

## Filter regulators MS-LFR-B

**FESTO**



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for the  
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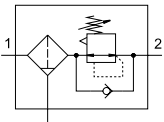
## Key features

### At a glance

Very compact and extremely lightweight series for use close to the process directly in the machine.

- Stable control response
- With secondary exhaust
- Integrated secondary and primary exhausting with return flow function
- The rotary knob latches in order to prevent it from being turned unintentionally

### Function



- For stepless, precise adjustment of the required operating pressure
- The pressure regulator maintains a constant working pressure regardless of pressure fluctuations in the system and air consumption

### Pneumatic connection

Depending on the size, different connection types can be selected:

- Individual fittings that are fastened via a female thread
- Built-in connections into which the tubing can be directly inserted

### Pressure regulation range [bar]

The following ranges can be set:

- With MS2-...: 0.5 ... 7 bar
- With MS4-... and MS6-...: 0.3 ... 7 bar

### Grade of filtration [µm]

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

### Condensate drain

The following functions can be selected:

- Manual
- Fully automatic, normally closed

### Pressure gauge alternatives

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

### Alternative pressure gauge scale

The scale of the built-in pressure gauge can be selected. The units [MPa], [bar] and [psi] are available for selection.

### Version

[B] Basic

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

## Type codes

001	Series
MS	MS series

002	Size
2	Grid dimension 25 mm
4	Grid dimension 40 mm
6	Grid dimension 62 mm

003	Function
LFR	Filter 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	0.3 ... 7 bar

006	Filter design
C	5 µm
E	40 µm

007	Bowl type
P	Polymer

008	Condensate drain
M	Manually
VC	Fully automatic, normally closed

009	Pressure gauge alternatives
AR	With pressure gauge
AG	MS pressure gauge
AB	Adapter for EN pressure gauge 1/8, without pressure gauge

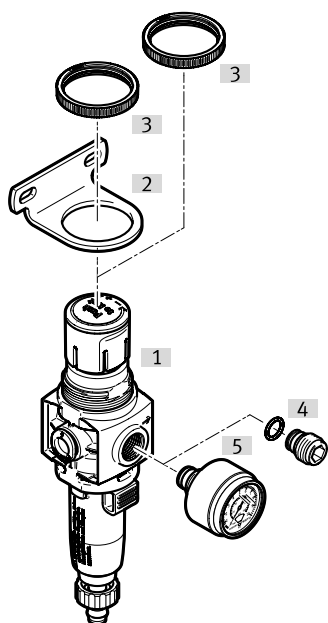
010	Alternative pressure gauge scale
	MS pressure gauge
BAR	bar
MPA	MPa

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

012	Version
B	Basic

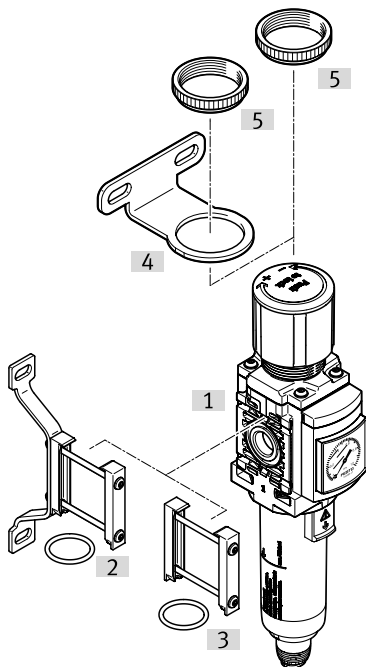
Peripherals overview

Size 2



Mounting attachments and accessories		→ Page/Internet
[1]	Filter regulator MS2-LFR...-B	5
[2]	Mounting bracket MS2-WR-B	For wall mounting, knurled nut included in the scope of delivery
[3]	Nut MS2-WRS	For front panel mounting
[4]	Plug screw MS2-G18S	13
[5]	Pressure gauge PAGN	13
-	Filter cartridge LFP	13

Size 4 and 6



Mounting attachments and accessories		→ Page/Internet
[1]	Filter regulator MS4/6-LFR...-B	5
[2]	Wall mounting kit MS...-WPE-B	For connecting the modules for wall mounting
[3]	Module connector MS...-MV1	For connecting the modules
[4]	Mounting bracket MS...-WR-B	For wall mounting, knurled nut included in the scope of delivery
[5]	Nut MS...WRS	For front panel mounting
-	Filter cartridge MS...-LFP	13

