

Pressure regulators MS-LR-B

FESTO



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Fast:

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for the
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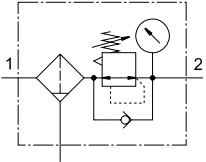
Key features

At a glance

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

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

Function



For continuously variable, 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

Different connection types can be selected depending on size

- Individual fittings which are mounted via a female thread
- Integrated 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

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.

Special material properties

[F1A] Recommended for production facilities for manufacturing lithium-ion batteries

Metals with copper, zinc or nickel as the main constituent are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.

Version

[B] Basic

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

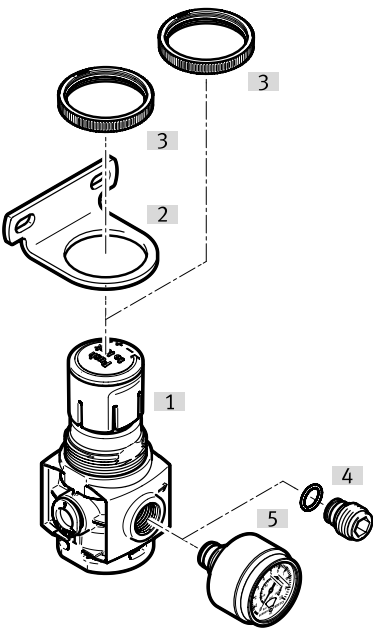
Type codes

001	Series	
MS	MS series	
002	Size	
2	Grid dimension 25 mm	
4	Grid dimension 40 mm	
6	Grid dimension 62 mm	
003	Function	
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	0.3 ... 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	
	MS pressure gauge	
BAR	bar	
MPA	MPa	
008	Special material properties	
	None	
F1A	Recommended for production facilities for the manufacture of lithium-ion batteries	
009	Version	
B	Basic	

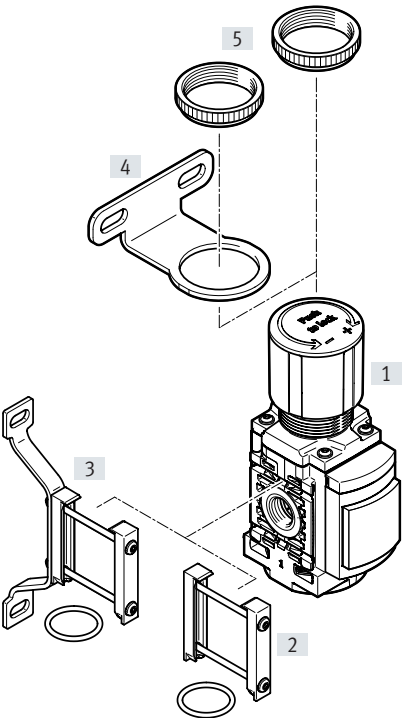
Peripherals overview

Size 2



Mounting attachments and accessories		→ Page/Internet
[1]	Pressure regulator MS2-LR-...-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

Size 4 and 6



Mounting attachments and accessories		→ Page/Internet
[1]	Pressure regulator MS4/6-LR-...-B	5
[2]	Module connector MS...-MV1	For connecting the modules
[3]	Wall mounting kit MS...-WPE-B	For connecting the modules for wall mounting
[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

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	6000 l/min	1800 l/min	170 l/min	350 l/min
Pressure regulation range	0.03 ... 0.7 MPa		0.05 ... 0.7 MPa	
	4.35 ... 101.5 psi		7.25 ... 101.5 psi	
	0.3 ... 7 bar		0.5 ... 7 bar	
Max. pressure hysteresis	0.035 MPa	0.05 MPa	0.025 MPa	
	5.075 psi	7.25 psi	3.63 psi	
	0.35 bar	0.5 bar	0.25 bar	
Design	Pressure regulator with pressure gauge, pressure regulator without pressure gauge, directly actuated piston regulator		Directly actuated diaphragm regulator	
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	Any			
Actuator lock	Rotary knob with latch			
Pressure indication	G1/8 prepared, with pressure gauge			

