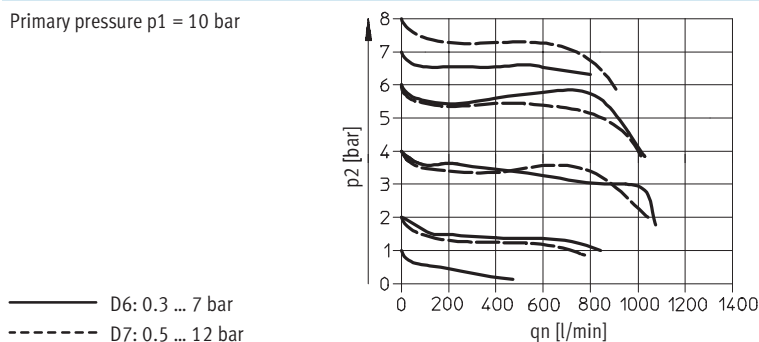
Standard flow rate q_n as a function of output pressure p_2

Pressure regulation range D6 or D7
MS4-LFR-1/8

Grade of filtration 5 μm

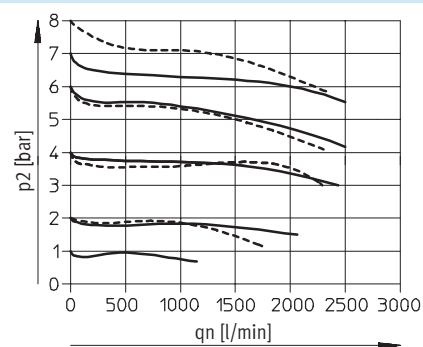
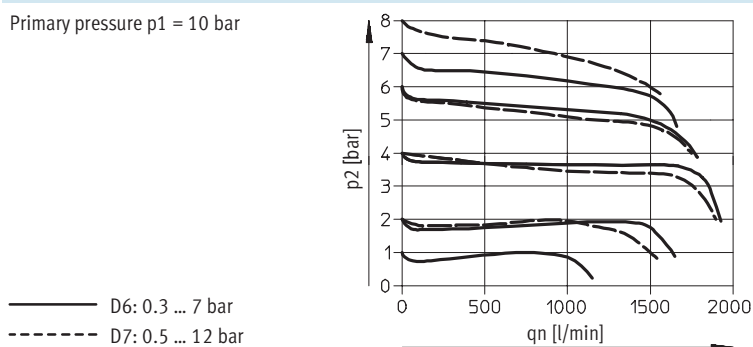
Grade of filtration 40 μm

Primary pressure $p_1 = 10$ bar



MS4-LFR-1/4

Primary pressure $p_1 = 10$ bar



Filter regulators MS4/MS6-LFR, MS series

Technical data

FESTO

Standard flow rate q_n as a function of output pressure p_2

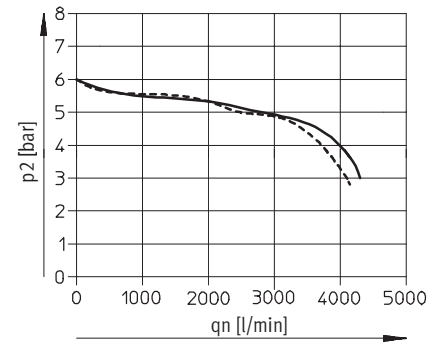
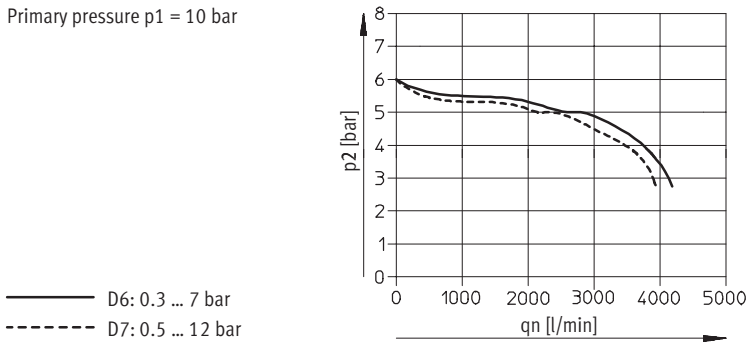
Pressure regulation range D6 or D7

Grade of filtration 5 μm

Grade of filtration 40 μm

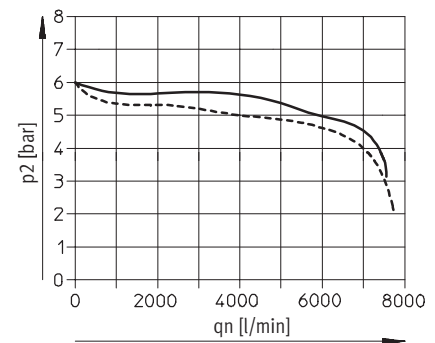
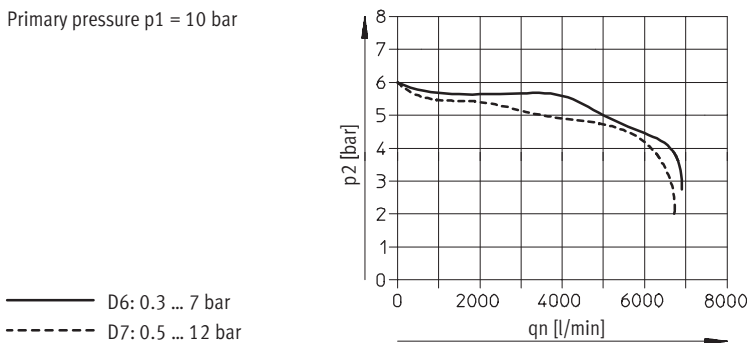
MS6-LFR-1/4

Primary pressure $p_1 = 10$ bar



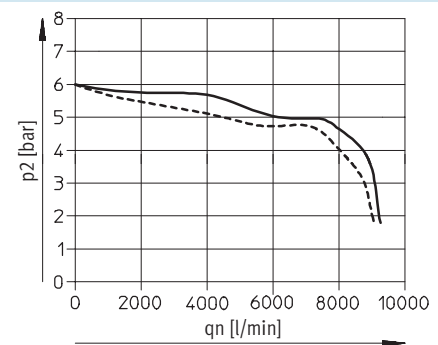
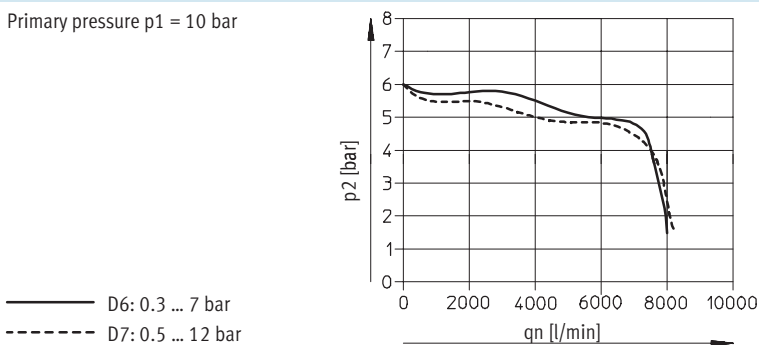
MS6-LFR-3/8

Primary pressure $p_1 = 10$ bar



MS6-LFR-1/2

Primary pressure $p_1 = 10$ bar



Filter regulators MS4/MS6-LFR, MS series

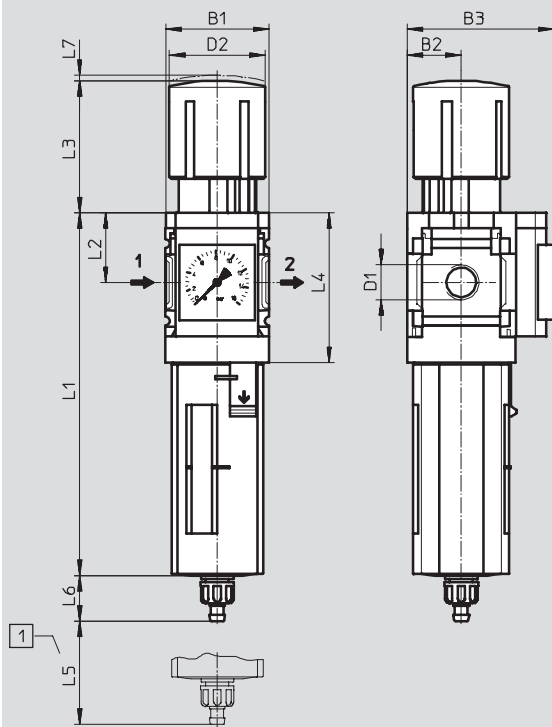
Technical data

FESTO

Dimensions – Standard

Download CAD data → www.festo.com/en/engineering

With pressure gauge, display unit [bar], rotary knob as standard, manual rotary condensate drain



 Installation dimensions

→ Flow direction

Type	B1	B2	B3	D1	D2	L1		L2	L3	L4	L5	L6		L7
						Bowl guard						Bowl guard		
						Plastic	Metal					Plastic	Metal	
MS4-LFR-1/8	40	21	57	G1/8	37.2	140.6	158.2	27	51.1	58.5	25	17.7	17.7	2
MS4-LFR-1/4				G1/4										
MS6-LFR-1/4	62	31	77	G1/4	51	189	194.4	39	86	84	68	15.8	19	5
MS6-LFR-3/8				G3/8										
MS6-LFR-1/2				G1/2										

Filter regulators MS4/MS6-LFR, MS series

Technical data

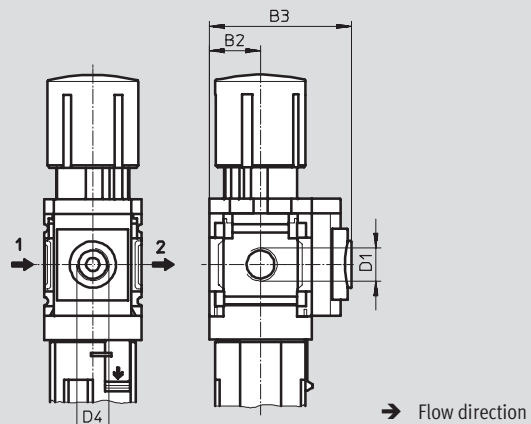
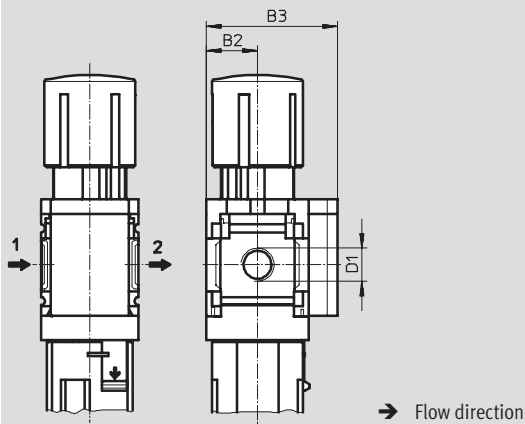
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Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com/en/engineering