## Datasheet

General technical data				
Pneumatic connection 1	G1/2	G1/4	M5	QS-6
Size	6	4	2	
Pneumatic connection 2	G1/2	G1/4	M5	QS-6
Standard nominal flow rate	4750 ... 5300 l/min		1500 ... 1700 l/min	310 l/min
Pressure regulation range	0.03 ... 0.7 MPa		0.05 ... 0.7 MPa	
	0.3 ... 7 bar		0.5 ... 7 bar	
	4.35 ... 101.5 psi		7.25 ... 101.5 psi	
Max. pressure hysteresis	0.035 MPa	0.05 MPa	0.025 MPa	
	0.35 bar	0.5 bar	0.25 bar	
	5.075 psi	7.25 psi	3.63 psi	
Design	Filter regulator with pressure gauge, filter regulator without pressure gauge, directly actuated piston regulator		Filter regulator with pressure gauge, filter regulator without pressure gauge	
Regulator function	Output pressure constant, with secondary exhausting, with return flow action			
Type of mounting	Optional: front panel mounting, in-line installation, with accessories			
Mounting position	Vertical +/-5°			
Actuator lock	Rotary knob with latch			
Pressure indication	G1/8 prepared, with pressure gauge			
Grade of filtration	5 µm, 40 µm		5 µm	
Condensate drain	Fully automatic, manual non-detenting, manual rotary		Manual	

Operating and environmental conditions										
Grade of filtration	5					40				
Condensate drain	Fully automatic, manual non-detenting			Manual			Fully automatic, manual non-detenting		Manual	
Pneumatic connection 1	G1/4	G1/2	M5	QS-6	G1/4	G1/2	G1/4	G1/2	G1/4	G1/2
Operating pressure	0.2 ... 1 MPa		0.1 ... 1 MPa	0.1 ... 0.8 MPa	0.1 ... 1 MPa		0.2 ... 1 MPa		0.1 ... 1 MPa	
	2 ... 10 bar		1 ... 10 bar	1 ... 8 bar	1 ... 10 bar		2 ... 10 bar		1 ... 10 bar	
	29 ... 145 psi		14.5 ... 145 psi	14.5 ... 116 psi	14.5 ... 145 psi		29 ... 145 psi		14.5 ... 145 psi	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4], inert gases									
Note on the operating/pilot medium	Compatibility with ester oil not guaranteed <sup>1)</sup>									
Air purity class at the output	Compressed air to ISO 8573-1:2010 [6:4:4]					Compressed air to ISO 8573-1:2010 [7:4:4]				
Ambient temperature	5 ... 50°C		-5 ... 50°C			5 ... 50°C		-5 ... 50°C		
Temperature of medium	5 ... 50°C		-5 ... 50°C			5 ... 50°C		-5 ... 50°C		
Storage temperature	-5 ... 50°C									
Corrosion resistance class CRC <sup>2)</sup>	1 - Low corrosion stress									

1) Applies for size 6

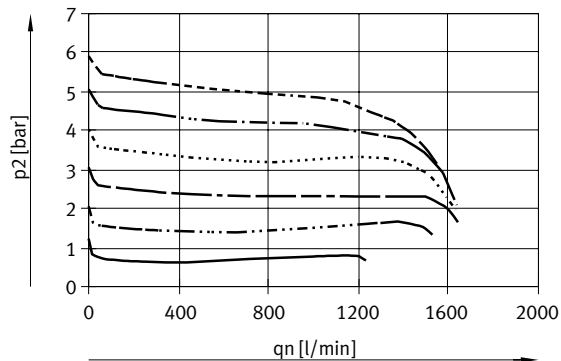
2) Further information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

Materials				
Pneumatic connection 1	G1/2	G1/4	M5	QS-6
Size	6	4	2	
Housing material	Reinforced PA		PA	
Rotary knob material	POM			
Valve tappet material	POM		Wrought aluminium alloy, NBR	
Diaphragm material	-		NBR	
Spring material	High-alloy steel, galvanised steel		High-alloy steel	
Filter material	PE			
Note on materials	RoHS-compliant			
LABS (PWIS) conformity	VDMA24364-B1/B2-L			

Datasheet

**Standard flow rate  $q_n$  as a function of output pressure  $p_2$   
( $p_1 = 7$  bar)**

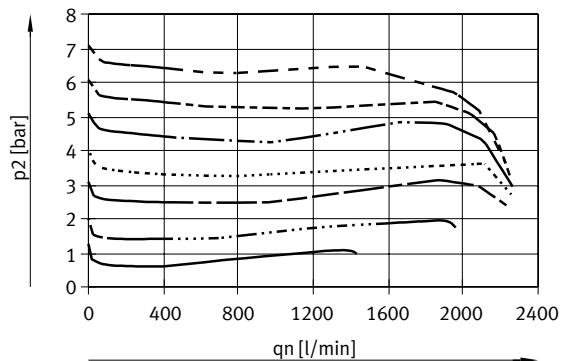
MS4-LFR...-C...-B (grade of filtration: 5  $\mu\text{m}$ )



- 1 bar
- ..... 2 bar
- 3 bar
- . - . - 4 bar
- · — · — 5 bar
- 6 bar

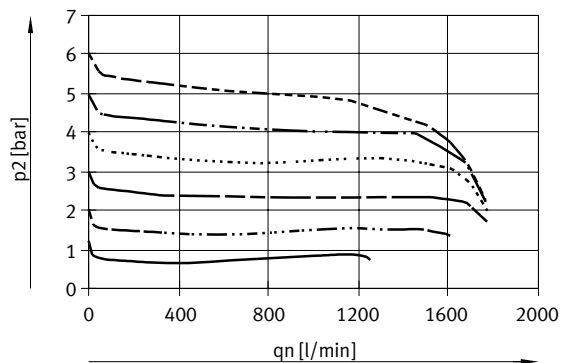
**Standard flow rate  $q_n$  as a function of output pressure  $p_2$   
( $p_1 = 10$  bar)**