Operating and environmental conditions				
Pneumatic connection 1	G1/2	G1/4	M5	QS-6
Size	6	4	2	
Operating pressure	0.1 ... 1 MPa			0.1 ... 0.8 MPa
	14.5 ... 145 psi			14.5 ... 116 psi
	1 ... 10 bar			1 ... 8 bar
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4], inert gases			
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)			
Ambient temperature	-5 ... 50 °C			
Temperature of medium	-5 ... 50 °C			
Storage temperature	-5 ... 50 °C			
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress			

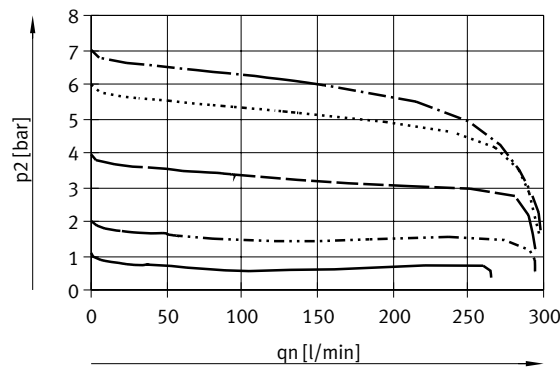
1) For additional information www.festo.com/x/topic/crc

Additional operating and environmental conditions – Products for battery production (MS...-F1A-B)	
Suitable for the production of lithium-ion batteries	Metals with more than 1% by mass of copper, zinc or nickel are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.
Cleanroom class	Class 1 to ISO 14644-1

Materials				
Pneumatic connection 1	G1/2	G1/4	M5	QS-6
Size	6	4	2	
Housing material	Reinforced 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	
Note on materials	RoHS-compliant			
LABS (PWIS) conformity	VDMA24364-B1/B2-L			

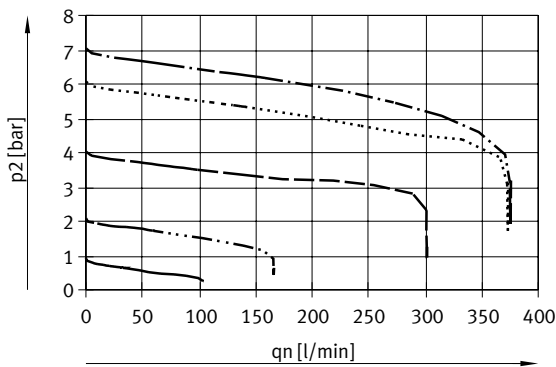
Datasheet

Standard flow rate q_n as a function of output pressure p_2
($p_1 = 8 \text{ bar}$)
MS2-LR-QS6-B



- 1 bar
- 2 bar
- 4 bar
- 6 bar
- 7 bar

Standard flow rate q_n as a function of output pressure p_2
($p_1 = 10 \text{ bar}$)
MS2-LR-M5-B