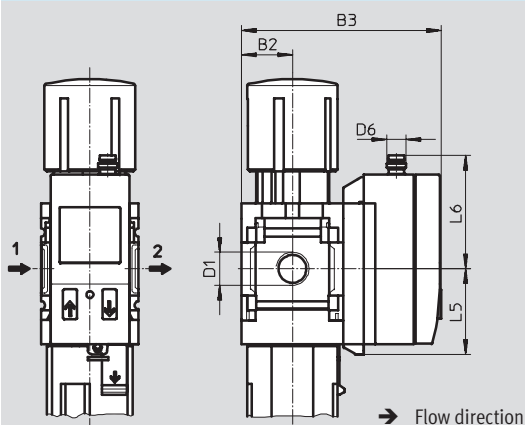
Cover plate VS

Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge



Pressure sensor with display AD1 ... AD4

Technical data SDE1 → www.festo.com



AD1 variants:
SDE1-D10-G2-MS-L-P1-M8 with
3-pin plug M8x1, 1 switching out-
put PNP

AD2 variants:
SDE1-D10-G2-MS-L-N1-M8 with
3-pin plug M8x1, 1 switching out-
put NPN

AD3 variants:
SDE1-D10-G2-MS-L-PI-M12 with
4-pin plug M12x1, 1 switching out-
put PNP and 4 ... 20 mA analogue

AD4 variants:
SDE1-D10-G2-MS-L-NI-M12 with
4-pin plug M12x1, 1 switching out-
put NPN and 4 ... 20 mA analogue

Type	B2	B3	D1	D4	D6	L5	L6
MS4-LFR-1/8-...-VS	21	54	G1/8	-	-	-	-
MS4-LFR-1/4-...-VS			G1/4				
MS4-LFR-1/8-...-A8	21	58.5	G1/8	G1/8	-	-	-
MS4-LFR-1/4-...-A8			G1/4				
MS4-LFR-1/8-...-A4	21	58.5	G1/8	G1/4	-	-	-
MS4-LFR-1/4-...-A4			G1/4				
MS4-LFR-1/8-...-AD1/AD2	21	82.6	G1/8	-	M8x1	35.1	46.7
MS4-LFR-1/4-...-AD1/AD2			G1/4				
MS4-LFR-1/8-...-AD3/AD4	21	82.6	G1/8	-	M12x1	35.1	55.8
MS4-LFR-1/4-...-AD3/AD4			G1/4				
MS6-LFR-1/4-...-VS	31	76	G1/4	-	-	-	-
MS6-LFR-3/8-...-VS			G3/8				
MS6-LFR-1/2-...-VS			G1/2				
MS6-LFR-1/4-...-A4	31	78.5	G1/4	G1/4	-	-	-
MS6-LFR-3/8-...-A4			G3/8				
MS6-LFR-1/2-...-A4			G1/2				
MS6-LFR-1/4-...-AD1/AD2	31	103	G1/4	-	M8x1	35.1	46.7
MS6-LFR-3/8-...-AD1/AD2			G3/8				
MS6-LFR-1/2-...-AD1/AD2			G1/2				
MS6-LFR-1/4-...-AD3/AD4	31	103	G1/4	-	M12x1	35.1	55.8
MS6-LFR-3/8-...-AD3/AD4			G3/8				
MS6-LFR-1/2-...-AD3/AD4			G1/2				

Filter regulators MS4/MS6-LFR, MS series

Technical data

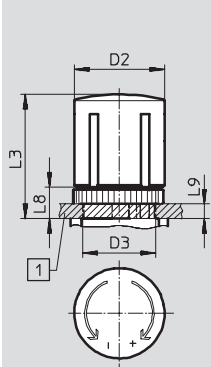
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Dimensions – Rotary knob

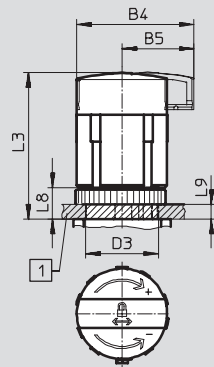
Download CAD data → www.festo.com/en/engineering

For installation into control panel

Standard

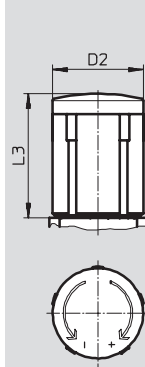


Standard, lockable AS

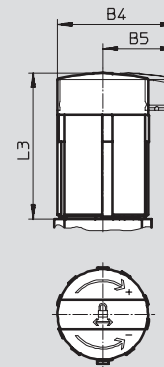


1 Max. control panel thickness

Long LD



Long, lockable LD-AS



Type	B4	B5	D2	D3 +1	L3	L8	L9
MS4-LFR-...	–	–	37.2	30	51.1	13	6
MS4-LFR-...-AS	48.3	29.7			60.2		
MS4-LFR-...-LD	–	–	37.2	–	51.1	–	–
MS4-LFR-...-LD-AS	48.3	29.7			60.2		
MS6-LFR-...	–	–	51	44	86	22	14
MS6-LFR-...-AS	67.7	42			95.5		
MS6-LFR-...-LD	–	–	51	–	86	–	–
MS6-LFR-...-LD-AS	67.7	42			95.5		

Filter regulators MS4/MS6-LFR, MS series

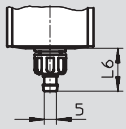
Technical data

FESTO

Dimensions – Condensate drain

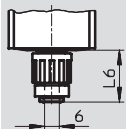
Download CAD data → www.festo.com/en/engineering

Manual rotary M



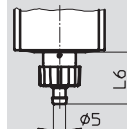
Barbed fitting for plastic tubing
PCN-4

Semi-automatic H



QS fitting for plastic tubing
PUN-6/PAN-6

Fully automatic V



Barbed fitting for plastic tubing
PCN-4

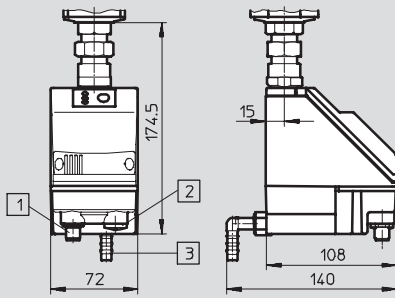
Type	L6
Plastic bowl guard	
MS4-LFR-...-M	17.7
MS6-LFR-...-M	15.8
Metal bowl	
MS4-LFR-...-M	17.7
MS6-LFR-...-M	19

Type	L6
Plastic bowl guard	
MS4-LFR-...-H	22.1
MS6-LFR-...-H	20.2
Metal bowl	
MS4-LFR-...-H	22.1
MS6-LFR-...-H	22.8

Type	L6
Plastic bowl guard	
MS4-LFR-...-V	20.4
MS6-LFR-...-V	18.5
Metal bowl	
MS4-LFR-...-V	20.4
MS6-LFR-...-V	22

Fully automatic, electrically actuated E1 ... E4

Technical data PWEA → www.festo.com



- 1 Variant E1
PWEA-AP-... with M12x1 plug,
5-pin for SIM-M12-5GD-...
- 2 Variant E2/E3/E4
PWEA-AC-... with cable conduit
fitting Pg9
- 3 Connection 360° rotatable for
plastic tubing PUN-H-12x2-...

Filter regulators MS4/MS6-LFR, MS series

Technical data

FESTO

Ordering data						
Pressure regulation range 0.3 ... 7 bar						
Size	Condensate drain	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
			Part No.	Type	Part No.	Type
Plastic bowl guard						
MS4	Manual rotary	G½	529 160	MS4-LFR-½-D6-CRM-AS	529 164	MS4-LFR-½-D6-ERM-AS
		G¼	529 144	MS4-LFR-¼-D6-CRM-AS	529 148	MS4-LFR-¼-D6-CRM-AS
	Fully automatic	G½	529 162	MS4-LFR-½-D6-CRV-AS	529 166	MS4-LFR-½-D6-ERV-AS
		G¼	529 146	MS4-LFR-¼-D6-CRV-AS	529 150	MS4-LFR-¼-D6-ERV-AS
MS6	manual rotary	G¼	529 196	MS6-LFR-¼-D6-CRM-AS	529 200	MS6-LFR-¼-D6-ERM-AS
		G¾	529 216	MS6-LFR-¾-D6-CRM-AS	529 220	MS6-LFR-¾-D6-ERM-AS
		G½	529 176	MS6-LFR-½-D6-CRM-AS	529 180	MS6-LFR-½-D6-ERM-AS
	fully automatic	G¼	529 198	MS6-LFR-¼-D6-CRV-AS	529 202	MS6-LFR-¼-D6-ERV-AS
		G¾	529 218	MS6-LFR-¾-D6-CRV-AS	529 222	MS6-LFR-¾-D6-ERV-AS
		G½	529 178	MS6-LFR-½-D6-CRV-AS	529 182	MS6-LFR-½-D6-ERV-AS