MS4-LFR...-C...-B (grade of filtration: 5  $\mu\text{m}$ )



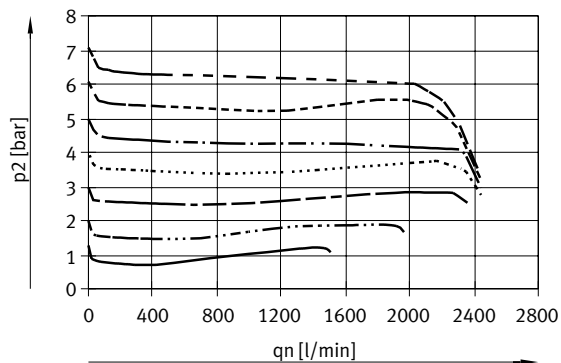
- 1 bar
- ..... 2 bar
- 3 bar
- . - . - 4 bar
- · — · — 5 bar
- 6 bar
- . - . - 7 bar

MS4-LFR...-E...-B (grade of filtration: 40  $\mu\text{m}$ )



- 1 bar
- ..... 2 bar
- 3 bar
- . - . - 4 bar
- · — · — 5 bar
- 6 bar

MS4-LFR...-E...-B (grade of filtration: 40  $\mu\text{m}$ )

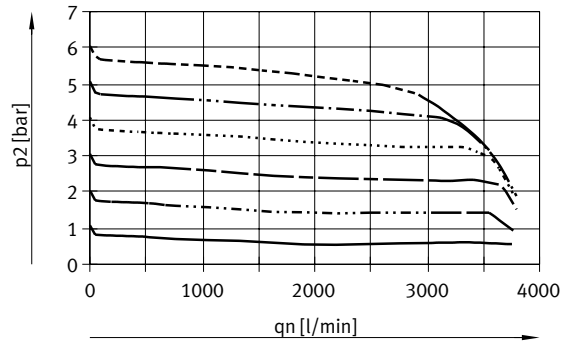


- 1 bar
- ..... 2 bar
- 3 bar
- . - . - 4 bar
- · — · — 5 bar
- 6 bar
- . - . - 7 bar

Datasheet

Standard flow rate  $q_n$  as a function of output pressure  $p_2$   
( $p_1 = 7$  bar)

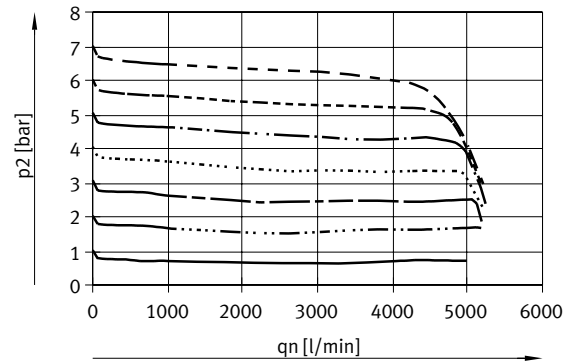
MS6-LFR...C...B (grade of filtration: 5  $\mu\text{m}$ )



- 1 bar
- · - · - 2 bar
- - - 3 bar
- · · · · 4 bar
- · - · - 5 bar
- - - 6 bar

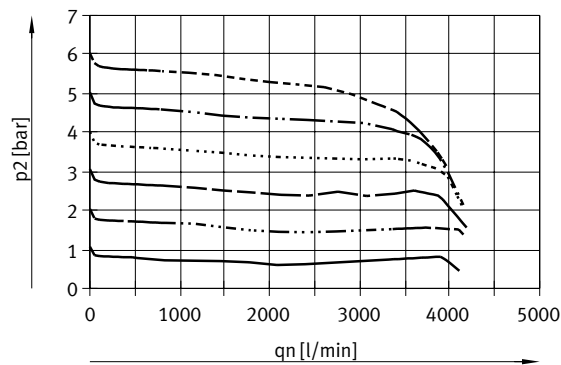
Standard flow rate  $q_n$  as a function of output pressure  $p_2$   
( $p_1 = 10$  bar)

MS6-LFR...C...B (grade of filtration: 5  $\mu\text{m}$ )



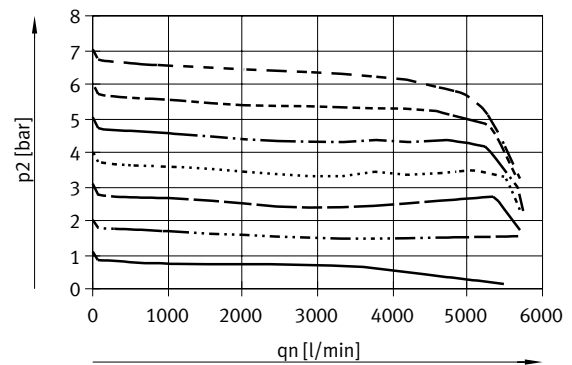
- 1 bar
- · - · - 2 bar
- - - 3 bar
- · · · · 4 bar
- · - · - 5 bar
- - - 6 bar
- - - 7 bar