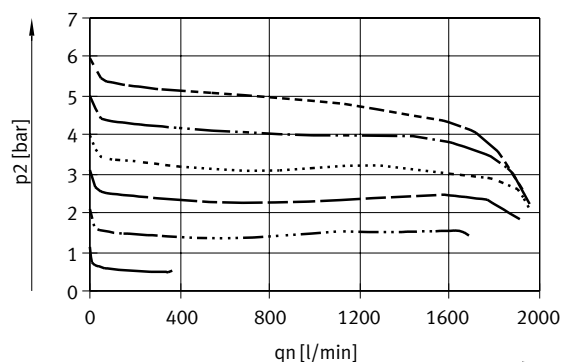


- 1 bar
- 2 bar
- 4 bar
- 6 bar
- 7 bar

Datasheet

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

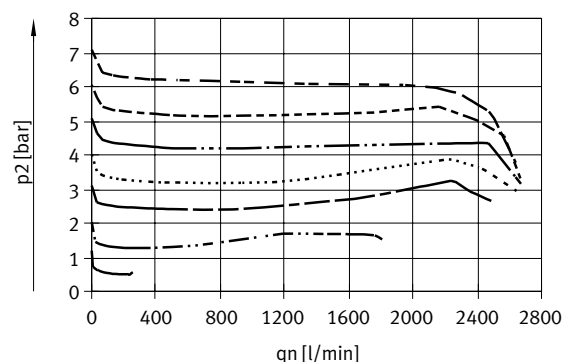
MS4-LR...-B



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

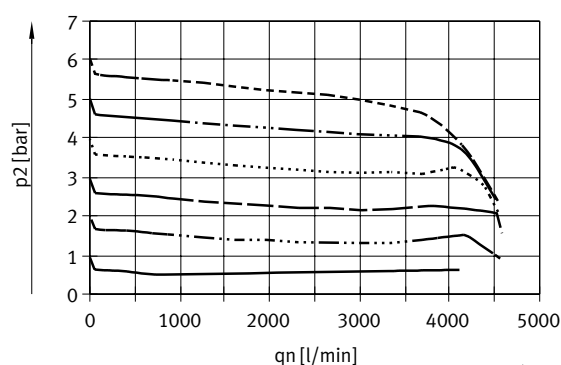
Standard flow rate q_n as a function of output pressure p_2
($p_1 = 10$ bar)

MS4-LR...-B



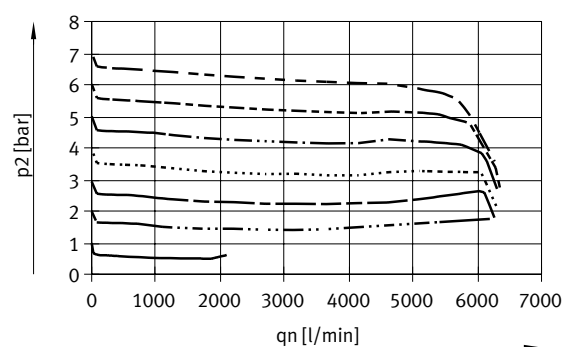
— 1 bar
 - - - 2 bar
 - - - 3 bar
 4 bar
 - . - . 5 bar
 - - - 6 bar
 - - - 7 bar

MS6-LR...-B



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

MS6-LR...-B



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

Datasheet

Dimensions Download CAD data → www.festo.com

[AR] With pressure gauge

MS2-LR-M5-...-AR

MS2-LR-QS6-...-AR

[1] Pneumatic connection QS-6
→ Flow direction

	B1	B2	B3	B4	B7	D1	D2 Ø	D3 Ø	D5 Ø	L1	L2	L3
MS2-LR-M5-...-AR	28	16.7	51	25	17	M5	21	M23x1	26	31	14.4	34.1
MS2-LR-QS6-...-AR	33.1					QS-6						

Dimensions Download CAD data → www.festo.com

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

→ Flow direction

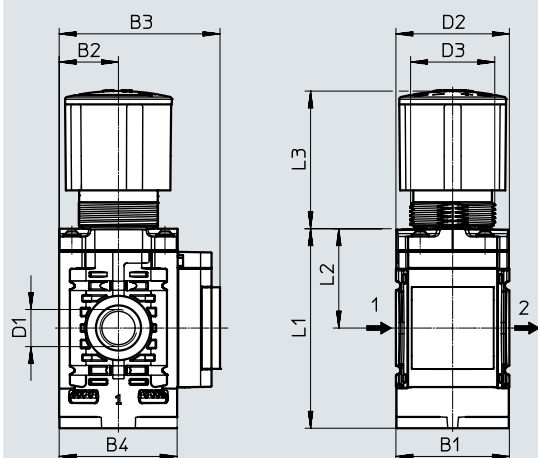
	B2	B3	D1	D6
MS2-LR-M5-...-A8	16.7	33.4	M5	G1/8
MS2-LR-QS6-...-A8			QS-6	