Ordering data						
Pressure regulation range 0.5 ... 12 bar						
Size	Condensate drain	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
			Part No.	Type	Part No.	Type
Plastic bowl guard						
MS4	manual rotary	G½	529 168	MS4-LFR-½-D7-CRM-AS	529 172	MS4-LFR-½-D7-ERM-AS
		G¼	529 152	MS4-LFR-¼-D7-CRM-AS	529 156	MS4-LFR-¼-D7-ERM-AS
	fully automatic	G½	529 170	MS4-LFR-½-D7-CRV-AS	529 174	MS4-LFR-½-D7-ERV-AS
		G¼	529 154	MS4-LFR-¼-D7-CRV-AS	529 158	MS4-LFR-¼-D7-ERV-AS
MS6	manual rotary	G¼	529 204	MS6-LFR-¼-D7-CRM-AS	529 208	MS6-LFR-¼-D7-ERM-AS
		G¾	529 224	MS6-LFR-¾-D7-CRM-AS	529 228	MS6-LFR-¾-D7-ERM-AS
		G½	529 184	MS6-LFR-½-D7-CRM-AS	529 188	MS6-LFR-½-D7-ERM-AS
	fully automatic	G¼	529 206	MS6-LFR-¼-D7-CRV-AS	529 210	MS6-LFR-¼-D7-ERV-AS
		G¾	529 226	MS6-LFR-¾-D7-CRV-AS	529 230	MS6-LFR-¾-D7-ERV-AS
		G½	529 186	MS6-LFR-½-D7-CRV-AS	529 190	MS6-LFR-½-D7-ERV-AS

Metal bowl						
MS4	manual rotary	G $\frac{1}{8}$	535 702	MS4-LFR- $\frac{1}{8}$ -D7-CUM-AS	535 708	MS4-LFR- $\frac{1}{8}$ -D7-EUM-AS
		G $\frac{1}{4}$	535 718	MS4-LFR- $\frac{1}{4}$ -D7-CUM-AS	535 724	MS4-LFR- $\frac{1}{4}$ -D7-EUM-AS
	fully automatic	G $\frac{1}{8}$	535 704	MS4-LFR- $\frac{1}{8}$ -D7-CUV-AS	535 706	MS4-LFR- $\frac{1}{8}$ -D7-EUV-AS
		G $\frac{1}{4}$	535 720	MS4-LFR- $\frac{1}{4}$ -D7-CUV-AS	535 722	MS4-LFR- $\frac{1}{4}$ -D7-EUV-AS
MS6	manual rotary	G $\frac{1}{4}$	530 342	MS6-LFR- $\frac{1}{4}$ -D7-CUM-AS	529 212	MS6-LFR- $\frac{1}{4}$ -D7-EUM-AS
		G $\frac{3}{8}$	530 346	MS6-LFR- $\frac{3}{8}$ -D7-CUM-AS	529 232	MS6-LFR- $\frac{3}{8}$ -D7-EUM-AS
		G $\frac{1}{2}$	530 338	MS6-LFR- $\frac{1}{2}$ -D7-CUM-AS	529 192	MS6-LFR- $\frac{1}{2}$ -D7-EUM-AS
	fully automatic	G $\frac{1}{4}$	530 344	MS6-LFR- $\frac{1}{4}$ -D7-CUV-AS	529 214	MS6-LFR- $\frac{1}{4}$ -D7-EUV-AS
		G $\frac{3}{8}$	530 348	MS6-LFR- $\frac{3}{8}$ -D7-CUV-AS	529 234	MS6-LFR- $\frac{3}{8}$ -D7-EUV-AS
		G $\frac{1}{2}$	530 340	MS6-LFR- $\frac{1}{2}$ -D7-CUV-AS	529 194	MS6-LFR- $\frac{1}{2}$ -D7-EUV-AS

Ordering data – Wearing parts kits			
Size	Part No.	Type	
MS4	673 647	MS4-LFR	
MS6	673 648	MS6-LFR	

Filter regulators MS4/MS6-LFR, MS series

Ordering data – Modular products

FESTO

M Mandatory data →							
Module No.	Series	Size	Function	Connection size	Pressure regulation range	Grade of filtration	Bowl
526 489 526 490	MS	4 6	LFR	1/8, 1/4, 3/8, 1/2, AGA, AGB, AGC, AGD, AGE	D5 D6 D7 D8	E C	R U
Order example							
526 489	MS	4	- LFR	- AGA	- D6	- C	- R

Ordering table							
Grid dimension		[mm]	40	62	Condi- tions	Code	Enter code
M	Module No.		526 489	526 490			
	Series		Standard			MS	MS
	Size		4	6		...	
	Function		Filter regulator			-LFR	-LFR
	Connection size	Thread G1/8	–			-1/8	
		Thread G1/4	Thread G1/4			-1/4	
		–	Thread G3/8			-3/8	
		–	Thread G1/2			-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	0.3 ... 4 bar				-D5	
		0.3 ... 7 bar				-D6	
		0.5 ... 12 bar				-D7	
		–	0.5 ... 16 bar			-D8	
	Grade of filtration	40 µm				-E	
		5 µm				-C	
	Bowl	Plastic bowl with plastic bowl guard				-R	
		Metal bowl				-U	

Transfer order code

	MS		-	LFR	-		-		-	
--	----	--	---	-----	---	--	---	--	---	--

Filter regulators MS4/MS6-LFR, MS series

Ordering data – Modular products

FESTO

Options							
Condensate drain	Pressure gauge alternatives	Alternative pressure gauge scale	Secondary venting	Rotary knob	Security	Type of mounting	Alternative flow direction
M H V E1 E2 E3 E4	VS A8 A4 AD1 AD2 AD3 AD4	PSI MPA	OS	LD	AS	WR WP WPM WB WBM	Z
- M	- A8	-	-	- LD	- AS	- WPM	- Z

Ordering table							
Grid dimension	[mm]	40	62	Condi- tions	Code	Enter code	
 M	Condensate drain	Manual			-M		
		Semi-automatic (P1 max. 12 bar)		1	-H		
		Fully automatic (P1 max. 12 bar)		1	-V		
	External, fully- automatic, elec- trical	-	24 V DC, M12	2	-E1		
		-	110 V AC, terminals	2	-E2		
		-	230 V AC, terminals	2	-E3		
		-	24 V DC, terminals	2	-E4		
 O	Pressure gauge alternatives	Cover plate			-VS		
		Adapter plate for EN pressure gauge 1/8, without pressure gauge	-		-A8		
		Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4		
		Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin		3	-AD1		
		Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin		3	-AD2		
		Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analogue output 4 ... 20 mA		3	-AD3		
		Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analogue output 4 ... 20 mA		3	-AD4		
	Alternative pressure gauge scale	psi		4	-PSI		
		MPa		4	-MPA		
	Secondary venting	Without secondary venting			-OS		
	Rotary knob	Long rotary knob			-LD		
	Security	Lockable rotary knob			-AS		
	Type of mounting	Mounting bracket with knurled nut for regulator head		5	-WR		
		Mounting bracket		6	-WP		
		Mounting bracket		6	-WPM		
		Mounting bracket			-WB		
		Mounting bracket			-WBM		
	Alternative flow direction	Flow direction from right to left			-Z		

- 1 H, V** Not with pressure regulation range D8
2 E1 ... E4 Only with metal bowl U
3 AD1 ... AD4 Measuring range max. 10 bar.
 Not with pressure regulation range D8

- 4 PSI, MPA** Not with pressure gauge alternatives VS, A8, A4, AD1, AD2, AD3, AD4
5 WR Not with long rotary knob LD
6 WP, WPM Only with connecting plate AGA, AGB, AGC, AGD or AGE

Transfer order code

- - - - - - - -

MS12 series service units

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Wide range of configuration options

→ www.festo.com/en/engineering



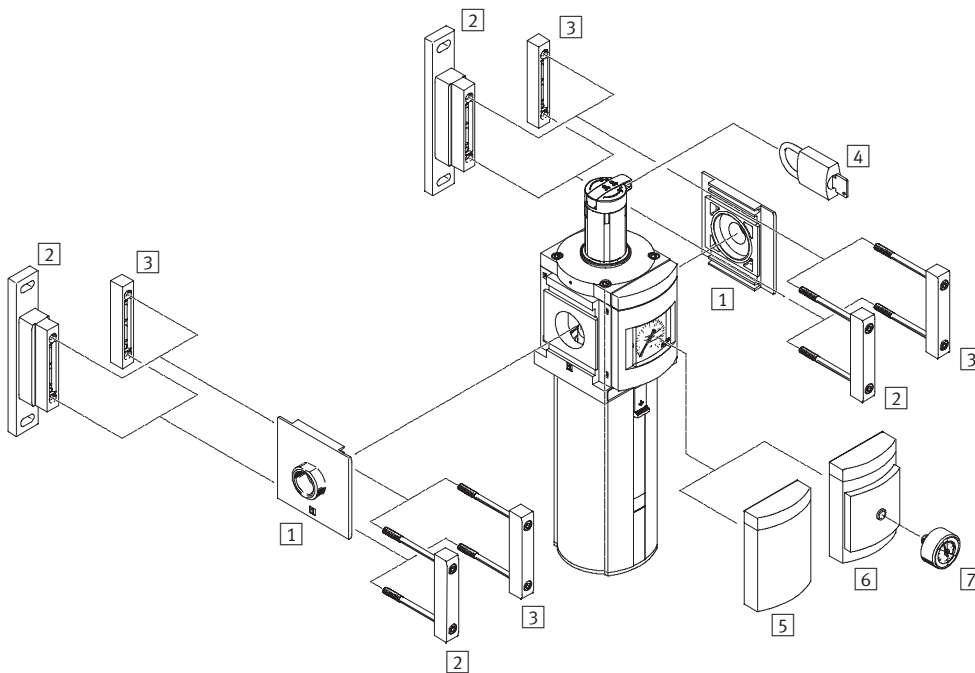
- Grid dimension 124 mm
- High flow rates
- Modern design



Filter regulators MS12-LFR, MS series

Peripherals overview

FESTO



Mounting attachments and accessories

	→ Page
1 Connecting plate MS12-AG...	11-2
2 Mounting bracket MS12-WP	11-9
3 Module connector MS12-MV	11-9
4 Padlock LRVS-D	11-12
5 Cover plate VS	3-26
6 Adapter for EN pressure gauge 1/4 A4	3-26
7 Pressure gauge MA	11-11

Filter regulators MS12-LFR, MS series

Type codes

FESTO

		MS	12	-	LFR	-	G	-	D7	-	C	U	V	-	LD	-	AS
Series																	
MS	Standard service unit																
Size																	
12	Grid dimension 124 mm																
Service function																	
LFR	Filter regulator																
Connection size																	
G	Module without connecting thread, without connecting plate Connecting plates → Accessories																
Pressure regulation range																	
D7	Pressure regulation range 0.5 ... 12 bar																
Grade of filtration																	
C	5 µm																
E	40 µm																
Bowl guard																	
U	Metal bowl																
Condensate drain																	
V	Fully automatic																
Rotary knob																	
LD	Long rotary knob																
Actuator lock																	
AS	Lockable rotary knob																

Further variants can be ordered using the modular system

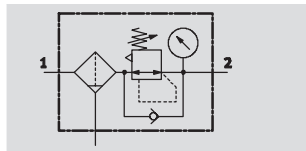
Filter regulators LFR → 3-26

- Connecting plates
- Pressure regulation range
- Condensate drain
- Pressure gauge alternatives
- Alternative pressure gauge scale
- Actuator lock
- Type of mounting
- Alternative flow direction

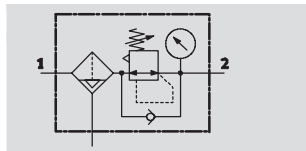
Filter regulators MS12-LFR, MS series

Technical data

Function
Condensate drain
manual rotary
with pressure gauge



Condensate drain
fully automatic
with pressure gauge



-  - Flow rate
11,000 ... 17,000 l/min

-  - Temperature range
-10 ... +60 °C

-  - Input pressure
0.8 ... 20 bar

-  - [www.festo.com/en/
Spare_parts_service](http://www.festo.com/en/Spare_parts_service)

Wearing parts kits
➔ 3-25

With this device, the filter and pressure regulator are combined into a single unit. The sintered filter with water separator removes contamination, pipe sinter, rust and condensate from the compressed air.