MS6-LFR...E...B (grade of filtration: 40  $\mu\text{m}$ )



- 1 bar
- · - · - 2 bar
- - - 3 bar
- · · · · 4 bar
- · - · - 5 bar
- - - 6 bar

MS6-LFR...E...B (grade of filtration: 40  $\mu\text{m}$ )



- 1 bar
- · - · - 2 bar
- - - 3 bar
- · · · · 4 bar
- · - · - 5 bar
- - - 6 bar
- - - 7 bar

Datasheet

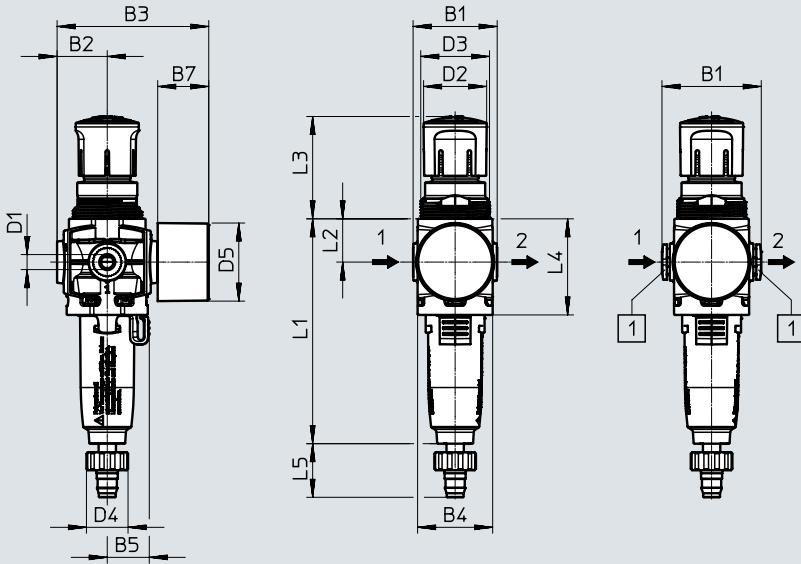
**Dimensions**

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

[AR] With pressure gauge

MS2-LR-M5-...-AR

MS2-LR-QS6-...-AR



[1] Pneumatic connection QS-6  
→ Flow direction

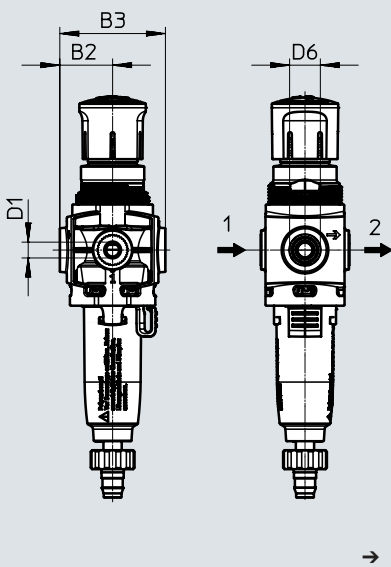
Type	B1	B2	B3	B4	B5	B7	D1	D2 ∅	D3 ∅	D4	D5 ∅	L1	L2	L3	L4	L5
MS2-LFR-M5-...-AR	28	16.7	51	25	14	17	M5	21	M23 x 1	13.8	26	74.9	14.4	34.1	32	17.9
MS2-LFR-QS6-...-AR	33.1						QS-6									

**Dimensions**

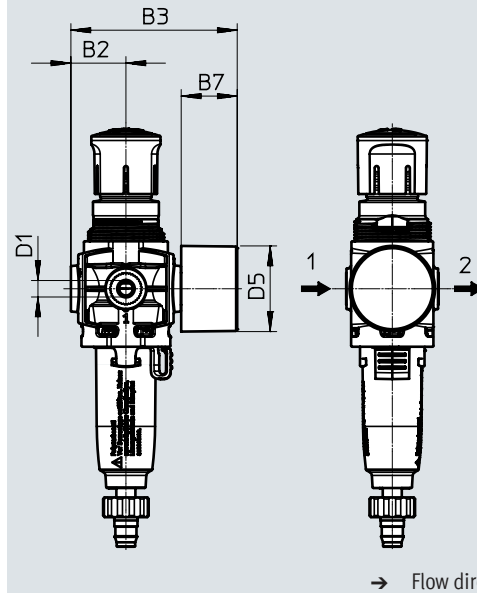
Download CAD data → [www.festo.com](http://www.festo.com)