Datasheet

Dimensions

Download CAD data → www.festo.com

[AG] With pressure gauge



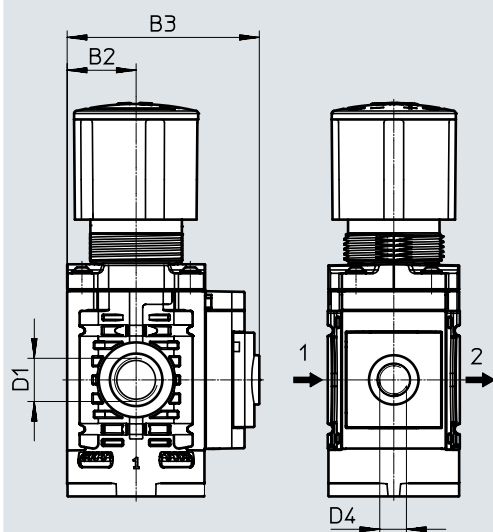
→ Flow direction

	B1	B2	B3	B4	D1	D2 Ø	D3	L1	L2	L3
MS4-LR-1/4-...-AG	40.2	21	57	41.8	G1/4	37.8	M30x1.5	70.7	35.2	48.8

Dimensions

Download CAD data → www.festo.com

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



→ Flow direction

	B2	B3	D1	D4
MS4-LR-1/4-...-A8	21	58.5	G1/4	G1/8

Datasheet

Dimensions Download CAD data → www.festo.com

[AG] With pressure gauge

→ Flow direction

	B1	B2	B3	B4	D1	D2 Ø	D3	L1	L2	L3
MS6-LR-1/2-...-AG	62	31	77	62	G1/2	50.2	43.9	102.9	49.4	91.8

Dimensions Download CAD data → www.festo.com

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

→ Flow direction

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

Datasheet

★ Core Range

Ordering data						
Size	Pneumatic connection	Pressure gauge	Pressure gauge scale	Product weight [g]	Part no.	Type
2	M5	Available	MPa	38.6	8086636	MS2-LR-M5-D6-AR-MPA-B
			bar	38.6	8086628	MS2-LR-M5-D6-AR-BAR-B
		None	–	30.8	8086637	MS2-LR-M5-D6-A8-B
	QS-6	Available	MPa	36.1	8086639	MS2-LR-QS6-D6-AR-MPA-B
			bar	36.1	8086638	MS2-LR-QS6-D6-AR-BAR-B
		None	–	28.3	8086640	MS2-LR-QS6-D6-A8-B
4	G1/4	Available	MPa	165	★ 8099359	MS4-LR-1/4-D6-AG-MPA-B
			bar	165	★ 8099358	MS4-LR-1/4-D6-AG-BAR-B
		None	–	163	8099360	MS4-LR-1/4-D6-A8-B
6	G1/2	Available	MPa	482	★ 8099204	MS6-LR-1/2-D6-AG-MPA-B
			bar	482	★ 8099205	MS6-LR-1/2-D6-AG-BAR-B
		None	–	479	8099203	MS6-LR-1/2-D6-A8-B

Ordering data – Products for battery production						
Size	Pneumatic connection	Pressure gauge	Pressure gauge scale	Product weight [g]	Part no.	Type
2	M5	Available	MPa	38.6	8167259	MS2-LR-M5-D6-AR-MPA-F1A-B
			bar	38.6	8167258	MS2-LR-M5-D6-AR-BAR-F1A-B
		None	–	30.8	8167260	MS2-LR-M5-D6-A8-F1A-B
	QS-6	Available	MPa	36.1	8167262	MS2-LR-QS6-D6-AR-MPA-F1A-B
			bar	36.1	8167261	MS2-LR-QS6-D6-AR-BAR-F1A-B
		None	–	28.3	8167263	MS2-LR-QS6-D6-A8-F1A-B