- Good control characteristics with low hysteresis and primary pressure compensation
- Good particle and condensate separation
- High flow rates
- Pilot actuated diaphragm regulator without intrinsic air consumption
- Three pressure regulation ranges: 0.3 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Pressure gauge connection for different fitting options
- Available with manual, fully automatic or fully automatic, electrically actuated condensate drain
- Setting values are secured by locking the rotary knob
- Rotary knob can be locked using accessories
- Choice of filter cartridges: 5 µm or 40 µm
- Filter cartridges ➔ 11-10

General technical data

Pneumatic connection 1, 2 ¹⁾		G1	G1¼	G1½	G2
Design		Filter regulator with/without pressure gauge			
		Sintered filter with centrifugal separation			
		Pilot actuated diaphragm regulator			
Regulating function		With primary pressure compensation			
		With secondary venting			
		With return flow function			
		Output pressure constant			
Type of mounting		Via accessories			
		In-line installation			
Assembly position		Vertical ±5°			
Grade of filtration [µm]		5 (air purity class at the output 3.7.- to DIN ISO 8573-1)			
		40 (air purity class at the output 5.7.- to DIN ISO 8573-1)			
Bowl guard		Metal bowl			
Condensate drain		Manual rotary			
		Fully automatic			
		Fully automatic, electrical actuated			
Actuator lock		Rotary knob with detent			
		Lockable with accessories			
Pressure regulation range	D6 [bar]	0.3 ... 7			
	D7 [bar]	0.5 ... 12			
	D8 [bar]	0.5 ... 16			
Max. hysteresis [bar]		0.4			
Pressure indicator		With pressure gauge			
Max. condensate volume [cm³]		400			

1) Dependent on connecting plate selected, must be ordered separately as an accessory ➔ 11-2

Filter regulators MS12-LFR, MS series

Technical data

FESTO

Standard nominal flow rate $q_{nN}^{1)}$ [l/min]					
Pneumatic connection		G1	G1¼	G1½	G2
Grade of filtration	5 µm	11,000	11,500	12,000	14,000
	40 µm	12,000	12,500	13,000	17,000

- 1) Dependent on connecting plate selected, must be ordered separately as an accessory → 11-2
measured at $p_1 = 10$ bar and $p_2 = 6$ bar, $\Delta p = 0.5$ bar

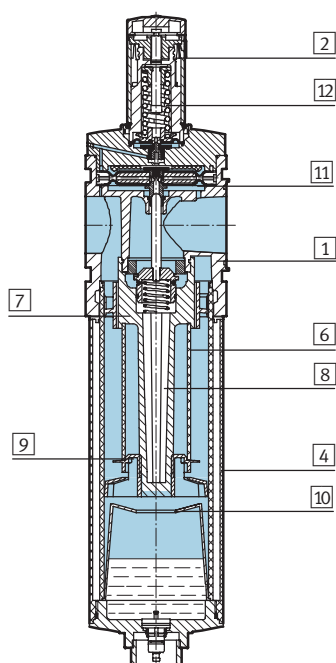
Operating and environmental conditions			
Condensate drain	Manual rotary M	Fully automatic V	Fully automatic, electrical actuated E...
Input pressure [bar]	0.8 ... 20	2 ... 12	0.8 ... 16
Operating medium	Compressed air, air quality class 5.7- to DIN ISO 8573-1		
Ambient temperature [°C]	-10 ... +60	+5 ... +60	+1 ... +60
Temperature of medium [°C]	-10 ... +60	+5 ... +60	+1 ... +60
Storage temperature [°C]	-10 ... +60	-10 ... +60	+1 ... +60
Corrosion resistance CRC ¹⁾	2		

- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weights [g]	
With metal bowl	7,000
With metal bowl and fully automatic, electrically actuated condensate drain	7,700

Materials

Sectional view



Filter regulator		
1	Body	Die-cast aluminium
2	Regulating knob	Polyamide
4	Metal bowl	Wrought aluminium alloy
6	Filter element	Sintered bronze
7	Spin disc	Polyacetate
8	Filter holder	Polyacetate
9	Separating plate	Polyacetate
10	Stabilising disc	Polyacetate
11	Diaphragm	Nitrile rubber
12	Spring	Steel
–	Seals	Nitrile rubber

Filter regulators MS12-LFR, MS series

Technical data

FESTO

Standard flow rate q_n as a function of output pressure p_2

Grade of filtration 40 μm

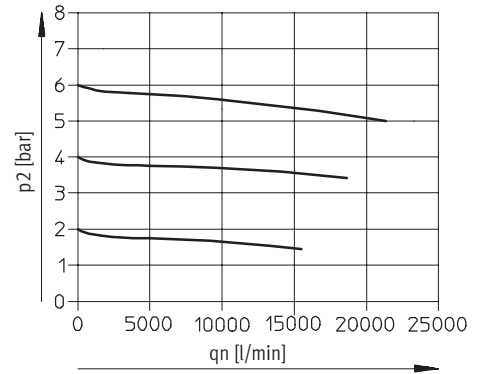
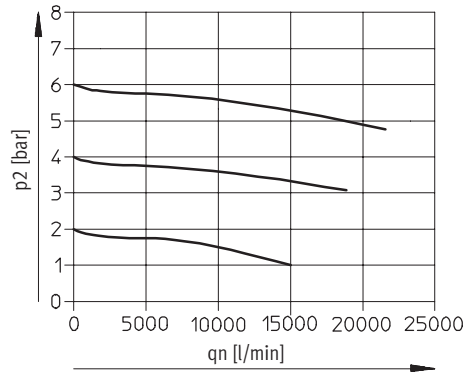
With connecting plate MS12-AGF

Pneumatic connection G1

With connecting plate MS12-AGG

Pneumatic connection G1¼

Primary pressure $p_1 = 10 \text{ bar}$



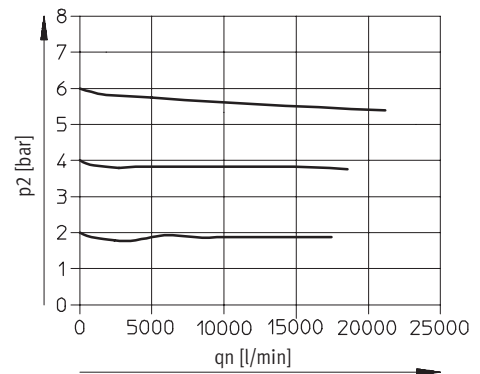
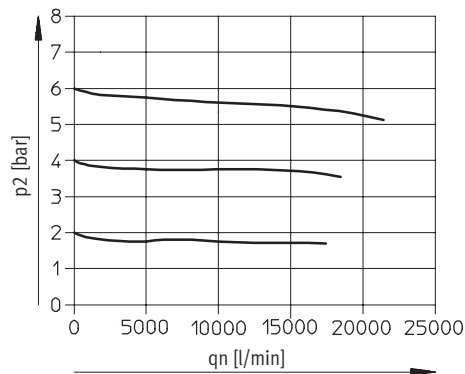
With connecting plate MS12-AGH