[A8] Adapter for EN pressure gauge 1/8, without pressure gauge

[AR] Pressure gauge



→ Flow direction



→ Flow direction

Type	B2	B3	B7	D1	D5 ∅	D6
MS2-LFR-M5-...-A8	16.7	33.4	-	M5	-	G1/8
MS2-LFR-QS6-...-A8				QS-6		
MS2-LFR-M5-...-AR	16.7	51	17	M5	26	-
MS2-LFR-QS6-...-AR				QS-6		

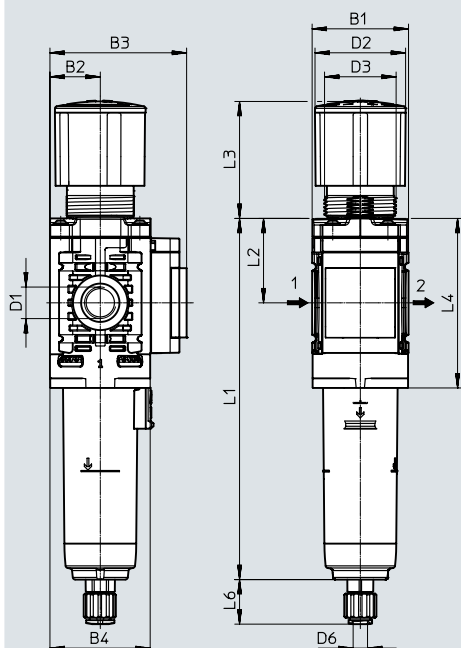


Datasheet

Dimensions

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

[AG] With pressure gauge



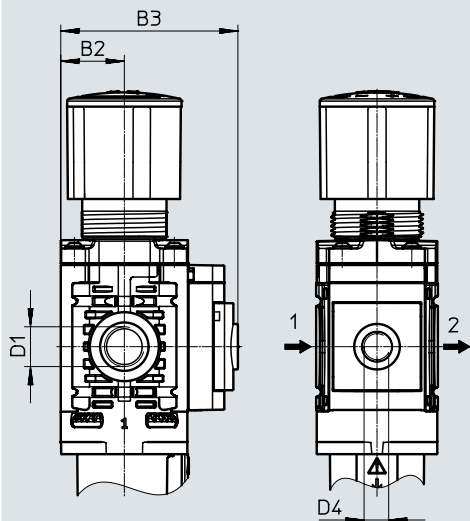
→ Flow direction

	B1	B2	B3	B4	D1	D2 ∅	D3	D6	L1	L2	L3	L4	L6
MS4-LFR-1/4-...-AG	40.2	21	57	41.8	G1/4	37.8	M30 x 1.5	QS6	150.6	34.9	49.4	70.7	18.6

Dimensions

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

[A8] Without pressure gauge, adapter for EN pressure gauge 1/8



→ Flow direction

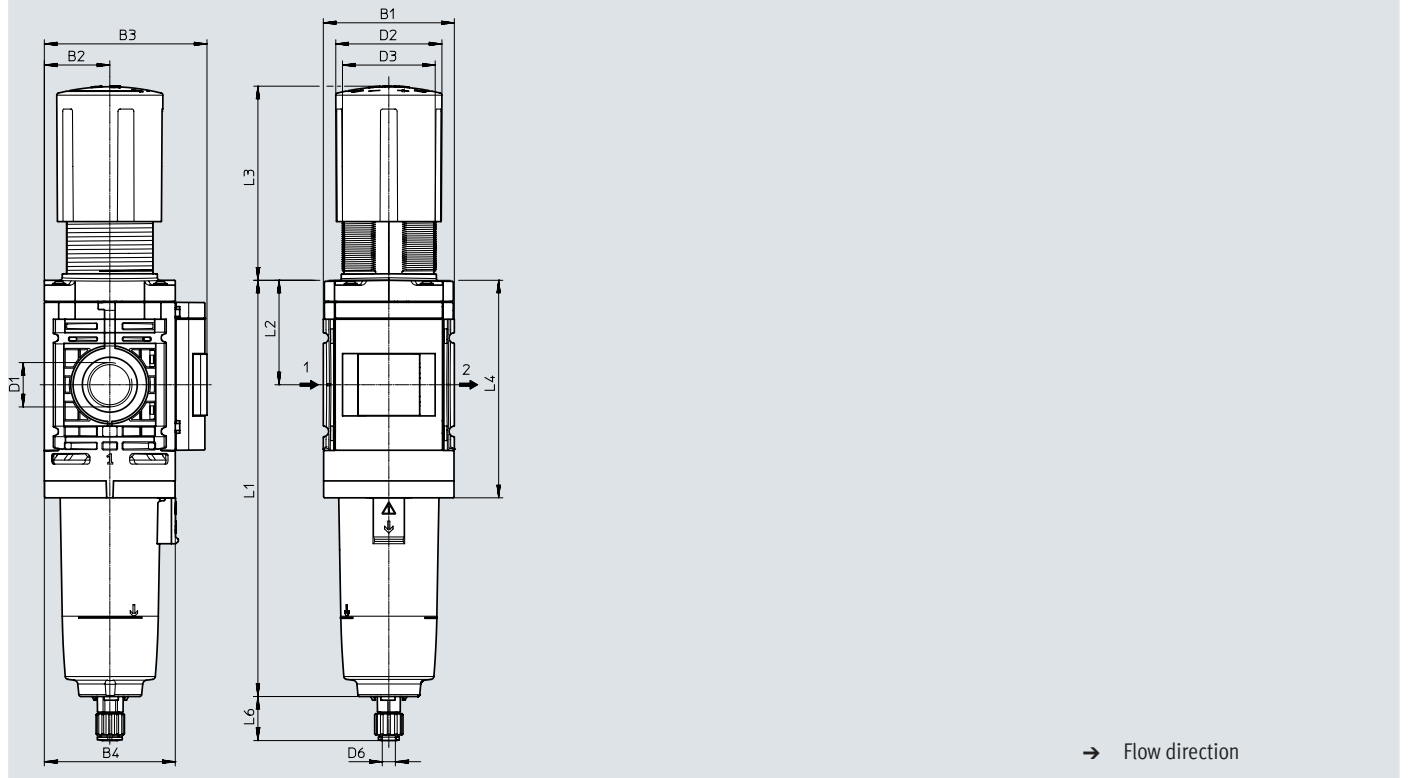
	B2	B3	D1	D4
MS4-LFR-1/4-...-A8	21	59.6	G1/4	G1/8