Accessories

Mounting bracket

MS...-WR-B

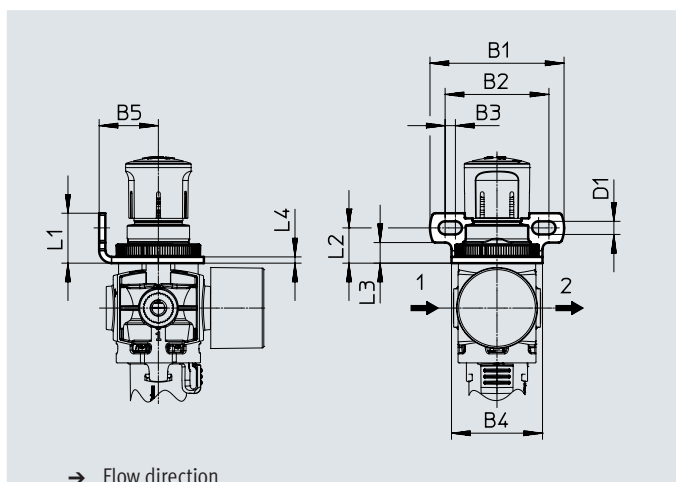
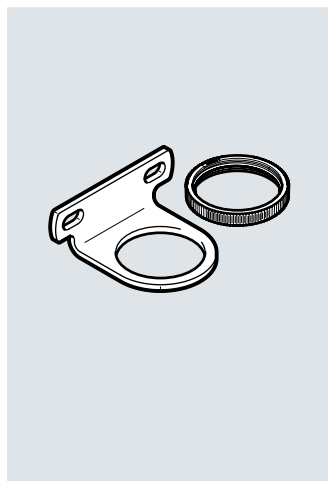
For sizes 2, 4 and 6

- 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
									14.6	8167322	MS2-WR-F1A-B ¹⁾
4	68	44	8	41	52	44	7	2.5	49	8149680	MS4-WR-B
										8176693	MS4-WR-F1A-B ¹⁾
6	70	42	8.2	40	67	57	7.1	3	90	8149681	MS6-WR-B

1) Recommended for production plants for manufacturing lithium-ion batteries. For additional information www.festo.com/x/topic/bat.

Wall mounting kit

MS...-WPE-B

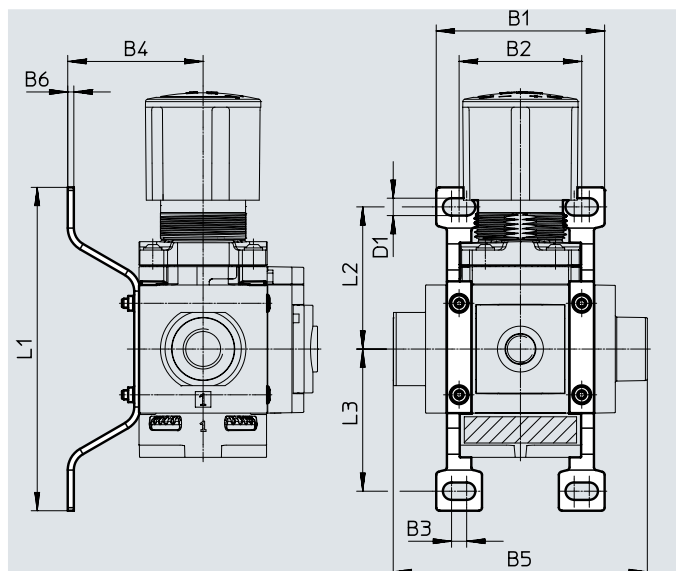
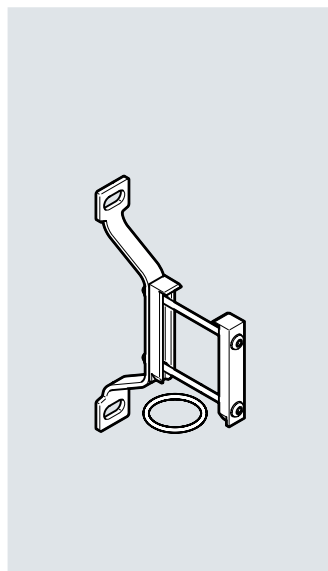
For sizes 4 and 6

- For wall mounting

Materials:

Steel

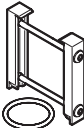
RoHS-compliant



Dimensions and ordering data

Size	B1	B2	B3	B4	B5	B6	D1 ø	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
Module connector				
	4	For connecting the modules for wall mounting	8119201	MS4-MV1
	6		8119204	MS6-MV1
Nut				
	2	For front panel mounting	8098037	MS2-WRS
	4		532187	MS4-WRS
	6		532188	MS6-WRS
Pressure gauge				
	2	Display unit [bar]/[psi]	8088985	PAGN-26-10-G18S
		Display unit [MPa]	8088986	PAGN-26-1M-G18S
Plug screw				
	2	For sealing the pressure gauge connection	8095766	MS2-G18S

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