Pneumatic connection G1½

With connecting plate MS12-AGI

Pneumatic connection G2

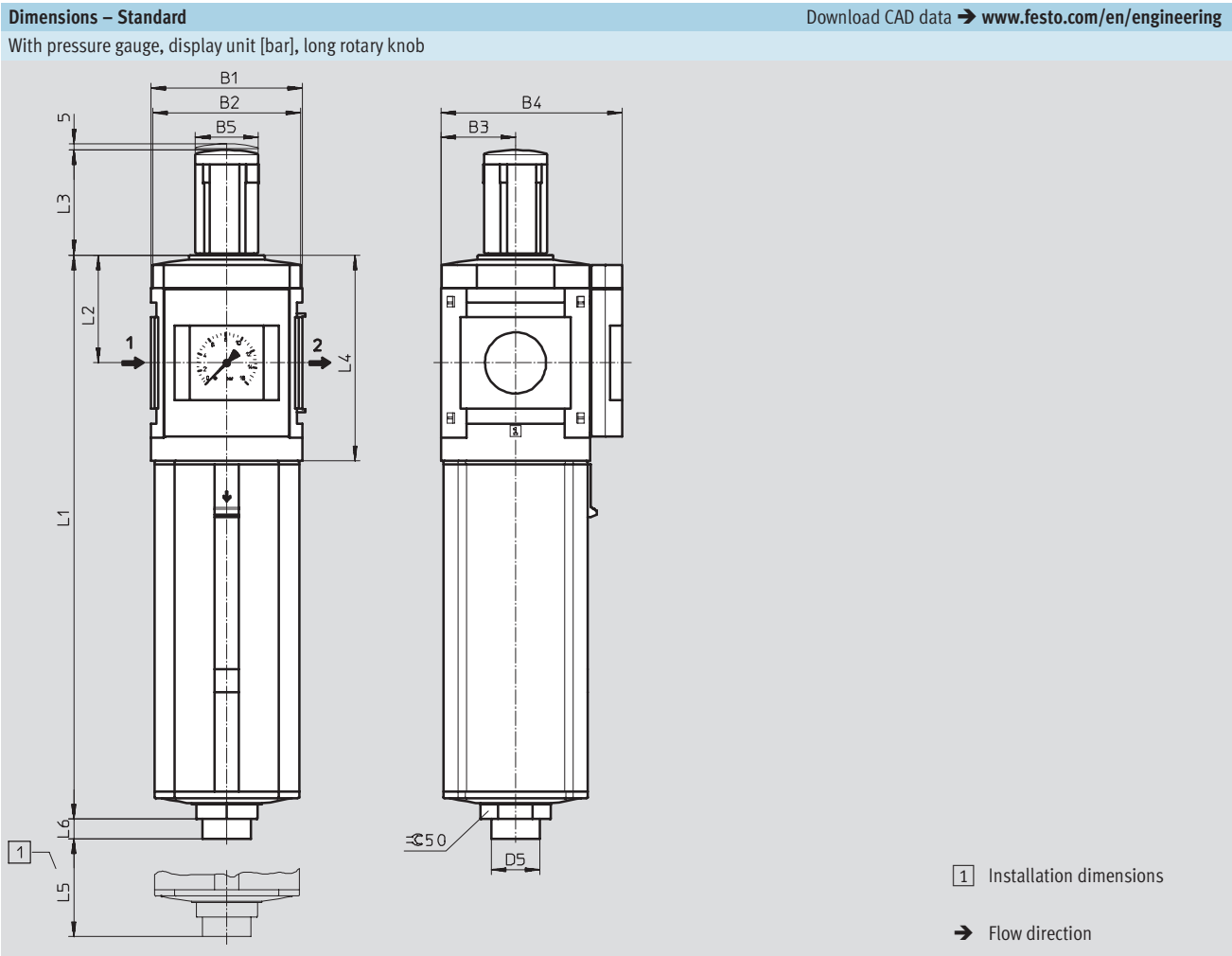
Primary pressure $p_1 = 10 \text{ bar}$



Filter regulators MS12-LFR, MS series

Technical data

FESTO



Type	B1	B2	B3	B4	B5	D5 Ø	L1	L2	L3	L4	L5	L6
MS12-LFR	124	122	61	148	51	40	460	88	86	168	250	16

Filter regulators MS12-LFR, MS series

Technical data

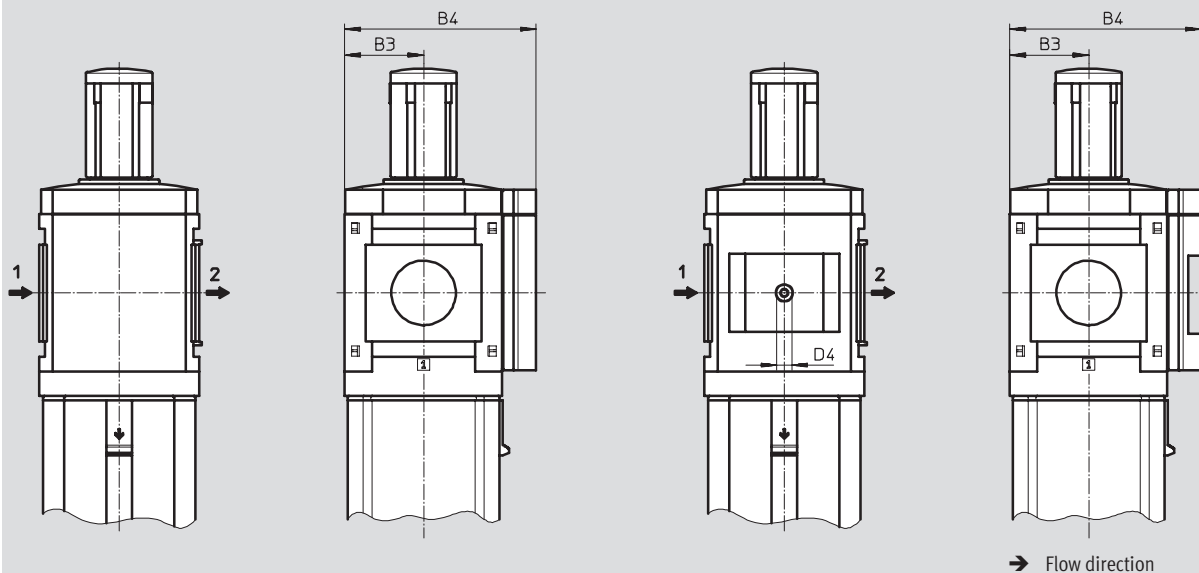
FESTO

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com/en/engineering

Cover plate VS

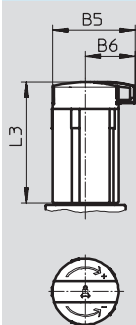
Adapter A4 for EN pressure gauge 1/4, without pressure gauge



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

Dimensions – Rotary knob

Long, lockable LD-AS



Type	B5	B6	L3
MS12-LFR-...-LD-AS	64.4	39	95.5

Filter regulators MS12-LFR, MS series

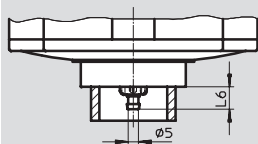
Technical data

FESTO

Dimensions – Condensate drain

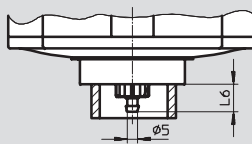
Download CAD data → www.festo.com/en/engineering

Manual rotary M



Barbed fitting for plastic tubing
PCN-4

Fully automatic V



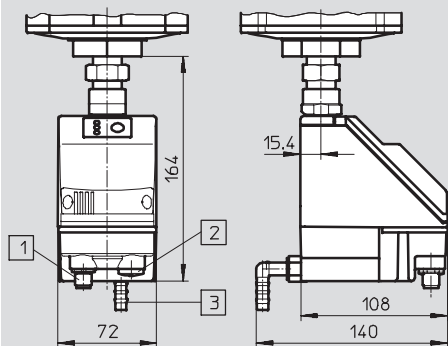
Barbed fitting for plastic tubing
PCN-4

Type	L6
MS12-LFR-...-M	11

Type	L6
MS12-LFR-...-V	13

Fully automatic, electrically actuated E1 ... E4

Technical data PWEA → www.festo.com



- 1 Variant E1
PWEA-AP-... with M12x1 plug,
5-pin for SIM-M12-5GD-...
- 2 Variant E2/E3/E4
PWEA-AC-... with cable conduit
fitting Pg9
- 3 Connection 360° rotatable for
plastic tubing PUN-H-12x2-...

Ordering data

Pressure regulation range 0.5 ... 12 bar, metal bowl, long rotary knob, can be locked using accessories

Size	Condensate drain	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
			Part No.	Type	Part No.	Type
MS12	fully automatic	G1 ... G2 ¹⁾	537 150	MS12-LFR-G-D7-CUV-LD-AS	537 149	MS12-LFR-G-D7-EUV-LD-AS

1) Connecting plate must be ordered separately as an accessory → 11-2

Ordering data – Wearing parts kits

Size	Part No.	Type
MS12	673 586	MS12-LR/LFR

Filter regulators MS12-LFR, MS series

Ordering data – Modular products

FESTO

Mandatory data →

Module No.	Series	Size	Function	Connection size	Pressure regulation range	Grade of filtration	Bowl
535 022	MS	12	LFR	AGF AGG AGH AGI G	D6 D7 D8	E C	U
Order example							
535 022	MS	12	- LFR	- AGF	- D6	- C	- U

Ordering table

Grid dimension	[mm]	124	Condi- tions	Code	Enter code
M Module No.		535 022			
Series		Standard		MS	MS
Size		12		12	12
Function		Filter regulator		-LFR	-LFR
Connection size		Connecting plate G1		-AGF	
		Connecting plate G1¼		-AGG	
		Connecting plate G1½		-AGH	
		Connecting plate G2		-AGI	
		Module without connecting thread, without connecting plate		-G	
Pressure regulation range		0.3 ... 7 bar		-D6	
		0.5 ... 12 bar		-D7	
		0.5 ... 16 bar		-D8	
Grade of filtration		40 µm		-E	
		5 µm		-C	
Bowl		Metal bowl		-U	-U

Transfer order code

535 022	MS	12	- LFR	-		-		-		-	U
---------	----	----	-------	---	--	---	--	---	--	---	---

Filter regulators MS12-LFR, MS series

Ordering data – Modular products

FESTO

Options						
Condensate drain	Pressure gauge alternatives	Alternative pressure gauge scale	Rotary knob	Security	Type of mounting	Alternative flow direction
M V E1 E2 E3 E4	VS A4	PSI MPA	LD	AS	WP	Z
- E1	-	-	- LD	- AS	- WP	- Z

Ordering table						
Grid dimension	[mm]	124	Condi- tions	Code	Enter code	
Condensate drain M		Manual		-M		
		Fully automatic (P1 max. 12 bar)	1	-V		
		External fully automatic condensate drain, electrical, 24 V DC, M12		-E1		
		External fully automatic condensate drain, electrical, 110 V AC, terminals		-E2		
		External fully automatic condensate drain, electrical, 230 V AC, terminals		-E3		
		External fully automatic condensate drain, electrical, 24 V DC, terminals		-E4		
Pressure gauge alternatives O		Cover plate		-VS		
		Adapter plate for EN pressure gauge 1/4, without pressure gauge		-A4		
Alternative pressure gauge scale		psi	2	-PSI		
		MPa	2	-MPA		
Rotary knob		Long rotary knob		-LD		-LD
Security		Lockable rotary knob		-AS		
Type of mounting		Mounting bracket	3	-WP		
Alternative flow direction		Flow direction from right to left		-Z		

- 1 **V** Not with pressure regulation range D8.
 2 **PSI, MPA** Not with pressure gauge alternatives VS, A4.
 3 **WP** Only with connecting plate AGF, AGG, AGH or AGI.