Datasheet

**Dimensions**

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

[AG] With pressure gauge

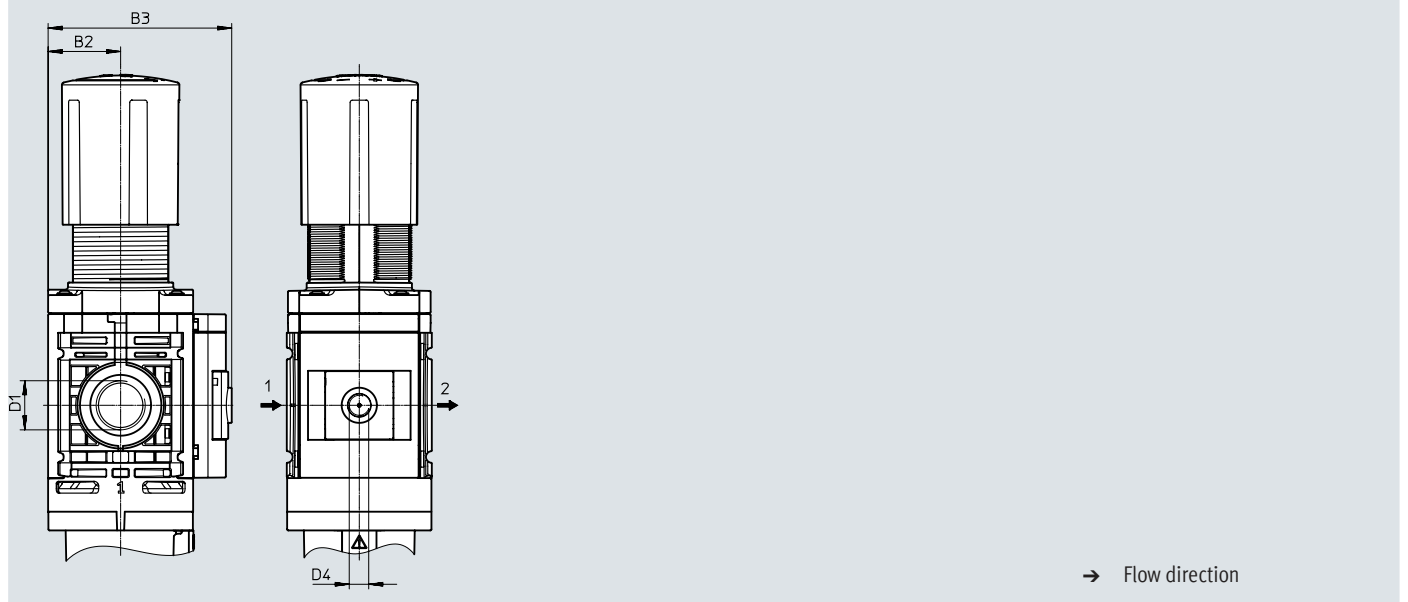


	B1	B2	B3	B4	D1	D2 ∅	D3 ∅	D6	L1	L2	L3	L4	L6
MS6-LFR-1/2-...-AG-...-M	62	31	77	62	G1/2	50.2	43.9	QS6	197	49.4	91.8	102.9	20.9
MS6-LFR-1/2-...-AG-...-VC													22.3