Transfer order code

- [] - [] - [] - LD - [] - [] - []

MS series service units
Filter regulators

3



MS series service units

Accessories

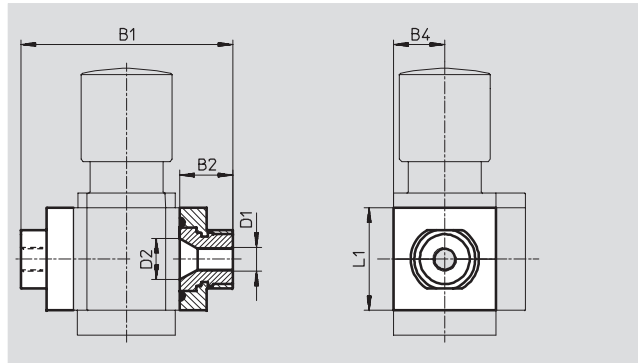
FESTO

Connecting plate MS4/6-AG...

(order code: AG...)

- Adapter for pneumatic connection
- MS6-AGE for implementing threaded connection G $\frac{3}{4}$

Material:
Aluminium



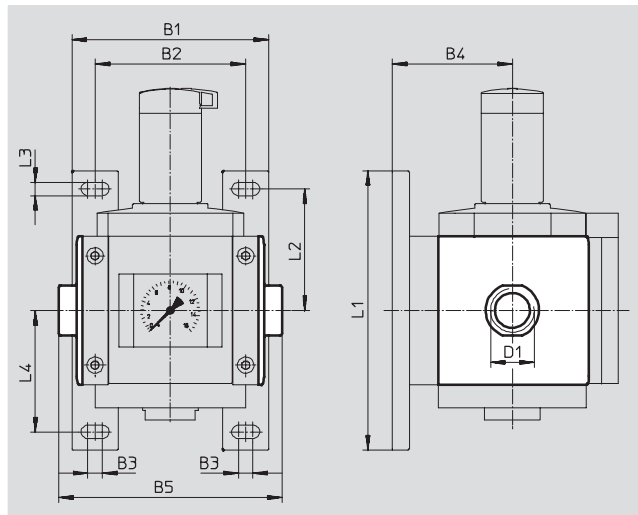
Dimensions and ordering data									
Size	B1	B2	B4	D1	D2	L1	Weight [g]	Part No.	Type
MS4	83.5	21.5	21	G $\frac{1}{8}$	16.8	42	128	526 068	MS4-AGA
				G $\frac{1}{4}$				526 069	MS4-AGB
				G $\frac{3}{8}$				526 070	MS4-AGC
MS6	115	26.5	31	G $\frac{1}{4}$	24	62	300	526 080	MS6-AGB
				G $\frac{3}{8}$				526 081	MS6-AGC
				G $\frac{1}{2}$				526 082	MS6-AGD
				G $\frac{3}{4}$				526 083	MS6-AGE

Connecting plate MS12-AG...

(order code: AG...)

- Adapter for pneumatic connection

Material:
Die-cast aluminium
Free of copper and PTFE



Dimensions and ordering data												
Size	B1	B2	B3	B4	B5	D1	L1	L2	L3	L4	Weight [g]	Part No. Type
MS12	162	124	12	99	184	G1	230	100	11	100	1,300	537 135 MS12-AGF
					184	G1 $\frac{1}{4}$						537 136 MS12-AGG
					184	G1 $\frac{1}{2}$						537 137 MS12-AGH
					196	G2						537 138 MS12-AGI

MS series service units

Accessories

FESTO

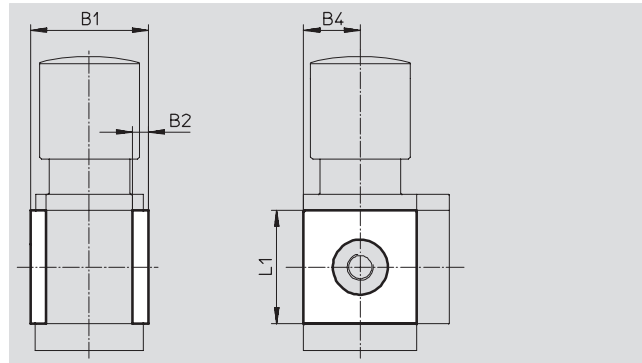
Cover cap MS4/6-END

- Can be used to cover the body sides of the first and last module if connecting plates are not used.

Material:

Reinforced polyamide

Free of copper and PTFE



Dimensions and ordering data						
Size	B1	B2	B4	L1	Part No.	Type
MS4	43.6	6	21	42	538 779	MS4-END
MS6	67	8	31	62	538 780	MS6-END

Mounting plate MS6-AEND

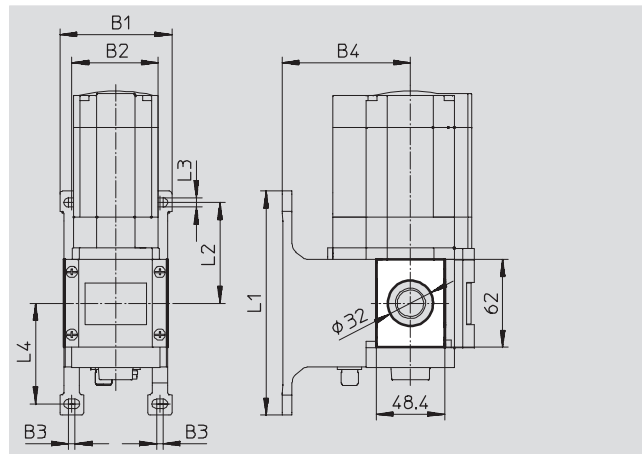
(order code: WBE; scope of delivery includes wall mounting plate MS6-WPB)

- In combination with wall mounting plate MS6-WP or MS6-WPB for mounting an individual unit on a wall with direct thread

Material:

Reinforced polyamide

Free of copper and PTFE



Dimensions and ordering data											
Size	B1	B2	B3	B4	L1	L2	L3	L4	CRC ¹⁾	Weight [g]	Part No. Type
MS6	79	62	4.5	90.5	158	71	6.6	71	2	17	535 408 MS6-AEND  New

1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

MS series service units

Accessories

FESTO

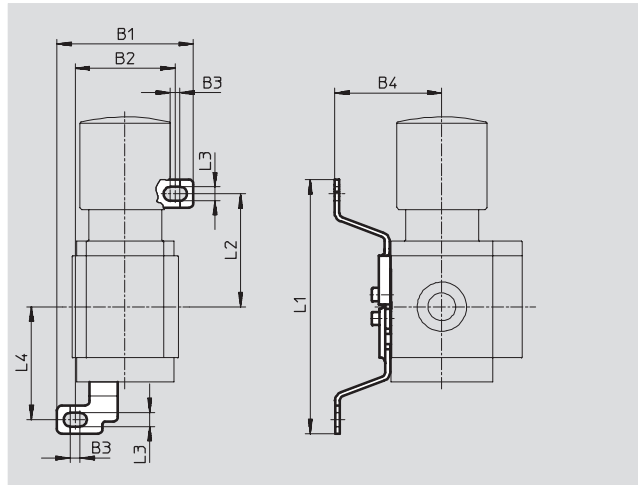
Mounting bracket MS4/6-WB

(order code: WB)

- For wall mounting

Material:

Steel



Dimensions and ordering data											
Size	B1	B2	B3	B4	L1	L2	L3	L4	Weight [g]	Part No.	Type
MS4	56.2	41.2	4	44.2	104.6	46.6	5.6	46.5	46	532 185	MS4-WB
MS6	79.4	61.9	4.5	55	157.6	71	6.6	71	121	532 196	MS6-WB

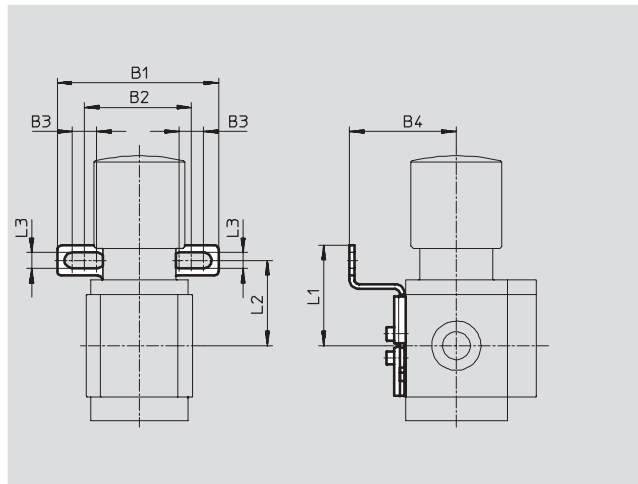
Mounting bracket MS4-WBM

(order code: WBM)

- For wall mounting

Material:

Steel



Dimensions and ordering data										
Size	B1	B2	B3	B4	L1	L2	L3	Weight [g]	Part No.	Type
MS4	66.5	44	10	44	41.3	35	6.5	48	526 062	MS4-WBM

MS series service units

Accessories



Mounting bracket MS4/6-WR

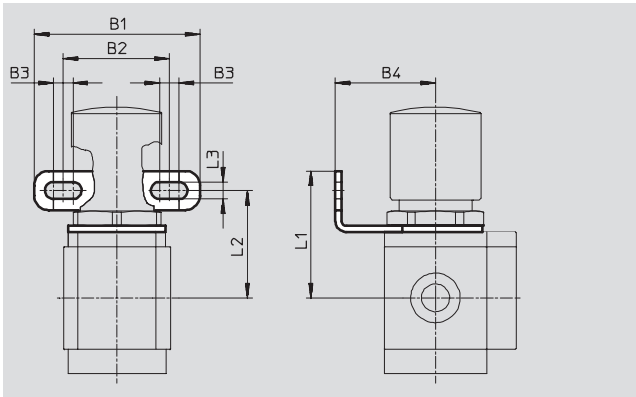
(order code: WR)

- For wall mounting
- For filter regulator, pressure regulator

Material:
Steel


Note

The hex nut for attaching components to this bracket must be ordered separately.