**Dimensions**

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

[A8] Without pressure gauge, adapter for EN pressure gauge 1/8



	B2	B3	D1	D4
MS6-LFR-1/2-...-A8	31	78.5	G1/2	G1/8

## Datasheet

## ★ Core Range

Ordering data										
Size	Pneumatic connection	Pressure gauge	Pressure gauge scale	Grade of filtration [µm]	Condensate drain	Product weight [g]	Part no.	Type		
2	M5	with	MPa	5	Manual	46.8	8086642	MS2-LFR-M5-D6-AR-MPA-C-M-B		
			bar	5	Manual	46.8	8086641	MS2-LFR-M5-D6-AR-BAR-C-M-B		
		None	–	5	Manual	39	8086643	MS2-LFR-M5-D6-A8-C-M-B		
	QS-6	with	MPa	5	Manual	43.5	8086645	MS2-LFR-QS6-D6-AR-MPA-C-M-B		
			bar	5	Manual	43.5	8086644	MS2-LFR-QS6-D6-AR-BAR-C-M-B		
		None	–	5	Manual	35.7	8086646	MS2-LFR-QS6-D6-A8-C-M-B		
4	G1/4	with	MPa	5	Manual	207	★ 8098265	MS4-LFR-1/4-D6-C-P-M-AG-MPA-B		
			bar	5	Manual	207	★ 8098257	MS4-LFR-1/4-D6-C-P-M-AG-BAR-B		
		None	–	5	Manual	204	8098260	MS4-LFR-1/4-D6-C-P-M-A8-B		
		with	MPa	5	Fully automatic	216	★ 8098266	MS4-LFR-1/4-D6-C-P-VC-AG-MPA-B		
			bar	5	Fully automatic	216	★ 8098259	MS4-LFR-1/4-D6-C-P-VC-AG-BAR-B		
		None	–	5	Fully automatic	213	8098263	MS4-LFR-1/4-D6-C-P-VC-A8-B		
		with	MPa	40	Manual	207	★ 8098254	MS4-LFR-1/4-D6-E-P-M-AG-MPA-B		
			bar	40	Manual	207	★ 8098258	MS4-LFR-1/4-D6-E-P-M-AG-BAR-B		
		None	–	40	Manual	204	8098255	MS4-LFR-1/4-D6-E-P-M-A8-B		
		with	MPa	40	Fully automatic	216	★ 8098256	MS4-LFR-1/4-D6-E-P-VC-AG-MPA-B		
			bar	40	Fully automatic	216	★ 8098264	MS4-LFR-1/4-D6-E-P-VC-AG-BAR-B		
		None	–	40	Fully automatic	213	8098262	MS4-LFR-1/4-D6-E-P-VC-A8-B		
		6	G1/2	with	MPa	5	Manual	581	★ 8098310	MS6-LFR-1/2-D6-C-P-M-AG-MPA-B
					bar	5	Manual	581	★ 8098300	MS6-LFR-1/2-D6-C-P-M-AG-BAR-B
None	–			5	Manual	578	8098301	MS6-LFR-1/2-D6-C-P-M-A8-B		
with	MPa			5	Fully automatic	589	★ 8098302	MS6-LFR-1/2-D6-C-P-VC-AG-MPA-B		
	bar			5	Fully automatic	589	★ 8098309	MS6-LFR-1/2-D6-C-P-VC-AG-BAR-B		
None	–			5	Fully automatic	585	8098303	MS6-LFR-1/2-D6-C-P-VC-A8-B		
with	MPa			40	Manual	581	★ 8098307	MS6-LFR-1/2-D6-E-P-M-AG-MPA-B		
	bar			40	Manual	581	★ 8098304	MS6-LFR-1/2-D6-E-P-M-AG-BAR-B		
None	–			40	Manual	578	8098311	MS6-LFR-1/2-D6-E-P-M-A8-B		
with	MPa			40	Fully automatic	589	★ 8098305	MS6-LFR-1/2-D6-E-P-VC-AG-MPA-B		
	bar			40	Fully automatic	589	★ 8098312	MS6-LFR-1/2-D6-E-P-VC-AG-BAR-B		
None	–			40	Fully automatic	585	8098306	MS6-LFR-1/2-D6-E-P-VC-A8-B		

## Accessories

### Mounting bracket

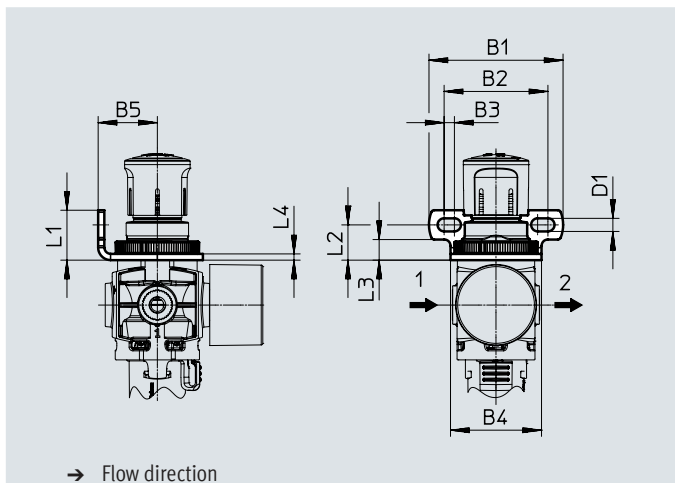
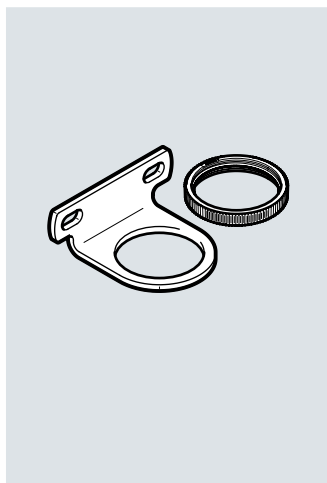
#### MS...-WR-B

For sizes 2, 4 and 6

- For wall mounting
- Knurled nut included in the scope of delivery

Materials:

Steel  
RoHS-compliant



Dimensions and ordering data												
Size	B1 ±0.2	B2	B3	B4	L1	L2	L3 ±0.1	L4	Weight [g]	Part no.	Type	
2	43	30	3.3	19	30.4	25.7	4.2	2	13.8	8087978	MS2-WR-B	
4	68	44	8	41	52	44	7	2.5	49	8149680	MS4-WR-B	
6	70	42	8.2	40	67	57	7.1	3	90	8149681	MS6-WR-B	

### Wall mounting kit

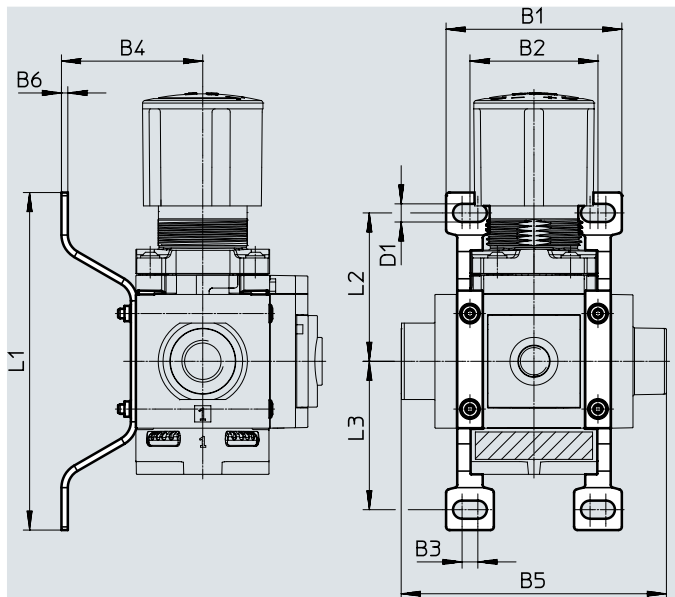
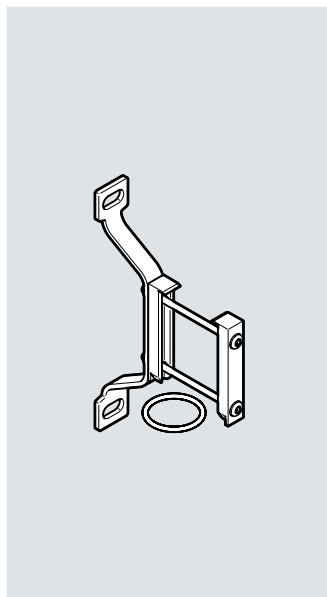
#### MS...-WPE-B

For sizes 4 and 6

- For wall mounting

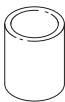
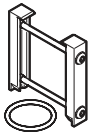




Materials:

Steel  
RoHS-compliant



Dimensions and ordering data													
Size	B1	B2	B3	B4	B5	B6	D1 ∅	L1	L2	L3	Weight [g]	Part no.	Type
4	55.2	40.2	5	44.4	83.3	2	5.7	106	46.6	46.6	30	8118600	MS4-WPE-B
6	79	62	4.3	53.9	114.9	2	6.5	158	71	71	58	8118599	MS6-WPE-B

## Accessories

Ordering data				
	Size	Description	Part no.	Type
<b>Filter cartridge</b>				
	4	Grade of filtration 5 µm	8129064	MS4-LFP1-C
		Grade of filtration 40 µm	8129062	MS4-LFP1-E
	6	Grade of filtration 5 µm	8129063	MS6-LFP1-C
		Grade of filtration 40 µm	8129061	MS6-LFP1-E
<b>Module connector</b>				
	4	For connecting the modules for wall mounting	8119201	MS4-MV1
	6		8119204	MS6-MV1
<b>Nut</b>				
	2	For front panel mounting	8098037	MS2-WRS
	4		532187	MS4-WRS
	6		532188	MS6-WRS
<b>Pressure gauge</b>				
	2	Display units [bar]/[psi]	8088985	PAGN-26-10-G18S
		Display units [MPa]	8088986	PAGN-26-1M-G18S
<b>Plug screw</b>				
	2	For sealing the pressure gauge connection	8095766	MS2-G18S

# Festo - Your Partner in Automation



**1 Festo Inc.**  
5300 Explorer Drive  
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