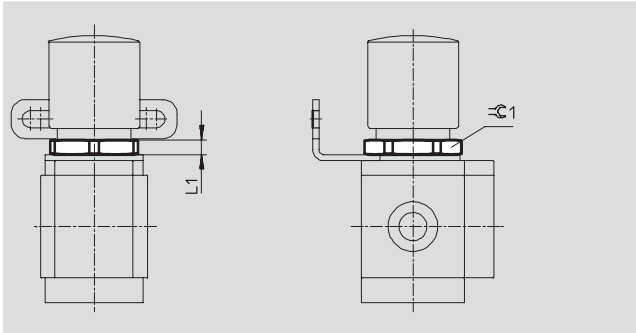


Dimensions and ordering data										
Size	B1	B2	B3	B4	L1	L2	L3	Weight [g]	Part No.	Type
MS4	68	44	8	41	52	44	7	49	526 064	MS4-WR
MS6	70	42	8.2	40	67	57	7.1	90	526 075	MS6-WR

Hex nut MS4/6-WRS

- For front panel mounting
- For attaching components to the mounting bracket MS...-WR

Material:
Aluminium



Dimensions and ordering data					
Size	L1	⌀ 1	Weight [g]	Part No.	Type
MS4	6	36	6.9	532 187	MS4-WRS
MS6	7	55	20.9	532 188	MS6-WRS

MS series service units

Accessories

FESTO

Mounting bracket MS4/6-WP...

Clearances for mounting service unit combinations

1 unit

MS4-...: 40 mm

MS6-...: 62 mm

2 units

MS4-...: 80 mm

MS6-...: 124 mm with WP, WPB

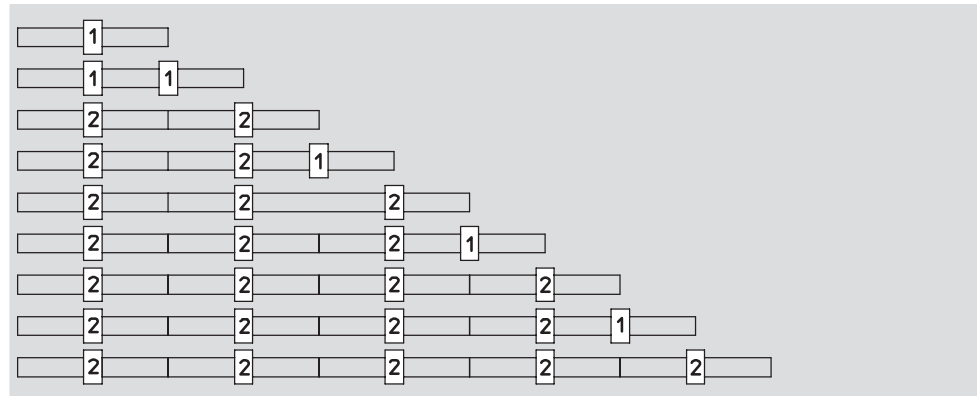
138 mm with WPM-2D

1 Mounting bracket WP, WPB or WPM-D

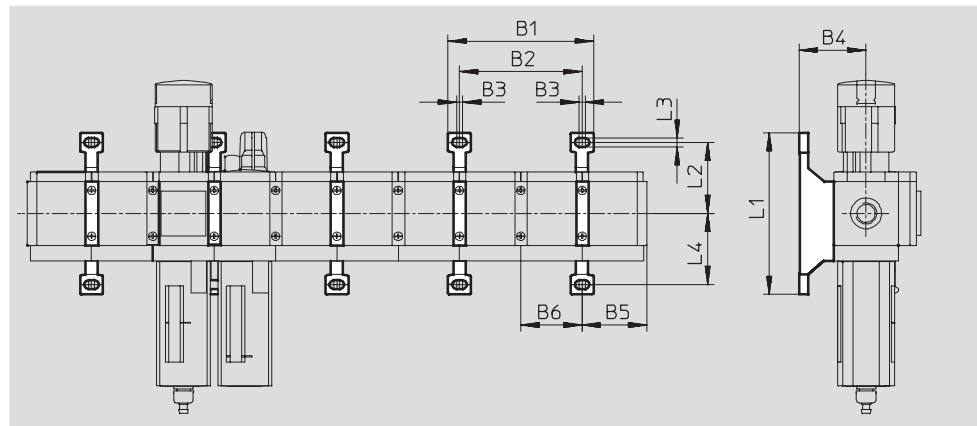
2 Mounting bracket WP, WPB or WPM-2D

Number of units

1 2 3 4 5 6 7 8 9 10



Mounting dimensions



Type	B1	B2	B3	B4	B5	B6	L1	L2	L3	L4
MS4-WP	95.2	80	4	44	41.9	40	106	46.5	5.6	46.7
MS4-WPB				66						
MS4-WPM-...D				44			92.8	34.8		40
MS6-WP	141	124	4.5	54	64.5	62	158	71	6.6	71
MS6-WPB				90.5						
MS6-WPM-...D				54			98.6	41.3		41.3

MS series service units

Accessories

FESTO

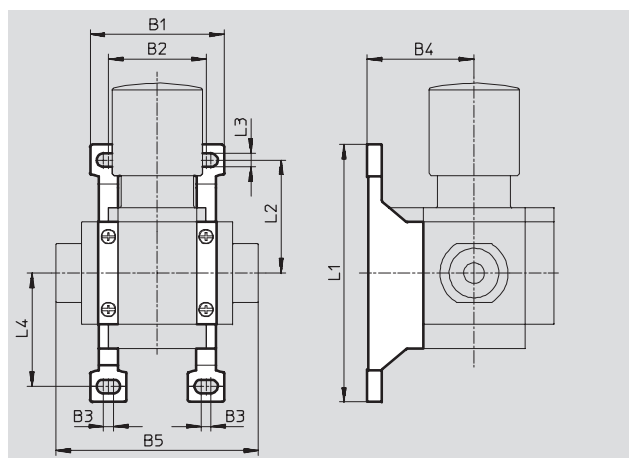
Mounting bracket MS4/6-WP

(order code: WP)

- For connecting the modules for wall mounting
- In combination with a connecting plate MS4/6-AG... for mounting an individual unit on a wall
- In combination with mounting plate MS6-AEND or for mounting an individual unit with direct thread on a wall
- For pressure regulator LRB with angled outlet block B... at rear

Material:

Die-cast aluminium



Dimensions and ordering data

Size	B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [g]	Part No.	Type
MS4	55.2	40.2	4	44	83.4	106	46.5	5.6	46.7	39	532 184	MS4-WP
MS6	79	62	4.5	54	115	158	71	6.6	71	76	532 195	MS6-WP

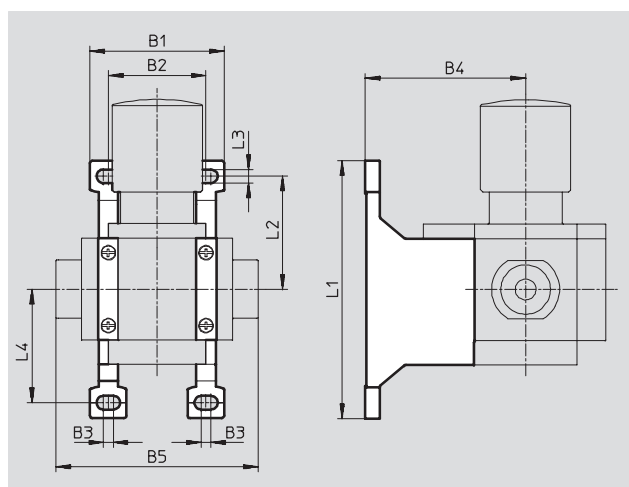
Mounting bracket MS4/6-WPB

(order code: WPB)

- For connecting the modules for wall mounting
- In combination with a connecting plate MS4/6-AG... for mounting an individual unit on a wall
- In combination with mounting plate MS6-AEND or for mounting an individual unit with direct thread on a wall
- Provides large wall gap for pressure regulator

Material:

Die-cast aluminium



Dimensions and ordering data

Size	B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [g]	Part No.	Type
MS4	55.2	40.2	4	66	83.4	106	46.5	5.6	46.7	55	526 063	MS4-WPB
MS6	79	62	4.5	90.5	115	158	71	6.6	71	115	526 074	MS6-WPB

MS series service units

Accessories

FESTO

Mounting bracket MS4/6-WPM

(order code: WPM)

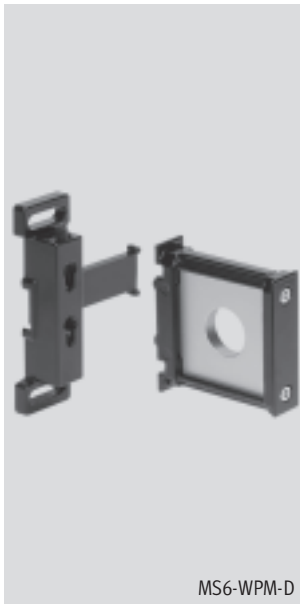
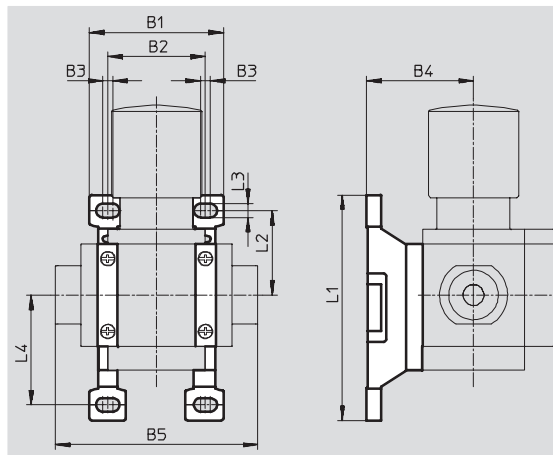
- For connecting the modules for wall mounting
- In combination with a connecting plate MS4/6-AG... for mounting an individual unit on a wall
- Speedy attachment and detachment
- For installation of modules with regulating knob pointing downwards

The distance piece D or 2D (designated in the type code) is included in the scope of delivery and ensures the correct clearance

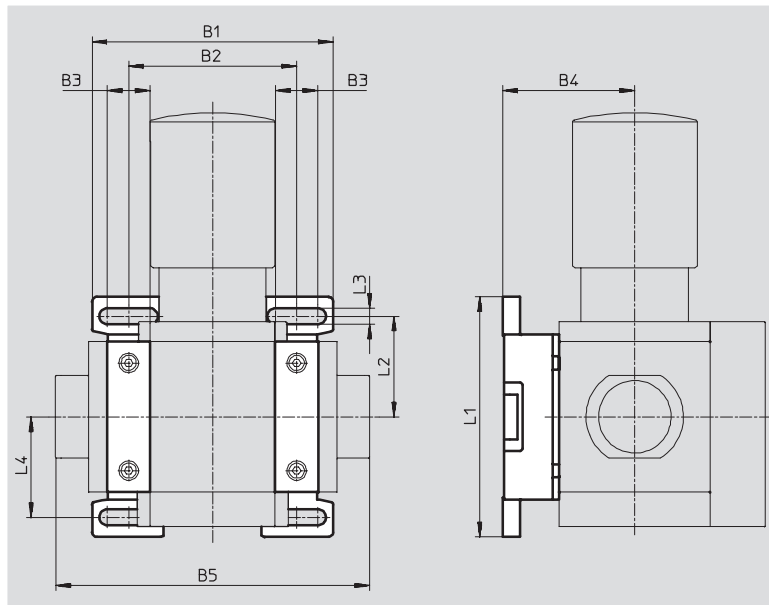
Material:
Die-cast aluminium



MS4-WPM-D



MS6-WPM-D



Dimensions and ordering data													
Size	B1	B2	B3	B4	B5	L1	L2	L3	L4	Clearance	Weight [g]	Part No.	Type
MS4	55.2	40	4	44	83.4	92.8	34.8	5.6	45.2	40	45	526 060	MS4-WPM-D
	95.2	80			123.4					80	55	526 061	MS4-WPM-2D
MS6	99	69	17.5	54	129	98.6	41.3	6.6	41.3	62	144	526 073	MS6-WPM-D
	168	138			198					124	154	532 186	MS6-WPM-2D

MS series service units

Accessories

FESTO

Wall mounting plate MS12-WP

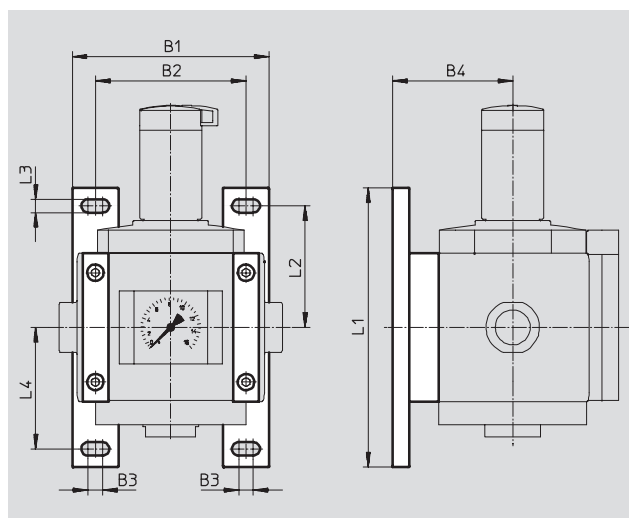
(order code: WP)

- For connecting the modules for wall mounting
- In combination with a connecting plate for mounting an individual unit on a wall

Material:

Die-cast aluminium

Free of copper and PTFE



Dimensions and ordering data

Size	B1	B2	B3	B4	L1	L2	L3	L4	Weight [g]	Part No.	Type
MS12	162	124	12	99	230	100	11	100	700	537 133	MS12-WP

Module connector MS...-MV

- For connecting modules

Material:

MS4/6: Stainless steel/polyacetate

MS12: Die-cast aluminium,
free of copper and PTFE



MS4/6



MS12

Ordering data

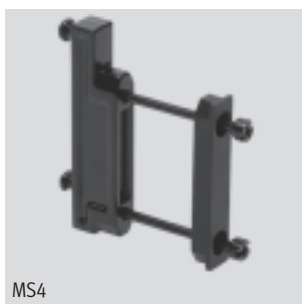
Size	Weight [g]	Part No.	Type
MS4	36	532 798	MS4-MV
MS6	54	532 799	MS6-MV
MS12	500	537 134	MS12-MV

Module connector MS4/6-MVM

- For installation of modules with regulating knob pointing downwards

Material:

Die-cast aluminium



MS4



MS6

Ordering data

Size	Part No.	Type
MS4	532 800	MS4-MVM
MS6	532 801	MS6-MVM

MS series service units

Accessories

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Filter cartridge MS4/6-LF...



MS...-LFM



MS...-LFP



MS...-LFX

Ordering data				
Size		Grade of filtration [μm]	Part No.	Type
MS4	Micro-filter cartridge	0.01	162 674	MS4/D-MINI-LFM-A
	Fine-filter cartridge	1	162 677	MS4/D-MINI-LFM-B
	Filter cartridge	5	534 501	MS4-LFP-C
	Filter cartridge	40	534 502	MS4-LFP-E
	Active carbon filter cartridge	Residual oil content ≤ 0.003 mg/m ³	532 912	MS4/D-MINI-LFX
MS6	Micro-filter cartridge	0.01	532 909	MS6-LFM-A
	Fine-filter cartridge	1	532 910	MS6-LFM-B
	Filter cartridge	5	534 499	MS6-LFP-C
	Filter cartridge	40	534 500	MS6-LFP-E
	Active carbon filter cartridge	Residual oil content ≤ 0.003 mg/m ³	532 911	MS6-LFX

Filter cartridge MS12-LF...



MS12-LFM-B



MS12-LFM-A



MS12-LFX

Ordering data				
Size		Grade of filtration [μm]	Part No.	Type
MS12	Micro-filter cartridge	0.01	537 146	MS12-LFM-A
	Fine-filter cartridge	1	537 145	MS12-LFM-B
	Filter cartridge	5	537 143	MS12-LFP-C
	Filter cartridge	40	537 144	MS12-LFP-E
	Active carbon filter cartridge	Residual oil content ≤ 0.003 mg/m ³	537 147	MS12-LFX

MS series service units

Accessories

FESTO

Ordering data – Plug socket with cable SIM-M8			Technical data → www.festo.com	
	Electrical connection	Cable length [m]	Part No.	Type
	M8x1, 3-pin	2.5	159 420	SIM-M8-3GD-2,5-PU
		5	159 421	SIM-M8-3GD-5-PU
		10	192 964	SIM-M8-3GD-10-PU
	M8x1, 4-pin	2.5	158 960	SIM-M8-4GD-2,5-PU
		5	158 961	SIM-M8-4GD-5-PU
		10	192 965	SIM-M8-4GD-10-PU
	M8x1, 3-pin	2.5	159 422	SIM-M8-3WD-2,5-PU
		5	159 423	SIM-M8-3WD-5-PU
		10	192 965	SIM-M8-3WD-10-PU
	M8x1, 4-pin	2.5	158 962	SIM-M8-4WD-2,5-PU
		5	158 963	SIM-M8-4WD-5-PU
		10	192 965	SIM-M8-4WD-10-PU

Ordering data – Plug socket with cable SIM-M12			Technical data → www.festo.com	
	Electrical connection	Cable length [m]	Part No.	Type
	M12x1, 3-pin	2.5	159 428	SIM-M12-3GD-2,5-PU
		5	159 429	SIM-M12-3GD-5-PU
		10	192 964	SIM-M12-3GD-10-PU
	M12x1, 4-pin	2.5	158 960	SIM-M12-4GD-2,5-PU
		5	158 961	SIM-M12-4GD-5-PU
		10	192 965	SIM-M12-4GD-10-PU
	M12x1, 3-pin	2.5	159 430	SIM-M12-3WD-2,5-PU
		5	159 431	SIM-M12-3WD-5-PU
		10	192 965	SIM-M12-3WD-10-PU
	M12x1, 4-pin	2.5	158 962	SIM-M12-4WD-2,5-PU
		5	158 963	SIM-M12-4WD-5-PU
		10	192 965	SIM-M12-4WD-10-PU

Ordering data – Pressure gauge MA					Technical data → www.festo.com	
	Nominal size	Pneumatic connection	Indicating range		Part No.	Type
			[bar]	[psi]		
	Pressure gauge MA, DIN EN 837-1					Technical data → www.festo.com
	40	G $\frac{1}{4}$	0 ... 16	0 ... 232	183 901	MA-40-16-G $\frac{1}{4}$ -EN
	Pressure gauge MA, DIN EN 837-1, with red-green range					Technical data → www.festo.com
	40	R $\frac{1}{8}$	0 ... 16	–	525 726	MA-40-16-R $\frac{1}{8}$ -E-RG
	50	R $\frac{1}{4}$	0 ... 16	–	525 729	MA-50-16-R $\frac{1}{4}$ -E-RG
	Precision pressure gauge MAP, DIN EN 837-1					Technical data → www.festo.com
	40	R $\frac{1}{8}$	0 ... 1	0 ... 15	161 126	MAP-40-1- $\frac{1}{8}$ -EN
			0 ... 4	0 ... 58	162 842	MAP-40-4- $\frac{1}{8}$ -EN
			0 ... 6	0 ... 87	161 127	MAP-40-6- $\frac{1}{8}$ -EN
			0 ... 16	0 ... 232	161 128	MAP-40-16- $\frac{1}{8}$ -EN

MS series service units

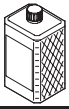
Accessories

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Ordering data – Silencer U			Technical data → www.festo.com	
	Description	Pneumatic connection	Part No.	Type
	for MS4-EM1/EE	G1/4	6 842	U-1/4-B
	for MS6-EM1/EE	G1/2	6 844	U-1/2-B
	for MS12-EM/EE	G1	151 990	U-1-B

Ordering data – Double nipple ESK				
	Description	Pneumatic connection		Part No. Type
	Adjustable for angular compensation • For retro-fitting pressure switch PEV or pressure sensor SDE1 to branching module MS-FRM	R1/8	R1/4	534 151 ESK-1/8-1/4
		R1/4	R1/4	151 521 ESK-1/4-1/4
			R1/2	534 153 ESK-1/4-1/2

Ordering data – Padlock LRV5-D				
	Description	Weight [g]	Part No.	Type
	for filter or pressure regulators	120	193 786	LRV5-D

Ordering data – Special oil OFSW				
	Description	Scope of delivery	Part No.	Type
	for lubricators	1 litre	152 811	OFSW-32